

Reproductive Decision-Making in a Macro-Micro Perspective (REPRO)

State-of-the-Art Review

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European Demographic Research Papers are working papers that deal with all-European issues or with issues that are important to a large number of countries. All contributions have received only limited review.

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Preface: the REPRO project

REPRO is an acronym for “Reproductive Decision-Making in a Macro-Micro Perspective”, a project funded by the European Commission’s Seventh Framework Programme. The project unites the efforts of nine research institutions in Europe: Vienna Institute of Demography/Austrian Academy of Sciences (co-ordinator), Institut National d’Etudes Démographiques, Netherlands Interdisciplinary Demographic Institute, Carlo F. Dondena Centre for Research on Social Dynamics/Università Commerciale Luigi Bocconi, Max Planck Institute for Demographic Research (to be replaced by the University of Lausanne in the second half of the project), Demographic Research Institute, Norwegian Statistical Bureau, Co-ordination Research Centre for Social Research and Social Euro-integration/Bulgarian Academy of Sciences and Institute for Social and Economic Research/University of Essex.

This state-of-the-art report is structured along the work packages of the project and written by the work-package leaders. While preparing their texts, the authors greatly benefited from each other as well as from other participants in the project. The authors of the chapters in their final version are as follows:

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EXECUTIVE SUMMARY

Contemporary low levels of fertility give rise to the question whether people's behaviour adequately reflects their preferences for the number of children they would like to have. Specifically, some people might want to have more children than they actually do but they are unable to implement their wish for various reasons. Available studies indicate that fertility would increase considerably, up to levels around replacement, if the desired family size, be it measured by the ideal or the expected number of children, were actually realised. Hence the gap reflects the existence of unrealised fertility. Chesnais (2000) pointed out that the latter can be seen as a "latent demand for family policies" (p. 133). Meanwhile, this 'latent' demand for policies that aim at raising the number of births has turned into an overt one as witnessed by documents issued by European governmental bodies. The European Commission promptly acknowledged this relevance in its Green Paper issued in 2005 and in its White Paper published in 2006. In a Resolution passed in 2008, the European Parliament underlined that Europeans want to have more children.

For the governments of European Union Member States, the fertility gap indicates the existence of a window of opportunities offering the chance to elaborate family and child-friendly policies. This line of reasoning raises various issues that require profound and careful research. The REPRO project sheds light on some of them.

A key issue is the measurement and interpretation of the fertility gap defined as the difference between fertility behaviour and fertility preferences. The REPRO project focuses on *reproductive decision-making* performed by individuals, i.e. at the micro level. However, it takes place in an influential macro environment that defines the setting of the decision-taking process. The *macro-micro* relationships are another central topic in the REPRO project. This state-of-the-art report reviews recent findings obtained in studies of macro-level fertility, micro-level reproductive decision-making and macro-micro relationships.

The macro level includes studies of trends in fertility rates and their association with trends related to economic, social and cultural change. Recent fertility trends indicate that very low fertility may experience a rebound when the tempo effect declines. Hence a small increase in the total fertility rate (TFR) may be expected. However, researchers still discuss how changes in the timing of births develop and when exactly the rebound will occur in a particular country. Comparisons of age-specific fertility below and above age 30 over time indicate that the rebound might almost be concluded in some countries, e.g. the Netherlands, while it will still take a long time before central and eastern European countries have reached this stage. The problem is that births delayed to later ages may remain unrealised because infertility at the higher ages of the reproductive life span tends to rise.

Changes in the economic situation, attitudes and norms towards children and parenthood, the diffusion of contraception, changes on the labour market and in institutional settings supporting fertility and the reconciliation of work and family life have all had an impact on the macro context of fertility. A number of studies report theoretical and empirical correlations between the economic situation and fertility rates. Interestingly, the findings indicate that changes in fertility rates may either go along or against economic cycles. Researchers have been particularly interested in the links between fertility rates and female labour force participation. In line with the theories, it was found that this correlation turned from negative to positive. However, other studies showed that this change of sign in the correlation disappears when the models include control for specific factors. The decline in fertility rates was extensively studied in the context of contemporary ideational changes, which encompass a decline in the prevalence of social norms related to childbearing and a rise in some individual values related to women's economic autonomy and self-realisation. Ideational and economic changes have caused significant shifts in the family environment around childbearing, namely rising numbers of extra-marital unions, divorces and extra-marital childbearing.

Macro-level comparisons show that both higher fertility and female employment rates are simultaneously found in countries where institutional support for working parents is comparatively comprehensive, although the patterns of support differ from country to country. Thus, schematically speaking, Nordic European countries (and France) provide a relatively high level of balanced and continuous support to working parents. In these countries, high fertility rates go along with relatively high female full-time employment rates. However, the impact of policies was found to be modest or non-existent with respect to the fertility level, while it is more pronounced with respect to the timing of childbearing. In particular cash benefits and financial support have a limited impact on the level of fertility, whereas work-related policies tend to be more effective.

Fertility intentions are a main component of reproductive decision-making. REPRO studies them from the viewpoint of the social psychological theory of planned behaviour (TPB), which has been used to analyse intentions that lead to demographic events. Applying the TPB to childbearing intentions will significantly extend the demographic research on fertility intentions, which has mainly relied on the direct empirical relationship between intentions and subsequent behaviour until now. The TPB comprises three blocks of determinants of intentions: (1) attitudes towards childbearing, (2) subjective norms and influence of important others and (3) perceived control over the behaviour. Each of these blocks includes several components. Applying the theory will therefore expand our knowledge on the importance of a large variety of proximate determinants of fertility intentions, which *per se* are proximate determinants of childbearing.

The TPB sets rigorous standards for the definition and measurement of intentions. First, the behaviour itself requires a clear and precise measurement. Next, the researcher must clearly define the intention's target and the action that needs to be taken to reach the target. In the case of childbearing, intentions have to be explicitly specified for the order of the intended birth and for the union status of the person. Moreover, the certainty of intentions also has to be explicitly measured. To be certain, intentions

have to refer to a short time interval in order to diminish the impact of external factors that might cause a revision. For this reason, REPRO mainly focuses on explaining short- to mid-term intentions. The REPRO project will make use of an operationalisation of the TPB included in the Generations and Gender Surveys, which became available recently.

Qualitative research on reproductive decision-making in low fertility contexts can be divided into two major streams: (1) studies which refer to *elements of the decision process* (attitudes, norms, values and conditions related to becoming parents, family size and childbearing timing) and (2) studies which focus on the *decisional process* itself (phases, rank in the priority of decisions, deferral and activation). The value of qualitative analysis is its ability to reveal the variability and complexity of decision-making, actions and behaviour. Recently, a large number of qualitative studies on attitudes, values, norms and social influences as well as on the way the latter are exercised in conjunction with individually perceived constraints and priorities related to childbearing decision-making were carried out in different parts of Europe. However, systematic comparative qualitative analyses of such data across contexts and generations are as rare as they are pivotal for interpreting the correlation between fertility intentions and fertility behaviour across population subgroups.

The realisation or non-realisation of childbearing intentions is a key issue in the REPRO project. Contemporary research reports controversial facts about the reliability of fertility intentions as a predictor of fertility behaviour. While some authors note a good relationship between intentions and subsequent births, others find this relationship poor and insufficient for fertility forecasts. Most of the research was, however, based on macro-level data and only a few studies analyse the realisation of individual intentions.

So far, we have discussed macro-level correlations between fertility, on the one hand, and economic, institutional, societal and cultural factors, on the other hand. We also addressed micro-level studies of fertility intentions and behaviour. The third and definitely smallest set of empirical studies available so far pools micro-level data from a variety of macro contexts,

analyses these jointly and tries to account for variation across countries by including macro-level characteristics. In these *macro-micro studies*, information from both analytical levels is combined in one statistical model. The macro contexts could be countries (to study differences across countries) or years (to study change within countries). Only very few studies have used this macro-micro strategy to examine the influence of macro factors on fertility behaviour or fertility desires. Moreover, most of these studies are so recent that they have not (yet) been published in peer-reviewed journals but only circulated as working papers. At least two reasons account for the lack of this type of studies. First, we need statistical models that allow us to account for the fact that individual-level data are clustered within a hierarchical structure. Multi-level models that can handle this kind of data have only recently become more common in the social sciences. Second, we need datasets that (a) are highly comparable across countries or across periods if we study changes in fertility decision-making across time and (b) include a sufficiently large number of countries to make multi-level modelling feasible. Only recently have such datasets as the Fertility and Family Surveys, the European Community Household Panel or the European Social Survey become available.

The REPRO project shares some aims with several other research projects funded by the European Commission. Opportunities for syncretism exist and will be used extensively.

1 INTRODUCTION: THE ADVANTAGE OF STUDYING REPRODUCTIVE DECISION-MAKING IN A MACRO-MICRO PERSPECTIVE

1.1 The fertility gap and its policy relevance

Contemporary low levels of fertility give rise to the question whether people's behaviour adequately reflects their preferences for the number of children they would like to have. Specifically, some people might want to have more children than they actually do but they are unable to implement their wish for various reasons. When comparing the total fertility rate and the desired number of children, Chesnais (2000) called the difference between observed and desired fertility rates the 'fertility gap'. Coleman (1996) discussed the matter in a European perspective. The interest in the topic increased considerably after the findings of Goldstein et al. (2003) were published. They showed that although the ideal number of children declined in Europe during the past decades it is still considerably higher than actual fertility. The authors conclude that the gap is at least partly due to a 'cultural lag' insofar as the ideal number of children is a measure of social norms and changes in the latter take longer than behavioural changes. Testa and Grilli (2006) found that the family-size ideals of each generation are influenced by the fertility regime in which it grew up, with its own actual fertility remaining below this ideal, thus further lowering the ideal family size of the next generation. Bongaarts (2001, 2002) describes the gap between actual fertility and desired family size in developed countries from a different perspective. Other international research was conducted by van Peer (2002) who analysed the FFS (Fertility and Family Surveys) data and Testa (2006) who used *Eurobarometer* data.

The topic has also been addressed at the country level. Hagewien and Morgan (2005) analyse and compare trends in the ideal and expected number of children and actual fertility in the USA. Adsera (2006) notes a widening of the fertility gap in Spain during the past two decades. A population can be heterogeneous with respect to the magnitude and sign of the fertility gap:

Quesnel-Vallée and Morgan (2003) report that individuals in the USA with low fertility desires are more likely to meet or even exceed their personal desires as compared to individuals who wish to have a higher number of children. Liefbroer (in press) came to a similar conclusion for the Netherlands. Adsera (2006) compares fertility ideals and actual fertility in Spain.

These and other authors unanimously agree that fertility would rise considerably, up to levels around replacement, if the desired family size, be it measured by the ideal or expected number of children, were actually realised. Hence the gap reflects the existence of unrealised fertility. Chesnais (2000) pointed out that the latter can be seen as a “latent demand for family policies” (p. 133). Goldstein et al. (2003) also underlined the policy relevance of the fertility gap and other researchers supported this view.

The ‘latent’ demand for policies that aim at raising the number of births quickly turned into an overt one as witnessed by documents issued by European governmental bodies. The European Commission promptly acknowledged this relevance in its Green Paper (EC 2005) which states (p. 5):

Europeans have a fertility rate which is insufficient to replace the population. Surveys have revealed the gap which exists between the number of children Europeans would like (2.3) and the number that they actually have (1.5). This means that, if appropriate mechanisms existed to allow couples to have the number of children they want, the fertility rate could rise overall, even though the desired family size varies considerably from one Member State to another.

The low fertility rate is the result of obstacles to private choices: late access to employment, job instability, expensive housing and lack of incentives (family benefits, parental leave, child care, equal pay).

The topic was also emphasised by Commissioner Vladimír Špidla in his opening speech at the First Forum on the Demographic Future of Europe, held in October 2006:

To what extent is this low birth rate the result of choices by free individuals that should simply be respected, without attempting to influence it through government policy? ... Surveys show that most European couples aged 40 and over state that they were prevented from having as many children as they would have liked, in particular because of social and economic considerations that are worth examining.

On 21 February 2008, the European Parliament adopted a resolution on the demographic future of Europe. It corroborates the stand of the Commission revealed in the Green Paper as well as in the subsequent White Paper (EC 2006):

[The European Parliament] ... 4. Stresses that the average birth rate in the European Union, which at 1.5 is abnormally low, is not a reflection of women's choice or of European citizens' actual aspirations for creating a family, and may therefore also be linked to the difficulty of reconciling work with family life (lack of child care infrastructures, social and economic support for families, and jobs for women), the anxiety-inducing social environment (unstable work situation, expensive housing) and a fear of the future (late access to employment for young people and job insecurity)...

[The European Parliament] ... 14. Recognises that maternity choices are among the most private decisions men and women take, and must be respected; recognises that, since Member States' birth rates range from 1.25 to 2.0, it is possible to influence birth rate curves favourably through coordinated public policies, by creating a family- and child-friendly material and emotional environment; recognises that, along the lines advocated by the European Economic and Social Committee in its proposed European pact for the family, those measures should be applied over the long term and should provide the necessary framework of stability and protection for parenthood decisions.

The above citations reveal the most recent interest of policy-makers in the fertility gap, although the topic has been on their agenda for quite some time (see, for example, EC 1990).

The fertility gap points out an overt demand for family-related policies that support parents to have the number of children they want. It opens a window of opportunities for governments of European Union Member States to elaborate relevant policies. The objectives of these policies are very clear: they should target people who experience obstacles to having a/another child and reckon as major obstacles those connected to work and life balance, gender equality and young adults' uncertainty regarding their work career and housing.

1.2 Gaps in the gap

It can hardly be contested that the fertility gap indicates the existence of a window of opportunities for policy action. However, this line of reasoning raises various issues that require profound and careful research. In this section, we address some of them, which we find of particular importance for the REPRO project. At the heart of the problem are the interpretation and measurement of the fertility gap that encouraged recent policy initiatives.

The fertility gap is the difference between two macro-level indicators. One indicator informs about actual fertility (usually the total fertility rate, TFR) and the other one about the desired level of fertility (or ideal family size, expected or intended number of children). Both indicators are aggregates of micro-level data: the TFR is an aggregate of actual births and the desired fertility is determined by relevant survey instruments, i.e. both are macro-level indicators. Policies act at the micro level: individuals make use of policy instruments. Is it not an ecological error to assume that the macro-level fertility gap infers the need of micro-level action? Inversely, could it be an atomic error to assume that policies that support individuals in having births will narrow the gap? The implications of the macro and micro levels of actual and desired fertility need to be elaborated in more detail by scientific studies that are currently lacking.

The desired number of children is usually determined by asking about the ideal family size (ideal number of children) or the intended family size. However, these measures can be contested. Gauthier (2007) states that they can be volatile and that the ideal number of children may refer to social norms rather than to personal preferences. She points out that Goldstein et al. (2003) used a personal ideal number of children, which is expected to be less influenced by societal norms. However, it remains unclear what a personalised ideal could mean and what ideal conditions of life people imagine when constructing this ideal. It might be based on an unrealistically high income, luxurious housing or abundant leisure time. Therefore the gap, or some unknown part of it, may be due to unrealistic or imaginary assumptions.

A fertility gap based on the intended or expected number of children throughout a person's lifetime also poses problems. Most of the interviewees will only know whether or not they actually had the intended number of children decades after their life-time intentions were measured. The information about obstacles to childbearing only becomes available when it is too late for policy intervention.

Thus indicators on desired fertility can be too general or even imprecise. To give an extreme example (following Demeny 2007): people wish to visit Bali or the Galapagos islands but various obstacles prevent them from fulfilling these desires. Why should desired fertility be more realistic? We need indicators of desired fertility that reflect realistic expectations about having a child. These indicators should provide correct information about the obstacles to childbearing and identify those that can be tackled by relevant policies. The next section shows that fertility intentions are a relevant indicator of desired fertility and a basic component of reproductive decision-making.

1.3 Reproductive decision-making in a macro-micro perspective

The basic premise of the REPRO project is that our understanding of such micro phenomena as the existence of a fertility gap and the unmet need for children and such macro phenomena as low birth rates can be significantly improved by focusing on the reproductive decision-making processes of individuals and couples. A sound knowledge of these processes constitutes a solid basis on which we can reflect about relevant public policies. REPRO has been designed to generate this knowledge. To do so, it starts by conceptualising fertility as a macro-micro problem as outlined in Figure 1, which depicts the theoretical kernel of the REPRO project.

Figure 1 shows that fertility rates depend on the macro-level conditions prevailing in a society, which, however, do not have a direct effect (assuming a direct link would constitute an ecological fallacy). Rather, macro-level conditions impinge on the decision-making processes of individuals and couples with regard to fertility. Fertility behaviour itself can be seen as the outcome of this decision-making process. Finally, fertility rates in a society are the macro-level result of the aggregation of the myriad of fertility decisions made by individuals and couples.

Figure 1 A macro-micro model of fertility and its determinants (inspired by Coleman 1990)

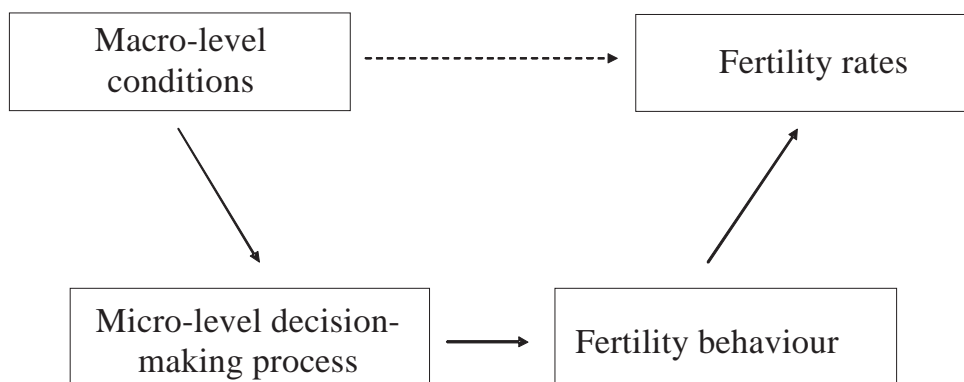


Figure 1 indicates that fertility rates are the aggregate-level result of individuals' and couples' fertility behaviour. This behaviour, in turn, is the outcome of individuals' or couples' decision-making processes. In our view, a better understanding of these decision-making processes is crucial for deepening our knowledge about fertility behaviour. Understanding which considerations play a role in the decision-making process and how macro-level conditions influence these considerations will facilitate a better assessment of how policy initiatives could be effective in strengthening individuals' and couples' freedom of fertility choices in a national and European context.

Figure 1 outlines three levels of research that are of basic interest for the REPRO project:

- (1) Macro-macro: this level includes research findings that relate macro-level economic, social, cultural and institutional conditions on the one hand, and fertility rates on the other. The dotted line indicates that this relation is not necessarily causal. As outlined below, correlations have proved to be important for a better understanding of recent trends in fertility rates.
- (2) Micro-micro: this level includes studies that refer to the decision-making process and its outcome.
- (3) Macro-micro: this level includes studies that analytically combine both the upper and the lower levels in Figure 1.

The paper is structured along these three main paths of research. Section 2 discusses the macro determinants of fertility trends (the macro-macro perspective depicted on the upper part of Figure 1). Section 3 focuses on reproductive decision-making (the lower left box in Figure 1); Section 4 relates to qualitative analyses of reproductive decision-making. Section 5 discusses the micro-micro approach (lower level of Figure 1) and Section 6 is dedicated to macro-micro relations. In addition to this methodological structure, Section 7 contains a short discussion on the state of the art reflected in projects funded by the European Commission.

Readers are adverted that demographers apply various theories and approaches for understanding fertility, e.g. economic theories, the theory of the value of children, the impact of ideational changes (second demographic transition), the impact of culture and others. In this state-of-the-art review, the emphasis is on the methodological issues depicted in Figure 1 rather than on theories. The REPRO project is expected to contribute to theoretical developments in the framework of this innovative methodological approach.

2 THE MACRO DETERMINANTS OF FERTILITY TRENDS

Persistently low fertility rates in EU Member States are a growing concern when analysing fertility trends at the macro level and the decision-making process at the individual level (Kohler et al. 2002). The TFR in Europe has been strongly affected by the changes in the timing (tempo) of childbearing. A progressive delay of entry into parenthood, typical of European fertility trends in the past three decades, negatively affects and creates fluctuations in the usual indicators of period fertility (Frejka and Sobotka 2008). Thus, the very low period fertility rates observed around the 2000s resulted from the fact that the low fertility of older women overlapped with the low fertility of younger women. New indicators of fertility have been proposed in an attempt to distinguish between two components of period fertility, namely tempo and quantum (Bongaarts and Feeney 1998 and subsequent works). Quantum indicates the ‘underlying’ level of fertility, while tempo measures the effects of the changes in the timing of childbearing. The research on fertility quantum suggests that the extremely low levels of the period TFR (1.3 or below) are closely connected to fertility postponement and are therefore likely to be a temporary phenomenon (Sobotka 2004).

Researchers also agree that low fertility, i.e. one below-replacement, will persist in most countries during the next decades (Lesthaeghe and Willems 1999). However, some of the reputed low-fertility countries have recently experienced a ‘rebound’ of fertility rates which questions the

dynamics supporting such a reversal of fertility trends. Macro-level explanations of these changes have been put forward in the pertinent literature. Some authors argue that such a rebound is mainly due to the increase of fertility rates at higher ages and thus illustrates the fact that generations who have postponed family formation are now ‘catching up’ their delay of births. However, the exact impact of the changes in the timing of births on fertility trends continues to be a debated issue.

2.1 Fertility decline or change in the timing of births?

The up-turn of the total period fertility rates observed in many countries questions the extent to which rates reflect trends in quantum or changes in the timing of births.¹ A look at age-specific fertility rates suggests that the tempo effect may be important in determining the fertility level. However, fertility rates below the age of 30 have decreased continuously over the past decades and continue to decrease in most EU Member States, while fertility above the age of 30 increases, indicating that many women delay motherhood. Since the early 2000s, the increase in fertility rates at higher ages has accelerated in some countries such as France (Prioux 2007), while the decline at young ages has slowed down in many Member States and even stopped in several countries. The combination of these two trends explains why the decline in the TFR has slowed down in some countries or even turned into an increase, suggesting that the stabilisation or rebound of fertility rates may result from a ‘catching-up’ effect brought about by cohorts who postponed childbirths rather than strictly forgo motherhood. Fertility at

¹ Cohort fertility trends are more stable indicators of long-term trends. However, an obvious problem in using cohort rates is that they are not available for (younger) cohorts that have not yet completed their fertile life span, which prevents a timely observation of fertility trends. Besides, measuring completed fertility for a birth cohort may also be problematic, notably in periods during which societies undergo substantial changes, which might distort the measure (for an overview of the problem, see Kohler et al. 2002).

ages 30 and over is thus one important determinant of cross-country differences in fertility rebound. For example, in the Nordic countries and in France, fertility at ages 30 and over is also relatively high (about 0.9 children per woman) while it is slightly lower (between 0.6 and 0.8), albeit rising considerably, in most southern European countries. By contrast, fertility at age 30 and over equals only 0.5 in Germany, whereas the fertility at younger ages is just as low as in the Netherlands. Therefore, the recovery of fertility at higher ages is far less visible in such countries as Germany and Austria than in other continental European countries (van Nimwegen and Beets 2008). De Beer (2006) pointed to the fact that in some countries—though not central and eastern Europe—the rise in fertility at older ages has slowed down, suggesting that the ‘recovery phase’ is almost concluded. Nevertheless, fertility at 30 and over keeps increasing in most countries, which suggests that the TFR may increase in the next years.

The impact of delaying childbirths on completed fertility is a debated issue. Given the natural biological constraint of a limited reproductive period, one can indeed expect that delaying motherhood would have a negative impact on the completed family size. It is, however, difficult to substantiate this point at the macro level, since no obvious and systematic relation between the delay of births and the changes in completed family size can be observed in Europe (Toulemon 2004). Fertility behaviour is biologically constrained but the way the constraints work and affect family size is relatively diverse. Thus, the postponement of first births for the generations of women born between 1950 and 1960 coincides with a decrease in family size in few countries only. By contrast, a decrease in the age at first birth went along with a decrease in family size in Bulgaria, the Czech Republic, Portugal, Slovakia and Slovenia. Even more unexpectedly, an increase in the average age at first birth seems to be correlated with an increase in family size in Finland, Sweden, Norway, Denmark and France. Thus, for explaining cohort changes in fertility behaviour, changes in the social construction of parenthood seem to be more important factors than natural constraints.

The above argument certainly shows a limited impact of family formation postponement on long-term completed fertility. However, this postponement has also a significant short-termed impact on period rates. Van Nimwegen and Beets (2008) estimate that a stop in childbirth postponement would raise the cohort level of fertility by 10 percent, equivalent to an increase from 1.5 to 1.7 children per woman, on average, in all Member States. The expected impact would be lower in Spain, Italy and Germany and higher in most new EU Member States where postponement started more recently than in the old Member States. This can be seen as a window of opportunities for policies introduced to influence the timing of fertility in low fertility countries (Lutz and Skirbekk 2005; van Nimwegen and Beets 2008).

2.2 The decline in fertility rates: a response to the economic situation...

The macro determinants of the changes in the tempo and quantum of fertility have also been discussed in several studies. Changes in the economic situation, attitudes and norms towards children and parenthood, the diffusion of contraception, changes on the labour market and in institutional settings supporting fertility and the reconciliation of work and family life have all had an impact on the macro context of fertility. The correlations between these changes and the macro trends in fertility were analysed in a number of studies.

The emergence of countercyclical variations in fertility during the 1970s was the first issue to be analysed. In particular Butz and Ward (1979) focused on explaining the switch from 'procyclical' trends during the 1950s to 'countercyclical' fertility trends emerging in the US from the late 1960s onwards. They argued that the post-war baby boom of the 1950s can be explained as a response to rising male income, whereas the baby bust of the 1960s is primarily due to increases in female wages and income. Furthermore, as more women enter the work force, couples tend to time births to coincide with periods of high female unemployment and periods

when the women's real wages are low, that is, during economic slumps rather than booms. Fertility rates are thus expected to move countercyclically.

2.3 ...shaped by changes in the norms towards the family

This hypothesis was challenged by several researchers. Some failed to replicate the empirical evidence of countercyclical fertility trends (see for example McDonald 1983; Macunovich 1995). Others claimed that such an explanation was a shortcut with regard to the substantial changes in attitudes and norms towards union formation, marriage, gender relations and the role of women and parenthood that accompanied changes in fertility. Lesthaeghe and van de Kaa (1986) particularly emphasised the rising number of consensual unions, divorce rates, mean ages at marriage and first birth, and the increased control over births as key trends of the 'second demographic transition' which went along with the decrease in total fertility rates in western countries. Central and eastern European countries also witnessed such changes, as stated by Frejka (2008a) who argues that both the economic transition and the diffusion of western norms and attitudes towards children have been clear determinants of the decline in childbearing in these countries.

However, the shift in family behaviour is not systematically associated with low fertility. Although the higher prevalence of more fragile non-marital unions is expected to lead to lower fertility, such a correlation cannot be identified when all countries are compared (Sobotka and Toulemon 2008). Moreover, the aggregate-level association seems to shift in the opposite direction: countries with a high prevalence of divorce had higher total fertility rates in both 2004 and 1990. In a context of very low fertility, conjugal instability may be seen as a potential fuel to fertility, especially when the partners want to have at least one child in their new union irrespective of their previous fertility (Prskawetz et al. 2007). Interestingly, if more and more couples limit their childbearing aspirations to

one child only—as is the case in southern and eastern Europe—rising union instability may be seen as a way to raise fertility (Billari 2005).

2.4 The diffusion of modern contraceptive methods: a limited explanation for low fertility

The diffusion of contraceptive methods has also been pointed out as a possible explanation for fertility decline. Over the past decades, legal restrictions on contraceptive use were removed in most Member States and ‘modern’ contraceptive methods have been made available in a growing number of countries, though selectively. According to a United Nations report (2008) modern contraceptive methods (primarily hormonal methods) have become the main instrument of birth regulation in northern and western Europe in the early 21st century and are also gaining ground in southern as well as in central and eastern Europe. Most women of reproductive age (15-49), be they married or partnered, use modern contraceptives, but in most new EU Member States modern contraception has not yet become the rule. The use of traditional methods remains relatively high not only in Bulgaria, Estonia, Lithuania, Poland, Romania, Slovakia and Slovenia but also in Italy and Spain, suggesting that the so-called ‘contraceptive revolution’ (from restricted to fully accepted contraceptive behaviour and from traditional to modern methods) has more or less been implemented in western countries, slightly less so in southern EU countries and clearly less in the new EU Member States. These findings indicate that there is no direct link between contraceptive use and fertility decline. Legal abortion, which was highly prevalent in central and eastern Europe, has declined since 1990. Nonetheless, abortion is still used in the former Soviet countries. But although modern contraceptives and modern induced abortion technology have enhanced women’s health and contributed to changes in partnership relations and the values associated with sexuality, reproduction and childbearing, they have not been a major cause of low fertility (Frejka

2008b). In some countries, assisted reproductive technology may have a slightly positive impact on fertility.

2.5 Changes in attitudes towards children

Changes in the willingness to have children and in the ‘ideal size’ of the family are other explanations for the development of fertility rates. Frejka (2008c) argues, for example, that the two-child family, which became the norm in Europe, now seems to erode, especially in central, eastern and southern Europe where the one-child family tends to prevail. Goldstein et al. (2003) also suggest that younger generations in Germany and Austria, and to some extent also those in Italy, Spain and Greece, no longer adhere to the two-child (one boy and one girl) family ideal upheld in western European countries for a long time. They assume that sub-replacement fertility ideals emerged as a natural consequence of a history of low fertility, since young cohorts witnessed below-replacement fertility throughout their entire lives. Childlessness has also become more frequent and accepted, with many variations from country to country.² Childlessness is also more frequent among highly educated women, indicating that there is a tension between working and mothering which has an impact on fertility.

2.6 The link between fertility and female labour force participation

The relationship between fertility and women’s participation in the labour market is complex and deserves specific attention. Recent research, for example in Ahn and Mira (2002), Rindfuss et al. (2003), d’Addio and Mira d’Ercole (2005) found that the cross-country correlation between the TFR and female labour -force participation (FLP) in OECD countries—

² The proportion of childless women is low in France (10%) but high in Germany (25%). This raises the question on the impact of policies supporting parenthood, and especially child care, on reproductive decisions and labour-force participation. Comparing Austria and Sweden, Neyer and Hoem (2007) point to differences in the high incidence of childlessness among highly educated women in the two countries.

which had been negative until the mid 1980s—had turned positive. The explanation of this change remains a controversial issue. Ahn and Mira (2002) and d’Addio and Mira d’Ercole (2005) argue that it is due to the income effects caused by higher wages paid to women, high unemployment in Mediterranean countries, the increase in part-time work and the wider availability of child care. Somewhat differently, Rindfuss et al. (2003) and Brewster and Rindfuss (2000) point to such changes in the institutional context as changing government policies, changing attitudes towards working mothers and the wider availability of child care that had contributed to minimising incompatibilities between childrearing and female employment. All these studies argue, however, that female labour-force participation has a positive impact on fertility.

By contrast, studies by Engelhardt et al. (2004) and Kögel (2004) somewhat moderate this optimistic viewpoint. These authors argue that looking at inter-country correlations may be misleading as the strength of the link between fertility and female employment rate may vary between countries. Such patterns at the macro level do not necessarily reflect causality in terms of individual behaviour. Engelhardt et al. (2004) found in macro-level time-series data from six representative OECD countries that the value of the time-series association between the TFR and FLP did not change from negative to positive. Kögel (2004) replicated this finding with a larger sample of OECD countries. He argued that the reversal in the sign of the cross-country correlation is most likely due to a combination of two elements, namely the presence of country-specific factors and the country heterogeneity in the strength of the negative time-series association between fertility and female employment. Controlling for unmeasured country-specific factors, he found no change in the negative relation between fertility and female employment rates, a finding that is in line with the micro-economic prediction. He also found heterogeneity in the time-series association, which is especially negative in Mediterranean countries. However, he noted for countries that are neither Mediterranean nor Scandinavian that the strength and significance level of the time-series

association were lower after 1985 than before this date. This finding is consistent with the role of policies that reduce the incompatibility between childrearing and female employment. However, controlling for country effect prevents misinterpretation that would leave us to conclude that the increase in female labour force participation has had a positive impact on the TFR from the mid 1980s onwards. Instead, female employment has increased while the TFR has decreased. However, the strength of the negative relation varies from one country to another. It has decreased in several countries and differences in the extent of changes can be observed across countries. Policies, as well as work-related institutions may contribute to explaining the extent of these differences.

2.7 The role of institutions and policies in shaping fertility

Exactly how policies contribute to explaining cross-country performances in fertility remains an open question. One basic reason is rooted in the methodological difficulties faced by those who seek to investigate policy impacts on fertility behaviour (Gauthier 2007). Professionally conducted empirical investigations were able to master such problems and clearly demonstrated policy effects in specific circumstances. Micro-based evidence on the impact of policies and institutions is, however, not sufficient to understand the macro-level differences observed in the relationships between policies and fertility trends.

2.8 Higher female employment and fertility rates in countries giving more support to families

Many more or less recent studies point out the variety of policies supporting families and working parents across OECD and European countries (Gornick et al. 1997; Gauthier 2002; de Hénau et al. 2007; OECD 2002-2007; Thévenon 2008a). These analyses basically underline the differences in the nature and degree of support provided, for example, in the form of cash benefits, child care services, entitlements to child-related leaves

and flexible working hours. According to these studies, part-time work, flexible working hours and other support provided by employers also contribute in varying degrees to the balance between work and family life (Gornick and Meyers 2003; OECD 2002-2007; Thévenon 2008b). A macro-level comparison shows that both higher fertility and female employment rates are simultaneously found in countries where institutional support of working parents is fairly comprehensive (OECD 2002-2007). However, patterns of support differ from country to country. Working parents of young children in the Nordic countries (and France) typically receive relatively strong, balanced and continuous support. These countries not only have high fertility rates but also relatively high female full-time employment rates (Thévenon 2008a). Moreover, employers in these countries frequently grant parents a rather high degree of flexibility regarding their working hours (Thévenon 2008b). By contrast, the balance between work and family life is more frequently achieved through part-time work of women in Anglo-Saxon countries where fertility rates are also high despite the fact that state support clearly targets poor families. Other groups of countries offer less extensive support, but both female employment and fertility rates are also lower. Thus, the macro-level observation exhibits a rather clear positive correlation between policy support and both fertility and female employment rates without studying causality, although this kind of research is available.

2.9 A visible impact on timing but an uncertain impact on quantum

When analysing to which extent policies raise fertility, an important issue is to assess whether they have an impact on the quantum or only on the timing of births. Quantum relates to the long-term effect of policies, while timing only has a temporary effect. The literature contains rather lucid examples of the impact policies have on the timing of births. For instance, Ermisch (1988) found that the rise of child allowances in Britain increased the likelihood of higher parity births but also encouraged young motherhood. A tempo effect of policies was also observed in Sweden (Hoem 2005;

Andersson et al. 2006). Among other things, these researchers suggest that the introduction of a 'speed premium' in the Swedish parental leave system accelerated childbearing decisions by reducing the spacing between the first and second birth. Andersson et al. (2006) found that responses do not markedly differ across social groups. Swedish parents in all educational levels adjusted their childbearing behaviour to reduce birth intervals in response to the premium measure. Interestingly, not only the extent of the behavioural change but also the speed of adapting to the new policy was very similar irrespective of the educational level.

The consequences of these policies on completed family size are more uncertain. Lutz and Skirbekk (2005) argue that policies may increase the period fertility rate while also having an indirect effect on cohort fertility. However, this hypothesis has not yet been empirically tested. According to some analyses studying the impact of policies on fertility, a general conclusion is that policies have a more obvious impact on the timing of births than on completed family size (Sleebos 2003; Gauthier 2007).

2.10 Limited impact of cash benefit and financial support

Compared to other interventions, cash benefits have the advantage that they can easily be quantified and that their impact on behaviour can be captured. Evidence on fertility suggests, however, that the impact of financial benefit is weak (Gauthier 2007). A good example is the analysis by Blanchet and Ekert-Jaffé (1994) who investigated the effect of family benefits on the TFR of 11 industrialised countries for the period 1970–1983. They constructed a family policy index that takes into account the overall amount of financial support provided as cash benefits, tax relief and parental leave compensation and noted a rather weak impact of such a package. According to them, the French family policy could lead to an extra 0.17 children per women as compared to policies in some other developed countries like the United Kingdom. Though such an impact is not insignificant, it shows that cross-national differences in fertility level are

only very partially explained by differences in cash support to families. Moreover, no major fertility upswing may be expected from such support.

Gauthier and Hatzius (1997) modelled the dynamic relation between fertility rates and policies for 22 OECD countries for the period 1970–1990. They concluded that neither the duration of maternity leave nor the maternity benefits were significantly related to fertility. By contrast, direct cash benefits were found to have a positive and significant though small effect. The authors also considered the differences in the impact of policies with respect to birth parity and found a stronger effect of the benefits for the first child. One of their conclusions was that targeting benefits at the third child (a common practice, for example in France), was unlikely to increase fertility. On the whole, all these policies seem to have a weak effect only. The authors estimated that a 25 percent increase in family allowances would increase fertility by about 0.07 children per women on average. However, they also observed differences in the responsiveness across groups of countries. Basically, a greater impact was observed in Scandinavian countries and interpreted as the effect of the co-variation of in-kind support offered in these countries. Thus the authors (indirectly) underline the importance of institutional complementarities although they were not able to directly quantify it.

2.11 Impact of work-related policies

Other studies also highlighted the importance of work-related institutions and work organisation with respect to fertility. Comparing changes in cross-sectional data, Castles (2003) argues that the provision of child care facilities for children aged 0-3, which is crucial to early labour force re-entry, may have been the main factor contributing to the reversal of the relationship between fertility rates and female labour market participation in OECD countries. Micro-evaluation evidence is, however, more mitigated. While di Prete et al. (2003) and del Boca et al. (2007) expect that reduced child-care costs and increased child-care availability will have a

positive impact on fertility, no statistically significant impact of child care characteristics was reported, for example, by Ronsen (2004) for Norway and Finland, Hank and Kreyenfed (2002) for Germany and Andersson et al. (2006) for Sweden.

D'Addio and Mira d'Ercole (2005) analysed cross-country differences in total fertility rates in 1999 for 19 OECD countries. Their research was based on models that admit dynamic effects, potential heterogeneity between countries and endogeneity of some of the explanatory variables. Their findings prove that transfers to families with children as well as the provision of services to working parents to help them cope with their care responsibilities have a positive impact on childbearing. The impact is, however, relatively weak: a one-week increase in the total length of parental leave would, on average, increase the total fertility rate by 0.3%³ (when the impact is estimated with pool mean group estimators including time effect). A 1-unit increase in the percentage of wages replaced during maternity leave or in the net income transfers to families produces an increase in TFR of 0.9% and 1% respectively.⁴ The study also suggested that an increase in female labour market participation, in the share of women in part-time work and in the ratio of female to male hourly earnings all have a positive impact on fertility.

³ The interpretation of this result is not straightforward, however, since leave provisions are often longer in countries with fewer out-of-home caring facilities. These facilities are not included in the model because of lack of time series data.

⁴ Net transfers to families with children are computed as the difference between the average effective tax rates of singles without children earning the average wage and a married couple with two children aged 6 and 4, where one spouse earns the average wage. The estimated impact means here that an increase in transfers to families by 25% translated on average into a long-run increase of 0.05 children per women. This increase is half-way between the increases of 0.04 children per women (following a 25% increase in the family benefit index) in Ekert-Jaffé (1986) and of 0.07 children per women reported in Gauthier and Hatzius (1997).

Del Boca et al. (2007) also modelled the role of child care arrangements, parental leave, family allowances and labour market flexibility, but adopted an individual-based approach by and on women's joint decision towards fertility and labour supply. Their results are based on the European Community Household Panel (ECHP) and show that a non-negligible share of the differences in female labour market participation and fertility rates in six European countries can be attributed to the characteristics of these two factors, although their impact varies with the women's educational level. The availability of child care and optional leave has a stronger impact on both fertility and labour force participation decisions in lower educated families, while parameter significance on fertility is weak. By contrast, labour market policies such as part-time opportunities have a stronger impact on the results of women with higher education. In all cases, the impact on labour supply is more significant and larger than on fertility.

All these micro-based studies suggest that policies influence the fertility behaviour, even though policy determinants may contribute to explaining only a limited part of the heterogeneity between individuals. The extent to which such micro-based evidence can serve to account for the differences in fertility rates at the macro level is, however, far from obvious. One reason is the need to better understand (still at the micro level) how institutions interact to influence behaviour. We may, indeed, assume that the complementarity of institutions and continued support throughout the children's childhood are important determinants for the effective impact of policies. We may, for example, expect parental leave to have a positive impact on fertility only if it is designed consistently with other measures to offer continuous support, for example if child care services are available at the end of the parental leave period. The complementarity and continuity of measures may be seen as prerequisites for creating the trust required to make them effective (Thévenon, forthcoming). One challenge for future studies is to better assess to which extent the influence of policy measures depends on such attributes.

A second obstacle is the changing nature of processes that have to be clarified when turning to the macro level. ‘Institutional settings’ and other macro-level determinants shape different sets of constraints and opportunities, which may interact quite differently with individual characteristics in different countries. Hence it may be best to see national fertility as a systemic outcome that depends more on the degree of family-friendliness of the entire institutional setting and less on the design of monetary benefits or other types of support (Hoem 2008; Thévenon 2008a). Also when viewed from this perspective, a balance between the different types of support in cash, services or time seems to lead to both higher fertility and higher female employment rates. However, more pertinent conclusions may only be drawn once micro-macro approaches have closed the gap between macro-based evidence and individual behaviour.

2.12 Comparative databases

Comparative international research relies on the availability of internationally comparable data that describe the issues of interest as fully as possible. The above analyses of policies indicate the need for a policy database, as explicitly noted by Gauthier (2007: 342):

The absence of a comprehensive database on state support for families has prevented researchers from identifying which type of public policy has had the largest impact on fertility, and what would be the price tag of such a policy. Similarly, little is known about the impact of employer-provided policies on fertility (and on the inequality that they introduce).

Where fertility rates are considered, the situation is not much better. Macro-level fertility analyses require comparable data for each year of mothers’ age by birth order, mean age of mothers at the time of birth by order of birth, to state the least requirements. More detailed steps of analyses are based on additional disaggregation of the data by birth intervals, age of mother at the time of birth and at the beginning of the year, a detailed cohort

perspective, etc. Internationally available fertility databases only partially meet all these requirements.

3 REPRODUCTIVE DECISION-MAKING

In the introduction, we stated that some frequently used indicators of fertility desires such as the ideal or intended (or expected) number of children have to be specified in order to become trustworthy for policy inferences. Since these indicators precede actual behaviour (childbearing), it is natural for demographers to resort to social psychology, where individual behaviour and its precedents are key elements. Recently, it became clear that the theory of planned behaviour (TPB) can be of particular interest for studying reproductive decision-making.

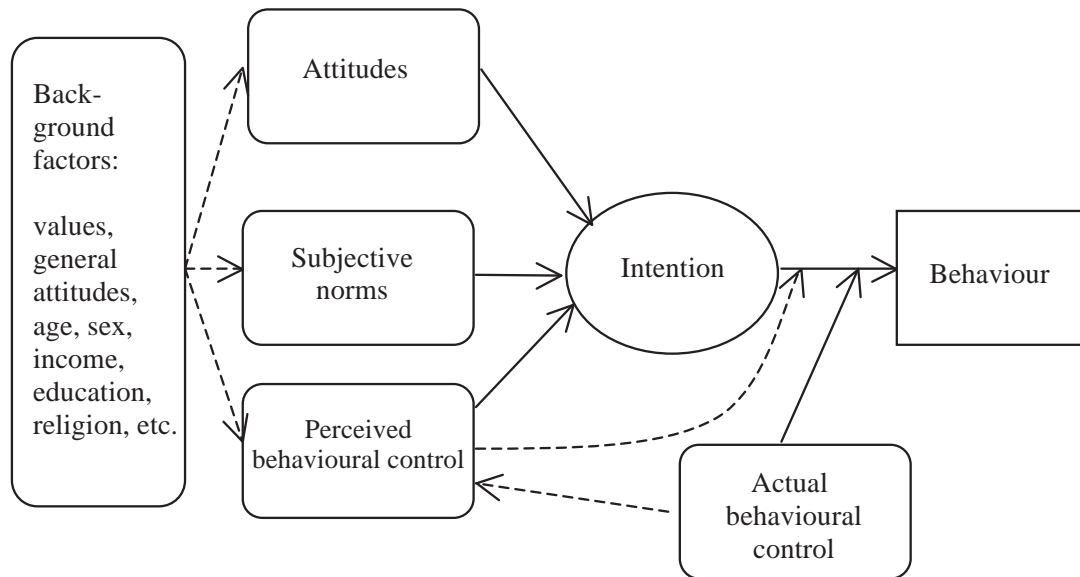
3.1 Why the TPB?

The TPB (Ajzen 1991, 2005) is a social psychological model that enables us to examine decision-making processes within their macro-level context. In Ajzen's framework, human behaviours are modelled as reflecting decisions, which are characterised as 'intentions'. As we can see in Figure 2, intentions are formed through cognitive and emotive processes which lead to three kinds of evaluation, which in turn, are of three kinds, commonly described as

- *attitude* to the behaviour (i.e. persons' internal evaluation that performing the behaviour will have positive or negative outcomes for them)
- *subjective norms* (persons' perception of external social pressures for performing the behaviour, based on their perceptions that significant others would want them to perform the behaviour)
- *perceived behavioural control* or self-efficacy (persons' perception that they are able to perform the behaviour).

Critically for our research, the TPB may also explain how macro-level conditions influence the evaluation system, intention and behaviour. Firstly, the TPB explicates why intentions may not be translated into behaviours. According to Ajzen, intentions are 'latent' behaviours, which a person may perform when the conditions permit the intention to be transformed into behaviour. External conditions may prevent this transformation from occurring, thus a person may intend to perform a behaviour but eventually not do so. Decision-makers' evaluations of their ability to perform a behaviour (their perceived behavioural control) reflect these external conditions when they are known to them.

Figure 2 A model of fertility decision-making (according to Ajzen 1991)



Indeed, the decision-makers' evaluations in all three categories reflect background factors. We believe that it is this aspect of the theory that will allow us to make the macro-micro link. Psychological factors (including personality traits and values), individual differences (including age, gender, cultural background, education, income and religion) and informational factors (including past experience, knowledge and media exposure) have all been shown to influence evaluations of attitudes, subjective norms and perceived behavioural control (Ajzen 2005). These factors include many of the circumstances that demographers have shown to be associated with fertility intentions and behaviour. Other external conditions may well work in the same way.

Several fertility researchers have called for more research that draws on social psychological theory (Barber 2001; Werner et al. 1975), but despite early success there has been surprisingly little research of this kind. Liebroer (in press) underlines the value of drawing on social psychological theory when he proposes that the life-span theory of control (Heckhausen

and Schultz 1995) offers “a promising framework” to study changes in family size intention over time.

3.2 Early research in the social psychological tradition

The TPB has its origins in an earlier social psychological theory, namely the theory of reasoned action (TRA, Fishbein and Ajzen 1975), which has been used successfully in many domains to explain a wide range of human behaviours. The TRA models intentions as being formed through attitudes and subjective norms. It also incorporates control evaluations, which are the particular contribution of the TPB. In the fertility domain, the TRA has most recently been used to explain sexual behaviour among American teenagers (Gillmore et al. 2002).

One early application of the TRA was for studying the formation of fertility intentions. Jaccard and Davidson (1975) found that the TRA was able to explain a significant proportion of the variance in three different fertility intentions: (1) the intention to have a child in the next two years, (2) the intention to have a two-child family and (3) the intention to use birth control pills. As predicted by the theory, the combination of attitudes and norms explained variance in the intentions associated with such external variables as religion, religiosity and age. Another early study of fertility intentions noted that the social psychological approach defined by the TRA was a better predictor of fertility intentions than generic psychological traits (Werner et al. 1975).

The TRA was also successfully utilised in a 1988 study of family planning decisions made by Mexican-Americans (Jorgensen and Adams 1988). This study controlled for income, education, religion and parity, enabling the researchers to identify that some groups were more influenced by normative beliefs than others.

Another stream of fertility research in the social psychological tradition is represented by the work of Miller and his colleagues (Miller 1994; Miller and Pasta 1995; Miller et al. 2004). Their research on fertility

behaviour focuses on a proposed sequence of relationships between traits, desires, intentions and behaviours (TDIB). Importantly, it makes a distinction between desires (such as the number of children one would ideally like to have) and intentions, which they define as “what one actually plans to do given the reality within which one ordinarily operates” (Miller et al. 2004: 194). Though it is an important stream in fertility research, this model has not generally been as successful in explaining fertility intentions as research based on the TRA, perhaps because the model does not explicitly incorporate variable cognitions such as attitudes and subjective norms which reflect ‘the reality’ in which the decision maker operates.

3.3 The TPB in fertility research

In the fertility domain, the TPB has been widely used in studies of contraceptive behaviour, and in particular condom use. The addition of perceived behavioural control has improved researchers’ ability to predict intentions and behaviours as compared to explanations based on the TRA, which does not incorporate these perceptions (Albarracin et al. 2001; Sheeran and Taylor 1999).

The TPB has been demonstrated to be a suitable tool for explaining reproductive decision-making (Billari et al., unpublished manuscript) in an operationalisation developed at the Max Planck Institute for Demographic Research and for explaining intentions to form unions (Billari et al. 2005). This operationalisation, in the way in which it was implemented in the Generations and Gender Survey (GGS) (Vikat et al. 2007), forms the basis of the work which is conducted in the REPRO project.

Billari et al. (unpublished manuscript) applied the TPB to the study of fertility timing intentions in Bulgaria. Consistent with the theory, they found that positive and negative attitudes towards childbearing, subjective norms and perceived behavioural control significantly influence fertility intentions and that their effects differ across parities and gender. Subjective norms are most crucial in the transition to parenthood (in particular for

women), while attitudes towards childbearing and perceived behavioural control are more relevant for the arrival of the second child.

3.4 Focus on intentions

REPRO focuses on the social psychological system that leads to the formation of fertility intentions. A significant preoccupation of fertility research is the link between intentions and fertility. Fertility intentions have played an important role in fertility research since the 1950s (Morgan 1985). Early research showing that fertility intentions are a better predictor of fertility behaviour than other factors, including parity, birth interval, education, employment status and religion and their combinations (Hermalin et al. 1979; Westoff and Ryder 1977) was followed by more recent research that shows that fertility intentions not only mediate the effect of other variables on fertility behaviour but contribute predictive power of their own (Schoen et al. 1999).

Despite this apparently positive history of research on fertility intentions, most demographers now agree that their predictive strength is low. Evidence of low predictive strength is, however, mixed. While demographers' current concern is overestimation of fertility from reported intentions to have children (e.g. Liefbroer 2008), research among people who, for practical or religious reasons, do not have ready access to reliable contraceptives (including people of different religions, people in developing countries and teenage girls) has shown that intentions may also underestimate subsequent reproductive behaviour (e.g. Stevens-Simon et al. 2005; Wilson and Bumpass 1973). Quesnel-Vallée and Morgan (2003) observed that aggregate fertility intentions tended to almost 'balance' out overestimates and underestimates in fertility intentions among the 1957 to 1961 cohorts of US women and men, but differences could be observed at the individual level. The gap between fertility intention and behaviour has pushed researchers to investigate the reasons why people miss their fertility targets.

Until now, attempts to understand the realisation or non-realisation of intentions have relied on conventional theoretical frameworks that are usually applied to study births, i.e. the outcomes. Ajzen's and Fishbein's work on the social psychology of formation of behavioural intentions suggests a different approach (Ajzen 2005; Ajzen and Fishbein 1970, 1980; Fishbein and Ajzen 1975) which acknowledges that intentions are cognitions. We propose that better predictive power can be obtained by using a pertinent social psychological theory and associated techniques to define and measure fertility intentions and the cognitions associated with their formation. The remaining sections of this review are dedicated to fertility decision-making from the perspective of one such social psychological model, the TPB.

3.5 Defining and measuring intention

The key to an accurate prediction of behaviour is a clear and precise definition of the behaviour itself (Ajzen and Fishbein 1980). Ajzen (2005) speaks of the "principle of compatibility": valid and reliable prediction of behaviour has to be based on predictors that are compatible with the behaviour itself. The principle of compatibility leads us to consider four elements of a behaviour (Ajzen and Fishbein 1980): the *target* and *action* that define the behaviour, the *context* in which the behaviour occurs and elements of the *time* in which or over which the behaviour occurs. Once the behaviour of interest is defined in these terms, we also have a definition of the intention to be studied or, put another way, the exact behaviour about which a decision is to be made.

Target and action

A wide range of behavioural intentions has been studied in the fertility decision-making research. While prediction of generic intentions to have a child is moderately common, predicting intentions to perform other behaviours associated with childbearing is perhaps more common, with a

particularly strong stream of research devoted to explaining intentions to use contraceptives and subsequent contraceptive use behaviour (Sheeran and Taylor 1999). Indeed, Ajzen (personal communication) notes that having a child may not be a behaviour in itself but an outcome of one or more behaviours, including not using contraception, participating in an assisted reproduction programme and adopting a child. Thus, while the current research focuses on decisions to have (or not to have) a child, many other decisions may be associated with having a child and it will be fruitful to study this wider set of decisions in future research. The potential for this approach has been demonstrated by the work of Gillmore and colleagues (2002) who used the TRA to predict both intentions and behaviour in the domain of teenage sexual intercourse. Another promising approach is suggested by the work of Miettinen (2005) who, among other things, attempted to define a range of reproductive intentions.

Even in terms of defining the ‘childbearing’ behaviour of interest, a wide range of conceptions has been used. Early social psychological research in this field tended to define childbearing behaviour using multiple indicators. Thus, Jaccard and Davidson (1975) studied the intention to have a child in the next two years and the intention to have a two-child family, as well as the intention to use birth control pills. Jorgensen and Adams (1988) studied intentions to have no more children and to have a child in the next year as well as the intention to have a sterilisation operation and thus to have no more children.

After the first burst of research using the TRA, studies have tended to focus on a single childbearing intention, including a generic intention to have no more children (Westoff 1990). It has also been common to study intentions to have a family of a certain size (Liefbroer, in press) and timing intentions, including intentions to postpone childbearing (Miller and Pasta 1995) and intentions to remain childless (Bulcroft and Teachman 2004; Heaton et al. 1999).

Context

As noted earlier in this review, a number of variables normally studied in fertility research, including income, education, religion and parity, become 'external' variables in social psychological studies because they are external to the psychological decision-making process (Ajzen 2005; Jaccard and Davidson 1975; Jorgensen and Adams 1988). These variables define the context of the research and can be modelled in a number of ways including thorough multi-level modelling and, in some cases, differential measurement of the proximal predictors of intention in the TPB (attitudes, subjective norms and perceived behavioural control).

A particularly important context for the prediction of childbearing intentions is parity, or the number of children that the decision-maker currently has (Morgan 1982; Yamaguchi and Ferguson 1995). Indeed, as Billari, Philipov and their colleagues point out, the intention to have a first child is qualitatively different from the decision to have subsequent children since the decision to have a first child marks a "crucial transition in one's life course", the decision to become a parent (Billari et al., unpublished manuscript; Philipov et al. 2006).

Time

Another key element of compatibility is time (Ajzen and Fishbein 1980). This may be particularly true when the intention concerns childbearing (Miller and Pasta 1995; Schoen et al. 1999). More powerful predictions of fertility intentions have been found when the timing of the behaviour has been specified (Philipov et al. 2006). In measuring fertility intentions, the intention to have a child within two years (Jaccard and Davidson 1975) or within three years (Philipov et al. 2006; Vikat et al. 2007) is commonly measured, although intentions to have a child now or within one year were also measured in earlier studies (Jorgensen and Adams 1988).

Certainty

Better prediction of intention and behaviour has also been observed when the strength or level of certainty of an intention is measured in many domains (Ajzen 2005) including the fertility domain (Juhasz 1980; Liefbroer 2008; Morgan 1982; Philipov unpublished manuscript; Speizer 2006). The strength of fertility intentions as predictors of fertility behaviour is greater when intentions are held with greater certainty (Schoen et al. 1999). Certainty of intention has been shown, in turn, to vary by age and parity (Morgan 1981).

3.6 Attitudes

The principle of compatibility applies to the predictors of intention as well as to the intention itself. The attitudes (and subjective norms and perceptions of control) that will be the best predictors of intention are those most compatible with the behaviour of interest. Failure to measure compatible attitudes and beliefs can account for low predictive power (Ajzen 2005). Even so, early research that compared the influence of sex role attitudes with variables such as education, age and labour force participation showed that the inclusion of attitudes could improve the prediction of fertility intentions (Tickamyer 1979). Fertility intentions among American adults are strongly influenced by parents' perceptions that children create the 'social capital' that arises from the social ties among families and other groups surrounding children (Buehler and Philipov 2005; Philipov et al. 2006; Schoen et al. 1997; Schoen and Tufis 2003).

Attitudes towards behaviours that 'compete' with childbearing have also been shown to predict fertility intentions in some circumstances (Philipov unpublished manuscript). While attitudes towards interacting with children are associated, for married women, with the decision to have a first child, attitudes to participating in other competing behaviours (such as a career) are negatively associated with the transition to parenthood for unmarried women (Barber 2001).

Studies measuring attitudes that are compatible with the fertility behaviour of interest have demonstrated quite strong effects of attitudes on intentions. Positive attitudes to childlessness among people of childbearing age are strongly correlated with intentions to remain childless (Koropecj-Cox and Pendell 2007). Attitudes towards abortion are associated with decisions to have and not to have children (Miller 1994).

The only research that has examined the relationship between compatible attitudes and childbearing intention is that carried out by Billari and colleagues (unpublished manuscript) in studies that informed the REPRO project. This research, conducted using the TPB framework, showed that attitudes to having a child within two years were associated with the intention to have a child within two years in some circumstances, but that a more complete explanation was obtained when attitudes were considered along with subjective norms and perceived control.

3.7 Subjective norms

The role of normative references in forming behavioural intentions is less well understood than the role of attitudes. This has been argued to be the result of a range of factors including the inter-relationship between attitudes and norms (a person's attitudes often reflect those of others) and difficulties associated with measuring subjective norms (Miniard and Cohen 1979; Ryan 1982; Shimp and Kavas 1984). Recent work in the tradition of the TPB has recognised two types of normative influence: (1) the descriptive norms that result from observation of what significant others do and (2) the injunctive norms that reflect a decision-maker's perceptions of what significant others say and think about the value of performing a behaviour (Conner and Sparks 2005). Studying normative influences on childbearing is an important stream of fertility research and both of these types of norms have been observed.

Effects of partners

A key normative influence on childbearing intentions and behaviour is the decision-maker's partner. Questions about perceptions of agreement on having a child have been standard in fertility surveys for some decades (Morgan 1985) and the decision to have a child is often seen as the joint decision of two partners (Rosina and Testa 2007). In his 1996 review of couple studies, Becker found that better predictions of fertility behaviour resulted when data about fertility intentions were obtained from both members of a couple than from one member alone (Becker 1996). Disagreement between partners has been associated with lower than predicted fertility behaviour (Thomson 1997).

In some contexts, women appear to act independently of men when it comes to making decisions about contraception, postponing and terminating pregnancy (Berrington 2004; Fried et al. 1980; Gipson and Hindin 2007). Nonetheless, partner relationships seem to be associated with the formation of fertility decisions (Zabin et al. 2000) and narrative reports of childbearing behaviour point to the importance of the interaction between spouses when childbearing decisions are made (Beckman et al. 1983; Gipson and Hindin 2007).

Demographic researchers have developed a number of models of fertility decision-making by couples. The most recent are agreement models which compare the intentions of both partners in order to predict behaviour (Miller et al. 2004; Rosina 2008; Thomson 1997). Surprisingly, demographic researchers working in the social psychological tradition have not included partners among normative referents in TRA- or TPB-based studies.

Effects of parents

Parents and other family members may act as both descriptive and injunctive norms. The number of children a person has has long been associated with the number of children born to parents, a descriptive norm (Axinn et al. 1994). Research that shows that mothers' preferences for their children's timing of childbirth and family size affect their children's

childbearing preferences (Axinn et al. 1994) and behaviour (Barber 2000) suggests that mothers have a strong injunctive influence on their children's childbearing intention.

Effects of peers

Peers (South and Baumer 2000) and social networks (Buhler and Fratzak 2007) have also been observed to have a strong influence on childbearing intentions. These influences may be both descriptive and injunctive. Recent qualitative research has, for example, identified that girls' childbearing intentions are influenced by their friends' experiences as mothers (Bernardi et al. 2007).

In some situations, subjective norms may affect intentions indirectly, through attitudes. There is some evidence for this last effect in the fertility domain; the descriptive norm of sisters' and girlfriends' permissive sexual activity has been found to be associated with permissive sexual attitudes and sexual behaviour among early adolescents (East et al. 1993).

3.8 Perceived behavioural control

As pointed out earlier, a key insight to be explored in the REPRO project is the role of control in fertility decision-making. Apart from Liefbroer's (in press) recent proposal to use the life-span theory of control to study changes in family size intention over time and the results achieved by Billari et al. (unpublished manuscript), we were unable to uncover research that has specifically examined the influence of this key variable on the formation of fertility intentions.

Some clues to the potential influence of control on fertility intentions can be found in recent literature. Aassve (2003) has observed that economic resources are associated with childbearing among young American women and research in Singapore has confirmed the importance of financial constraints on decisions to have no more children in the island state (Call 2008), but neither of these studies has examined the cognitions

associated with perceptions of behavioural control. This will be a unique contribution of the REPRO project.

4 REPRODUCTIVE DECISION-MAKING AS A PROCESS

Qualitative research on reproductive decision-making in low fertility contexts can be divided into two major streams: studies which refer to *elements of the decision process* (attitudes, norms, values and conditions related to becoming parents, family size and childbearing timing) and studies which focus on the *decisional process* itself (its phases, rank in the priority of decisions, suspension and activation). The value of qualitative analysis is the ability to reveal variability and complexity of human decision-making, actions and behaviour. Qualitative studies on attitudes, values, norms and social influences, as well as on the articulations of these latter with individually perceived constraints and priorities related to childbearing decision-making are recently cumulating across Europe. However, systematic comparative qualitative analyses of such data across contexts and generations are as rare as they are pivotal to interpret the correlation between fertility intentions and fertility behaviour across population subgroups.

This overview describes the major themes covered by qualitative empirical research on reproductive decision-making in low fertility contexts found in recent socio-psychological and socio-anthropological publications. Far from being exhaustive, it wants to represent the variety of qualitative research applied to reproductive decision-making and its potential to understand the relationship between fertility intentions and behaviour. Given the focus of the REPRO project on Europe, it purposively excludes the extended research conducted in developing countries, nor does it cover research in psychology, family counselling and nursing devoted to reproductive decision-making of individuals with health problems (i.e. chronic or acute illnesses, drug addiction or in difficult psychological situations) given the selected nature of the population of interest in these studies.

4.1 Elements of the decision process

Deciding on whether to become parent

Qualitative investigation of reproductive decision-making has devoted attention to values and representations of children, motherhood and fatherhood in order to understand their role in the decision to become parent. Often, this stream of research sheds light on the idealised representations and the contradictory frames with which individuals and couples face the transition to parenthood. Maher and Saugeres (2007) show that the all-encompassing and potentially overwhelming representations of motherhood inhabiting the minds of Australian, US and UK childless women contrast with the actual ways in which motherhood is seen and practiced in their social environment. For instance, childless women strongly emphasise the fact that mothering requires a constant engagement with the child while it is not necessary to the definition of femininity. Consequently, they perceive childbearing as hardly reconcilable with such other goals in life as work, personal development and social activities. Mothers, on the contrary, are more pragmatically treating motherhood as a 'natural' element of their femininity and combining it with their other activities without feeling restricted by the 'good-mother ideals'.

Besides representations of motherhood, decisions concerning parenthood are also confronted with considerations about partnership quality. Swedish couples seem to face dilemmas concerning parenthood when they confront the widespread ideal of parenthood within a nuclear family arrangement and the consciousness that intimate relationships easily break down (Bergnéhr 2007). In western Germany it is rather the role conflict implicit in a conception of women as primarily mothers and care givers on the one hand and their labour market orientations on the other hand that lead to fertility postponement and eventually permanent childlessness (Nave-Herz 1988). In contexts where social and economic transformation are underway and the welfare state is minimal or inadequate, like in Mediterranean regions or the urban milieu of former socialist countries,

major ambiguities and dilemmas result from balancing the ideal of entering parenthood after having secured the financial and housing conditions and the opportunity to realise such security (Bernardi and Oppo 2008; Hollos and Bernardi 2008; Mynarska 2006).

The result of reproductive decisions most often is not a decision for or against parenthood but rather a process in which ambiguity plays a role. Qualitative interviews in Britain with childless women who had already ended their reproductive life period were used to create typologies of patterns to definitive childlessness. Among the various paths identified by the researchers, the most interesting distinction is between the path to childlessness followed by women for whom being childfree was the result of a deliberate decision taken early in life and women who drifted into childlessness through a series of contingent decisions. Often these latter were formulated as competitive decision domains such as employment, education or relational commitments (McAllister and Clarke 1998). Subjectively perceived rationales for a childless choice range from values like gender equality, reproductive freedom, adulthood as continuous change, priority on the marital relationship (Campbell 1985) to psychological predisposition and personality traits (Park 2005; Donati 2000).

Recent studies have been specifically devoted to social mechanisms affecting reproductive intentions and behaviour. Social learning, normative pressure, subjective norms and imitation cascades are constantly referred to in answers to open questions concerning reproductive decision-making (Bernardi 2002, 2003). Empirical evidence also shows that the perceived effects of social mechanisms vary depending on the nature of the interaction with 'relevant others' (see Keim et al. forthcoming, for an example in Germany). Particularly relevant interactions are those with parents and with the family of origin. The intergenerational transmission of social identities (Kellerhals et al. 2002), values and attitudes towards parenthood is explored by means of qualitative studies (e.g. Horwitz et al. 1991).

Qualitative research has also highlighted the ways in which contradictions and social influences often affect men and women differently.

In his analysis of open conversations with men in a contemporary urban context in the US, the anthropologist Nick Townsend (2002) shows how the argumentations with which they explain their reproductive decisions reflect the interconnection of dominant values about manhood in American society. The multiple role of the man as husband, worker and father links marriage in a consistent 'package deal' with fatherhood and gainful employment. In contrast, this consistency is not possible for their female partners for whom motherhood and gainful employment are rather constructed in opposition with each other (Le Voyer 1999).

Deciding on when to become a parent

Qualitative research on childbearing timing has focused on the role of individuals' family orientations in the perception of age norms (Erfani and Baeujot 2006; Mynarska 2007), the mechanisms which trigger the onset of active reproductive decision-making and the rank of parenthood in the phases of the life course (Bernardi et al. 2008).

Settersten and colleagues used open-ended questions to identify and understand age deadlines in relation to various life transitions in the USA. They show that age norms are particularly relevant for family-related transitions: marriage, entering parenthood and completing parenthood (Settersten 1997). However, they did not find any strong age norm impact on people's reproductive behaviour (Settersten and Hägestad 1996). Similarly, in France, Mazuy (2006) did not find that age mattered as much as the feeling for the couple to 'be ready'. In contrast, Helfferich and co-authors (2005) argue that for German men being a father is a marker of adulthood. The authors show that this link between 'being a father' and 'being an adult' leads to different attitudes towards fatherhood among higher and lower educated men: lower-qualified men fear to reach the adult status too late, while higher-qualified men rather fear to become fathers too early (Helfferich, Klindworth and Kruse 2005).

Perelli-Harris (2005) also found an effect of age norms. She uses data from focus group discussions to illustrate how traditional norms foster

early childbearing in the Ukraine. Her findings show that young women feel the strong pressure to form a family in their peer group and from the older generation at an early age. This pressure seems to be rooted in a “deep tradition” (Perelli-Harris 2005: 64). Similar observations result from the analysis of age norms in Poland where “analyses show that age is a salient concept which is important for fertility planning. Our respondents frequently and spontaneously referred to age when talking about experiences or intentions related to the transition to parenthood. They also reported an ample pressure for having their children at relatively young age” (Mynarska 2007: 23).

Interpretative frames referring to relationships between gender, power, organisational culture and policy are employed in understanding the timing of childbearing of professional women. In her in-depth studies on academic Canadian women Armenti (2004) shows how they explicitly tried to schedule their pregnancy to fit the calendar of tenure contests in order to be able to hide their coming motherhood during the job search.

Evidence from in-depth interviews with fathers and mothers of young children in dual-career marriages in the US suggests that among the predictors of late birth-timing decisions there may be unresolved identity issues which interfere with the positive decision to have a child. The authors argue that “the biological time clock precipitates a reassessment of family injunctions about the status of education, occupation, finances and marriage, which, in turn, precipitates issues about sex-role identity and individuation before deciding to have a child” (Soloway and Smith 1987: 258; Settersten and Hägestadt 1996; Perelli- Harris 2005; Mynarska 2007).

Schäper and Kühn (2000) address the relationship between childbearing scheduling and long-term life goals by repeatedly interviewing a cohort of skilled workers sampled at the moment of completing their apprenticeship in Germany over a period of eight years. Their quantitative analysis shows that concrete plans about the timing of family formation and its realisation according to plans are rather exceptional. Their qualitative findings indicate that normative beliefs about when to have children

substantially interfere with rational arguments related to competitive behavioural intentions when discussing reproductive decision-making ambivalence in the intentions and in the desires. Helfferich et al. (2001 and 2005) also underline that there are non-rational elements—e.g. ambivalent or sub-conscious attitudes—which rather lead to ‘non-rational’ transitions to parenthood, although the transition to parenthood can often be described as a process of rational decision-making. The relevance of rational and non-rational elements in the decision-making process are also stressed by Burkart (1994) and Borchardt and Stöbel-Richter (2004) in their qualitative studies.

Bernardi and co-authors (2008) analysed attitudes about family formation and employment as expressed in a set of narratives of young adults in eastern and western Germany. Their analysis shows that, for western respondents, the couple’s financial security precedes family formation intentions in a strict sequential order of priorities, while the young adults grown in the eastern region pursue the two goals in parallel. The outcome is that individuals under comparable employment and financial situations in the two regions identify and weight the constraints affecting reproductive decisions differently. As a consequence, the ways in which they adapt their childbearing timing to educational and labour market schedules also differ.

4.2 Decisional process: intentionality, contraceptive decision

Reproductive decision-making implies decisions about parenthood, which are implicitly or explicitly decisions about contraceptive behaviour. Qualitative studies focusing on fertility management highlight the multiple aims involved in contraceptive behaviour. It can be a means to reconcile practising sex, temporarily preventing pregnancy and preserving fecundity for the future (Keogh 2005), a sign of honourability and social distinction in specific societies (Hanks 2007) or a routine drug disconnected from reproduction (Granzow 2007, 2008). *This literature points out the fact that reproductive outcomes may just be a secondary effect of contraceptive*

decision-making. The analysis of contraceptive decisions-making as a process in itself therefore adds another layer of complexity to reproductive decision-making.

Most studies addressing contraceptive decision-making in relation to reproduction directly concentrate on *unplanned* and unintended pregnancies. A recent study by Lifflander and colleagues (2007) used focus groups to explore the meaning of planning as perceived by a group of US women. Their findings indicate that planning involves a specific decision to have a child, behavioural steps to increase the likelihood of conception and concrete plans about how to care for a child. Most interesting in this study is the identification of positive aspects attached to unplanned births. Other qualitative studies addressing the concept of planned/unplanned pregnancy show its substantive ambivalence and argue that measuring it may be problematic. Focus groups conducted with US women in the mid-period of their pregnancy (24-34 weeks) revealed that the concept of planned or unplanned pregnancy is difficult to handle for at least two reasons: a) it may be undesirable to plan (women indicated birth planning as little meaningful and connected with negative stress or mentioned advantages in not planning a birth); b) it may be unstable through time (in particular religious women readily adapted to unintended pregnancy and reported changes in their perspective on the intentionality of their pregnancy) (Moos et al. 1997). Other studies address the difference between wanted and intended (or planned) pregnancy and conclude that wantedness is more decisive for the outcome of an unplanned pregnancy (Fischer et al. 1999). These studies suggest different reasons why the predictive power of declared reproductive intentions in relation to realised childbearing may be reduced.

Recent work focuses on the concept of intentionality applied to women's sexual and reproductive behaviour. Interpretative analysis of narrations about reproductive life histories as well as the normative and cultural prescriptions related to reproduction suggest that declared intentions (positive or negative) are a kind of "blueprint that while providing prospective direction, is characterised by a lack of specificity in execution"

(Esacove 2008, p. 386). The paper also discusses the role of information shared and evaluated in social networks as a crucial element in shaping women's attitudes and perception of control about their fertility.

A number of in-depth studies deal with the relation between the intentionality of a pregnancy and the secondary gains or losses associated with it. Harris and Campbell (1999) show that among the more than hundred women who gave semi-structured interviews in London those who had unplanned pregnancies were in situations in which they benefited more from the pregnancy than those who were not pregnant or had a planned pregnancy.

This is a particularly interesting observation since it suggests that it may be rather convenient to take the risk of an unplanned pregnancy. Similar findings were obtained when analysing qualitative data on contradicting intentionality, i.e. an expressed intention to postpone childbearing and inconsistent sexual and contraceptive practices stated within the same interview (for instance Kendall et al. 2005). This raises questions about the social desirability bias in declarations of intentions and their predictive power for reproductive behaviour.

In a large qualitative study on unplanned pregnancies in France, Bajos et al. (2002) conclude that the often observed contradiction between stated intentions (e.g. to delay childbirth) and behaviours (lax contraceptive practice) usually reflects a normative tension experienced by women/couples who want to achieve competing goals.

Helfferrich et al. (2005) present a differentiated view of how men decide on having children. They mainly describe four patterns: (1) collective agency (both partners follow the 'normal' life course), (2) the man leaves agency with his female partner and lets her decide, (3) indirect agency (man looks for a wife who matches his reproductive plans and then lets her decide on the details), (4) individualised agency (both partners plan separately ("I wanted/she wanted")), which has to be brought to a consent ("we want"). The authors argue that these decisional paths follow certain patterns: while collective agency is often found in interviews with eastern German men

from older cohorts, individualised agency is mainly found in interviews with highly qualified and younger men (Helffferich et al. 2005).

Reproductive timing and intentionality are related in multiple ways. According to Burkart's findings (1994), a birth may have been planned and taken place accordingly. However, even if it was not planned, it may have taken place at a convenient time. Alternatively, the birth can be the consequence of not actively taking the decision to abort early enough or the pregnancy may be the result of consciously having taken the risk by not using contraceptives.

Research on interactions among couples during the process of fertility decision-making is rare. Most studies look at these processes retrospectively and/or from the perspective of one partner only (e.g. Burkart 1994). One exception is the qualitative study of Borchardt and Stöbel-Richter (2004) who find that couples try to co-ordinate and synchronise their interests until they converge. In some cases, this leads to postponement, in others to the anticipation of birth for at least one partner.

4.3 Other themes

Competitive goals and event-driven decision-making

Looking at the narratives of professional women who were strongly committed to their careers and had been pushed out of the workforce by workplace policies and cultures that did not accommodate their family needs, Lovejoy and Stone (2006) find that, once home, the women adapted to home life and this shift created a change in their values and interests. The majority of these women abandoned the commitment to their former careers (though not to work as such), either seeking alternative paths in traditional professions for women or losing their career orientation altogether. An older study focusing on women who experienced similar shifts documents that unplanned re-orientations may have long-term consequences that radically modify the balance between work and family (Gerson 1985).

Health-related beliefs

A unique contribution of qualitative studies on reproductive decision-making is the research on beliefs about ‘nature’, ‘natural’ and ‘healthy’ in relation to reproduction in western contexts. These socially and culturally constructed concepts have been shown to influence contraceptive choices and their consistent use (Bledsoe 1996; Woodsong et al. 2004; Gribaldo 2007) as well as the propensity to resort to assisted reproduction techniques.

Analysing the experiences of women for whom pregnancy may represent a threat to their health and wellbeing, Thomas (2005) shows that reproductive decisions regarding subsequent pregnancies are likely to involve feelings of regret about the affected pregnancy (Thomas 2005).

5 FROM INTENTIONS TO BEHAVIOUR: REALISATION OF FERTILITY INTENTIONS

Demographers’ traditional interest in fertility intentions is linked with predicting fertility. Realised intentions can be used to extrapolate the completed fertility of cohorts into the future. It is also possible to forecast fertility and therefore construct reliable population forecasts (van de Giessen 1992; Morgan 2001). Besides this macro-level topic, the realisation or non-realisation of individual childbearing intentions has come to be of primary interest to demographers during recent years. Studies of the latter kind provide more insight into what type of intentions are more likely to be realised, which individual characteristics are linked with a higher or lower likelihood for this realisation and what obstacles might impede the realisation of intentions, an aspect of particular importance for policy-makers. In this section, the emphasis is on the micro-level realisation of (individual) childbearing intentions.

Realisation or non-realisation of fertility intentions has been the topic of studies for a long time. A major obstacle to this type of research is the need for detailed data, especially when the micro level is considered. The

minimum requirement are at least two waves of longitudinal data, with the first measuring intentions and the second measuring their realisation. Unfortunately, such detailed data are rare, particularly in Europe, and as a result research studies on this issue are scarce.

The realisation of fertility intentions is closely linked with the definition and measurement of intentions. Hence, we closely follow the discussion outlined in Section 3.4.

5.1 Fixed target, moving target

Traditionally demographers are interested in the completed fertility of cohorts or the overall level of fertility in a given year (usually indicated by the total fertility rate). Analogously, intentions are usually defined with respect to the intended number of children a woman would like to have by the end of her reproductive lifespan. Questions in surveys frequently refer to expectations (Morgan 2001 discusses the difference between expected and intended number of children, with the conclusion that it is minor). A target defined in this way is referred to as *fixed target* (Lee 1980). It has been the subject of numerous studies, which offer mixed evidence about the predictive power of intentions.

For example, Freedman et al. (1980) examined longitudinal data and found that, in general, fertility expectations match well with completed fertility, although expectations are consistently higher than actual fertility. Thomson et al. (1990) report a similar finding. In a different approach, Westoff and Ryder (1977) compared intentions to have more children with actual fertility observed five years later. They found a fairly good predictive validity of fertility intentions and, again, the expected number of children was below the one actually observed.

Using register data, Noack and Østby (2002) found that fertility expectations measured in the 1989 Norwegian FFS remained higher than subsequent fertility. They concluded that intentions and expectations are not a reliable predictor of fertility. They also noted that intentions not to have a

child, or another child, were very likely to be realised. Van Peer (2002) analysed the FFS data for nine countries focusing on two age groups of women above 30. Her comparison indicates that even in this age group, intended fertility remained above the actually observed one. Smallwood and Jefferies (2003) analysed a sequence of 21 surveys carried out in Great Britain from 1979 to 2001. They found that intended fertility is considerably higher than the actual one and that intended fertility has a downward adjustment trend. A longitudinal survey of marriages contracted in 1990 and 1991 in Hungary showed that plans reported in 1991 for the intended number of children were not achieved until ten years later (Kamarás and Szukics 2003). Symeonidou's findings (Symeonidou 2000) with data for Greece are similar: actual fertility is lower than intended fertility. However, Schoen et al. (1999) found that intentions are strong and persistent predictors of fertility in the US.

A population may be heterogeneous with respect to the magnitude and the sign of the mismatch between intended and actual fertility: Quesnel-Vallée and Morgan (2003) report that individuals in the USA with low fertility desires are more likely to meet or even exceed their personal desires as compared to individuals who wish to have a higher number of children. Liefbroer (in press) obtained a similar finding for the Netherlands. The authors of both studies report an overall satisfactory match between intentions and actual fertility.

A major problem with the lifetime intended number of children is that the period over which the realisation of intentions is expected can be too long, as much as 30 years for the youngest individuals. During this long period of time, conditions of life can change and thus invoke a change of fertility intentions. Hence individuals can adjust the ultimate number of children in the course of time. This is the case of a *moving target* discussed by Lee (1980). As mentioned above, Smallwood and Jefferies (2003) studied the adjustment of fertility intentions in Great Britain and found that the target moves downwards, i.e. the intended number of children declines with increasing age. Heiland et al. (2008) examine lifetime desires for children in

Germany and propose patterns in their instability. Heaton et al. (1999) analyse longitudinal data in the US to study switches in the intentions to have a child and in the intentions to remain childless; they also discuss postponement of intended births (see also Williams et al. 1999).

In this section we have discussed individuals' intentions relating to the number of children they intend to have. That is, childbearing is the target of fertility intentions. As indicated in Section 3, childbearing is the outcome of the behaviour with which the intention to have a child is connected. The behaviour proper could either be to try to become pregnant or to adopt a child or something else. When the intention is not to have a child, the proper behaviour refers to the way a pregnancy could be avoided and this includes the realm of family planning methods.

In the demographic literature, this topic has practically not been discussed from the point of view of intentions and their subsequent realisation. We once more refer to the recommendation by Miller and Pasta (1995) that childbearing intentions should refer to proceptive behaviour.

5.2 Timing intentions

Setting the number of children as the target of fertility intentions is problematic from the viewpoint of defining reproductive decision-making, because an intention constructed towards this target inevitably consists of a sequence of decisions. Intentions not to have children also include a sequence of decisions, as is illustrated by the extreme but probably most correct definition of the decision to have a child given by Ryder: "whether to let the next ovulation come to fruition" (cited in Morgan 2001, p. 2), i.e. an intention not to have a child is a series of monthly decisions to avoid pregnancy.

It is too demanding, although not impossible, to trace fertility intentions every month. A more practical solution is to collect information about intentions to have a child within a short period of time, such as two, three or four years. The realisation of such intentions refers to the expected

timing of births. A failure to realise this intention can be interpreted not only as a rejection of a birth altogether but also as the postponement of a birth.⁵

Toulemon and Testa (2005) compared intentions to have a child during the next five years observed in 1998 with their realisation observed five years later. They found an obvious mismatch. Schoen et al. (1999) noted that timing intentions are significant only in the short run (within four years, as contrasted with a period longer than four years).

Berrington (2004) introduced the concept of ‘perpetual postponers’. She used panel survey data, although the main question on fertility intentions was for completed fertility, not one for timing of births. Perpetual postponers are those individuals who report intentions to have a child in a sequence of surveys although they fail to realise this intention. A detailed study of the issue requires at least three consecutive panel surveys where the main question on childbearing would measure the timing of births. No results of this kind have been reported so far. White and McQuillan (2006) report that relinquished serious fertility intentions lead to an increase in distress. This result makes the issue of ‘postponers’ particularly important.

⁵ The timing of fertility choices has been acknowledged by economists. In the classic comparative-static approach (Becker 1991), direct and indirect income effects have an impact on the choice of the *lifetime* number of children in people’s utility function, while the choice for having a child is restricted to a period of time in a dynamic setting. Dynamic microeconomic fertility models involve the study of a sequence of periods, in which individuals make their choices of whether or not to have a child. Arroyo and Zhang (1997) and Hotz et al. (1997) provide reviews of this topic. Gustafsson (2001) reviews research that analyses the timing or postponement of maternity. She found that postponement is linked to the lower costs (costs accumulated through a lifetime of work) of a later birth and that the most important factors influencing postponement are the mother’s career costs. The father’s income is also among the significant factors.

5.3 The demographic context of fertility intentions

As discussed in Section 3, fertility intentions need to be well specified with respect to such important demographic characteristics of the individual as age, marital status, partner's intention and parity of the intended birth. Nearly all references cited in the preceding two subsections discuss this context. As the findings are unanimous, we do not repeat them in the text below.

Age

Findings indicate that intentions of younger respondents are less likely to be realised. Explanations are linked to the development of the life course: earlier in life, respondents have not yet faced the strength of alternatives competing with childbearing such as completing education, starting a working career and/or finding convenient housing.

Marital status

The fertility intentions of married persons are much more likely to be realised than those of unmarried persons. For this reason, many studies only examine the intentions of married persons. Intentions of persons in non-marital unions usually are as likely to be realised as those of married persons (Testa and Toulemon 2006).

Parity

The realisation of intentions to have a first child may differ significantly from that of intentions for any parity higher than one. Having a first child is a crucial transition in life, i.e. the transition to parenthood. People choose the proper timing for this transition, which may lead to a postponement of an intended entry into parenthood.

Partners' intentions

Conventional studies usually postulate that in a couple, the woman's intention is dominating because she performs the actual birth. Recent studies of partners' intentions show that the partner cannot be neglected, because fertility is a dyadic process (Rosina and Testa, unpublished manuscript). Miller and Pasta (1994, 1995) and Thomson (1997) emphasise the partners' influence on the realisation of intentions. Empirical studies indicate that when the partners' intentions are congruent, they are most likely to be realised (Berrington 2004; Rosina and Testa, unpublished manuscript; Philipov, unpublished manuscript).

Certainty

The importance of certainty, emphasised in Section 3, has been supported by empirical research. Findings unanimously conclude that intentions with higher certainty are more likely to get realised.

5.4 Why childbearing timing intentions may remain unrealised

People's lifelong intentions may remain unrealised because their situation may change and they revise their intentions. Timing intentions are supposed to be stable throughout a short period. Therefore it is expected that changing conditions of life may have a limited effect only. Available research is rare, as reported in the previous section. We add here the work by Barber (2001), which highlights the importance of competing alternatives.

Another reason for the non-realisation of intentions can be the way they have been constructed. Monnier (1989) reports that the systematic over-estimation of actual future fertility is due to the fact that respondents report a possible future fertility rather than stating their personal childbearing plans. We may also assume that respondents were influenced by the prevailing social norms about the number of children and their timing while, in actual life, they do not strictly adhere to these norms. Weinstein (1980) described the effect of unrealistic optimism about future events. In the context of the

theory of planned behaviour, the latter views can be seen as biases in perceived behavioural control.

5.5 Structural factors and realisation of intentions

Research that analyses the reasons for the fulfilment or non-fulfilment of fertility intentions usually emphasises the significance of demographic factors, while much less emphasis is put on structural factors. Moreover, analyses of the latter are available mainly when the data refer to a sequence of cross-sectional surveys, i.e. when they describe macro-level relationships only. For example, Adsera (2006) found that unemployment is an important reason for the non-fulfilment of fertility desires in Spain. Gustafsson's (2001) findings mentioned in footnote 3 are based on similar data. For a deeper understanding of intentions it is desirable to carry out a micro-level analysis, which may only rely on panel data. Reported research on this topic is scarce.

In their study of timing intentions, Testa and Toulemon (2006) find that highly educated respondents are more successful in realising their intentions, independently of whether the intention was to have or not to have a child during the 5-year study period. They conclude that highly educated people are better able to anticipate events and identified unemployment as a factor inhibiting the realisation of intentions to have a child.

6 MACRO-MICRO RELATIONS: MACRO-LEVEL DETERMINANTS OF FERTILITY DECISION-MAKING

The review presented in Section 2 outlining the macro determinants of fertility trends constitutes the basis for three important conclusions: a theoretical, an empirical and a methodological one. From a theoretical point of view, macro influences on fertility decision-making are very likely. The literature suggests that micro-level decision-making could be influenced by *economic*, *cultural*, *technological* and *institutional* factors. The actual economic situation (Butz and Ward 1979; Murphy 1992), the expected

economic prospects (Easterlin 1980), the level of female's labour force participation (Bernhardt 1993) and the consequences of globalisation (Blossfeld et al. 2005) in a country are examples of economic macro-level factors that are thought to impinge on individual and couple-level decision-making processes. The degree of individualisation and secularisation (Lesthaeghe 1995; van de Kaa 1987) are examples of cultural macro factors that could possibly influence individual fertility behaviour. The introduction of reliable contraceptives is the most significant example of a technological macro influence on micro behaviour (van de Kaa 1996). Finally, examples of institutional factors that influence fertility decision-making are the type and level of child care benefits in a country (Castles 2003), the dominant family policy in a country (Gauthier 2007), or—even more general—the type of welfare regime that is operative within a country (Esping-Andersen 1990, 1999).

Empirically, it is significant that almost all the literature that studies macro-level influences on fertility focuses on macro-level determinants of actual fertility behaviour. Much less empirical research is devoted to understanding macro-level influences on such other aspects of the fertility decision-making model as intentions, social norms or individual attitudes concerning childbearing.

From a methodological point of view, the literature review presented in Section 2 shows that very few studies *actually* test whether macro-level factors influence the fertility decision-making process. To further elaborate this issue, a classification of approaches that are used to generate knowledge about the influence of macro-level factors on fertility decision-making will be presented.

6.1 A classification of approaches to study macro-level determinants of fertility decision-making

In general, we distinguish three empirical approaches (macro-macro, comparative micro and macro-micro) designed to increase our understanding

of the potential influence macro-level factors have on fertility decision-making.⁶ Each of these approaches will briefly be described in the following paragraphs.

Most empirical studies on the macro determinants of fertility relate macro-level fertility indices to other macro-level factors, which are often thought to causally influence the fertility indices under consideration. We call these *macro-macro studies*. Prominent examples relate the GDP and fertility rates (Butz and Ward 1979) and female labour force participation and fertility rates (Engelhardt et al. 2004; Engelhardt and Prskawetz 2004). Most of these studies compare data for a set of distinct countries (Castles 2003), while some focus on one specific country and compare changes in fertility rates over time (Butz and Ward 1979; Murphy 1992). A few studies combine these two strategies (Engelhardt et al. 2004; Engelhardt and Prskawetz 2004; Liefbroer and Fokkema 2008). To our knowledge, all studies focus on an indicator of fertility behaviour as the dependent variable of interest and no studies have focussed on attitudes concerning fertility as the dependent variable of interest.

A second set of empirical studies uses micro-level data on fertility decision-making and tries to draw conclusions about the potential influence of macro-level factors by performing the same set of—usually multivariate—analyses in a number of different countries. We call these studies *comparative micro studies*. Although they are less common than macro-macro studies, a fair share of them is available. They differ in the number of countries they include and in the rigour with which country-comparative analyses are performed. One common subtype is that of an

⁶ Recently, Matysiak and Vignoli (2008) introduced a potential fourth type, i.e the *meta-analytical* approach. In their study they do a meta-analysis of the effects of female employment on fertility timing as found in micro-level studies. The quintessence of this approach is to quantify this effect and its variation across countries by treating each study as a unit of analysis. In their work, they use 51 different studies.

edited volume that features country-specific chapters and an overall synthesising conclusion (Blossfeld 1995; Blossfeld et al. 2005; Corijn and Klijzing 2001; Frejka et al. 2008). Another common subtype is that of a single paper in which exactly the same analysis is performed for a small set of countries (Fokkema and Esveldt 2008; Pinelli et al. 2002; Schmitt 2008; Sobotka and Testa 2008). Again, most of the comparative micro studies focus on fertility as the main individual-level dependent variable of interest, while some studies pay attention to fertility-related attitudes or norms.

The third, and until now by far smallest set of empirical studies pools micro-level data from a variety of macro-contexts, analyses these jointly and tries to account for variation across countries by including macro-level characteristics. We call these studies *macro-micro studies*, because information from both analytical levels is combined in one statistical model. The macro contexts could either be countries for studying differences across countries or years for studying change within countries. So far, only very few studies have used this macro-micro strategy to analyse the influence of macro factors on fertility behaviour (Adsera 2005; Fokkema and Liefbroer 2007; Rindfuss et al. 2007) or on fertility desires (Testa and Grilli 2006). In addition, most of these works are so recent that they have not (yet) been published in peer-reviewed journals but circulated as working papers only (Adsera 2005; Fokkema and Liefbroer 2007; Schmitt 2008). At least two reasons account for the lack of this type of studies. First, they require statistical models that allow researchers to account for the fact that individual-level data are clustered within a hierarchical structure. Multi-level models that can handle this kind of data have only recently become more common within the social sciences (Goldstein 1995). Second, they require datasets that (a) are highly comparable across countries or across periods if we want to study changes in fertility decision-making across time and (b) include a sufficiently large number of countries to make multi-level modelling feasible. Only recently have such datasets as the Family and Family Survey, the European Community Household Panel or the European Social Survey become available.

Given the aim of the REPRO project, all three types of studies are of potential relevance. Macro-macro studies are particularly important for WP 2 (macro perspective on fertility trends and institutional context). Comparative micro studies are most relevant for WP 3 (contextualised micro level: fertility intentions) and WP 5 (fertility intentions and behaviours in context: a comparative qualitative approach) as far as they relate to macro factors that influence attitudes and norms and for WP 4 (the micro level: fertility behaviour) as far as they relate to macro factors that influence actual behaviour. Macro-micro studies are importance for all of these WPs, but in particular for WP 6 (macro-level determinants of fertility decision-making), as the research to be done in this work package will use this particular type of design. Therefore, we will limit our discussion to the papers that have used this macro-micro design. Each of them will be discussed in somewhat more detail.

6.2 Macro-micro studies: design and findings

Here, the attention is on the findings and design of the few macro-micro studies that focus on aspects of the fertility decision-making process. We will first discuss each of the studies separately and next try to draw a number of conclusions about similarities and differences between them.

Adsera (2005) uses data from 13 countries that participated in the European Community Household Panel (ECHP) between 1994 and 2001 to examine the influence of unemployment on the timing of births. She exploits the fact that there is both variation in macro-level characteristics across countries and variation in these characteristics over time within a country. The first part of her analysis focuses on changes in birth timing between 1969 and 2001. In this part, macro-level information on the female unemployment rate is used to predict the probability to have a first, second or third child. This model does not include any individual-level information on unemployment. The strongest postponement of childbearing is observed in countries where the level of female unemployment is high. In the second

part of the paper, the influence of unemployment on having a second or third birth is studied for the period 1994-2001. In this part of the analysis, additional individual-level information on unemployment is included. Unemployed women have higher rates of second and third births than women who work, but only slightly higher birth rates than women who are not active on the labour market. So individual-level unemployment increases rates of second and third childbearing, but societal-level unemployment decreases them.

Fokkema and Liefbroer (2007) also use 1994-2001 ECHP data from 13 countries and study effects of (a) household income, (b) temporary employment and non-employment and (c) level of education on having a first, second or third child among couples. The effects of income, employment and educational attainment are thought to depend on the compatibility between work and family life and on the level of economic security in a country. They construct macro indicators of 'compatibility' and 'economic security' by factor-analysing a set of eight macro-level indicators. The results suggest important cross-level interactions. Highly educated women postpone childbearing in countries where work and family life are hard to reconcile, but if the compatibility of work and family life is good, educational attainment has a positive effect on birth rates. They also find that non-employed women are more likely to have a(n additional) child in a country where the level of economic security is high.

Schmitt (2008) examines the influence of unemployment on first-birth risks in Germany, France, the United Kingdom and Finland, using data from the ECHP. In addition to individual characteristics of respondents, information on the regional unemployment rate was added to the model. Among women, individual unemployment was related to higher birth rates in Finland, the UK and Germany. In France, only higher regional unemployment rates were related to higher birth rates. Thus, individual unemployment rather than regional unemployment seems to matter most in most of the countries.

Rindfuss and his colleagues (2007) use Norwegian register data to study the influence of child care coverage across municipalities on first-birth timing among women born between 1957 and 1962. Information from 435 Norwegian municipalities on the percentage of children aged 0-6 in day care and on female unemployment was used. Women had their first child earlier in municipalities where the provision of day care was better.

Testa and Grilli (2006) have been the only authors to examine the influence of macro contexts on fertility attitudes rather than fertility behaviour. They study the influence of regional contexts on ideal family size using data from the 2001 Eurobarometer, which is carried out in 15 countries. Because they considered this number too low to include macro characteristics at the national level, they decided to use such characteristics as the regional level instead. Overall, they included 72 regions. They observed that family size ideals among young cohorts are low if the fertility rate of older cohorts of women in these regions is relatively low as well. They interpreted this finding as indicating that some kind of intergenerational transmission of fertility ideals across cohorts may be operative.

These brief summaries show that the macro-micro study of fertility decision-making processes is still in its infancy. The number of studies that examine this link is very limited, the hypotheses tested vary considerably and different levels of analyses are used. Still, these examples also offer food for thought. First, they demonstrate that different types of macro contexts can be used. We can use the municipal, regional or national level as the context of interest and also combine this with time-series information, if longitudinal data on childbearing are available. The choice of the macro level will usually be based on theoretical arguments—at what level of aggregation does the process of interest operate?—and on empirical considerations—how many higher level units do I have at my disposal? Second, we can either focus on trying to examine whether fertility behaviour or attitudes vary across macro contexts and what it is in the macro context that causes this variation or examine so-called cross-level interactions—does

the influence of a micro-level variable differ across contexts? Third, the number of macro-level variables that can be included in the analysis is usually very limited because of (a) data availability limitations, (b) the small number of macro-level units or (c) the high correlations between macro indicators. All three factors make it difficult to draw definitive conclusions from such analyses. However, the same limitations pertain to other types of studies and compared to these, macro-micro studies have the advantage that the strength of relationships can be tested and that competing hypotheses can be adjudicated.

Thus existing macro-micro studies tend to utilise the national level as the highest level, though some studies use either the regional level or the municipal level for this purpose. Existing studies not only show that there are differences between countries or regions in the timing of fertility or in fertility intentions, but that the influence of certain factors (e.g. that of educational attainment) differs across countries.

6.3 Data requirements

An important prerequisite for macro-micro studies on fertility-related behaviour is the availability of high quality data at the national or regional level. At least for EU Member States, some of these data are available at Eurostat. In addition, other context data can be found in databases such as the Family Database developed by the OECD (www.oecd.org/els/social/family/database) or the Contextual Database of the GGP Programme (www.demogr.mpg.de/cgi-bin/databases/cdb/cdb.php) (Spielauer 2006). Portals such as the one developed and maintained by the RECWOWE (Reconciling work and welfare in Europe) project, funded by the EU in its 6th Framework Programme (<http://recwowe.eu>) are also important sources for useful macro-level indicators.

7 DISCUSSION

Official statements of European governmental bodies explicitly state that contemporary low fertility levels in Europe call for immediate policy action. The fertility gap, i.e. the observation that actual fertility is lower than the ideal number of children or the number of children people intend to have throughout their lives, is a major signal. While this indication is generally valid, it does not provide satisfactory information about the achievements of highly effective policies that aim at raising the number of births.

The REPRO project wants to contribute to the better understanding of the reasons for the fertility gap. To this end, it uses a theoretical framework that puts reproductive decision-making in a macro-micro perspective. The review in this paper indicates that this theoretical framework relies on a vast body of available research. At the same time, studies are scanty in a number of crucial directions of the project's planned research activities.

The macro level described in Section 2 serves as a reference point for all other research. Fertility trends, disaggregated into tempo and quantum, and their associations with major social and economic factors indicate relationships, which will be considered in more detail in the project. In particular, these macro findings require a relevant reference at the micro level, one that is free of ecological error.

At the micro level, it becomes necessary to measure fertility expectations in accordance with the requirements of relevant socio-psychological theories. We have chosen fertility intentions and study them by applying the theory of planned behaviour. A significant advantage of this approach is that data available within the Generations and Gender Programme (GGP) can be used to test this theory. However, this choice introduces the restriction that we will mainly address timing intentions, which are not fully informative about completed family size. They are, however, relevant for studying fertility postponement, a major trend observed in all European countries. Research on the application of the TPB

for studying fertility intentions is practically non-existent and research on timing intentions is scarce.

Most of the available studies on the realisation of childbearing intentions refer to the US and their validity for the European countries cannot be taken for granted. Hence the macro-micro aspects of the intended REPRO research are also based on scanty research. Research on qualitative data within the scope of the REPRO project is expected to provide valuable information about reproductive decision-making which is not available elsewhere.

In this state-of-the-art report we did not offer a full review of existing fertility theories. It is neither envisaged nor can it be excluded that the REPRO research will add to these theories. The innovative approach in the definition and measurement of reproductive decision-making and studying it in a macro-micro framework are very likely to contribute to existing fertility theories although this cannot be predicted at the beginning of the project.

A similar remark applies to policies. REPRO results will be policy-oriented. However, we do not impose requirements towards a specific policy orientation at the start of the project. Contributions will be the result of scientific work whose policy relevance cannot be anticipated.

Finally a brief note is due on the state of the art in projects funded by the European Commission.

The project FERTINT (Fertility intentions and outcomes: can policies close the gap?) is the direct predecessor of REPRO. It was a 1-year project directly financed by DG Employment. The partners produced several papers, most of which were considered in this review, for example Liefbroer (2008), Billari, Philipov and Testa (unpublished manuscript), Philipov (unpublished manuscript), Rosina and Testa (unpublished manuscript), Spéder and Kapitany (unpublished manuscript). The papers inform about the construction of fertility intentions and their realisation, making use of panel data in Bulgaria, Hungary, Italy and the Netherlands. All FERTINT partners

participate in REPRO where they will continue their research initiated earlier.

DIALOG (Population Policy Acceptance Study, PPAS) is an FP6 project. It relied on cross-section survey data collected specifically for the project and presents the second phase of the PPAS, known as PPA2. The project provided valuable information on Europeans' practices, attitudes and opinions concerning demographic changes, fertility behaviour, intergenerational exchange of resources and services and population-related policies. The study analysed values and attitudes affecting fertility decisions, perceptions of advantages and disadvantages of having children, the meaning of family and parenthood, aspirations in life, opinions and attitudes towards population-policy issues and measures, the role of government in providing support for families and preferences and aspirations regarding gender roles, paid labour and family life. Two volumes were recently issued, which will be extensively used by REPRO partners (Höhn et al. 2008a; Höhn et al. 2008b).

MOCHO (The rationale of motherhood choices: influence of employment conditions and of public policies) is an FP5 project. It studied how the motherhood decision is affected by labour market conditions and how public policies can be designed in order to promote parenthood by dual-career couples, which is becoming the normal way of life in European Union Member States. The findings show that labour market policies should encourage women's participation by reducing the costs of working, while social policies should help women to better reconcile work and motherhood. MOCHO studied motherhood choices and decisions as revealed by the corresponding behaviour, i.e. childbearing.

RECOWE (Reconciling work and welfare in Europe) is an FP6 research network project comprising 29 partners. The main aim is to overcome the chronic fragmentation and dispersion of existing research into the areas of employment and labour markets on the one hand and welfare regimes on the other.

SPReW (Generational approach to the social patterns of relation to work) is also an FP6 project. It analyses the intergenerational dimensions of changes in the relation to work. The SPReW research confirms the diversification of patterns of the relation to work and the trend towards increased 'reflexive' expectations regarding work. It also demonstrates that age is not the foremost variable that shapes these patterns: gender and education are also key variables.

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