

**Free to choose - but unable to stick with it?
Norwegian fertility expectations and subsequent behaviour for the
following 20 years¹**

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ABSTRACT

The analysis is based on two fertility surveys, Fertility Survey 1977 and Family and Occupation 1988. The latest one is the Norwegian contribution to the 1990 round of comparative European fertility and family surveys (FFS). Using data from the Central Population Register we have made a follow-up study comparing individual birth expectations at the time of interview with the number of births each respondent has had, 5, 11 and 22 years after they were interviewed. Respectively 95 and 97 per cent of the respondents have been followed up. Women who, at the time of the interview, were pregnant, sterilised or declared themselves to be infecund, were not asked any questions on fertility preferences, and have not been included in the analysis presented here.

This paper examines whether birth expectations are realised. At the time of the interview, 43 per cent of the respondents did not expect a(nother) child in the years to come. 57 per cent expected to have at least one birth in the future.

Like other studies of fertility expectations and subsequent behaviour at an individual level, our analysis confirms a rather weak relationship between fertility intentions and subsequent births. Short-term as well as long-term expectations overestimate future childbearing. There is, however, one important exception from this conclusion. Women who say they do not expect to have any (more) children, are highly trustworthy.

Comparing the number of children expected and the number of children obtained, no age group fulfilled their expectations. In 1999, women interviewed in 1977 had a TFR between 0.3 and 0.7 lower than expected. 44 per cent of the women got the number they expected, 42 per cent got less children and only 13 per cent got more than expected.

Women who are realistic in the sense that they do not have less children than expected, are more often expecting only one additional child, are more often married than single, and more often under 25 than aged 25-34. On the other hand, the more children the respondent already had in 1977, the higher age she had and the higher number of children she expected, the greater were the odds ratios for not fulfilling the expectations. For women with minimum three children and the youngest one under four years at the time of interview the odds ratio was 0.1 for not fulfilling the expectations compared with the reference group, childless women at the time of the interview.

Discussing the results, the period fertility as well as the individualisation theory as an overall process in modern societies are considered.

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As most fertility surveys, the standard questionnaire of FFS has questions about fertility preferences. The ultimate expected number of children varies between 2.0 to 2.4 for female respondents in the twelve European countries which at present have published their standard country reports. For young women only, those aged 20-24 years, the difference is larger, from 1.7 to 2.5. The young Polish women have the most moderate expectations, while the Norwegians at the same age have the highest ones.

Presentations of fertility expectations often remind us that if these variables are to be used to predict fertility, they have to be treated cautiously and with a good deal of scepticism. This paper will take a closer look at the basis for such a pessimism. Are fertility preferences really so, or even more unreliable as indicators for subsequent behaviour as frequently supposed? Or is it reasonable to consider the relation between fertility expectations and fertility behaviour as strong enough to promote further use of such expectations as a prognostic tool?

The tradition of asking future childbearing plans is solid. About fifty years ago, demographers started to ask such questions. Nowadays, one or more questions concerning prospective fertility plans seem to be a routine in nearly all fertility surveys. The discussion of the usefulness of asking women how many children they expect to have is, however, as old as the idea itself. Serious methodological objections have been raised, focusing on the validity and reliability of these kinds of measures, and the many different ways to operationalise fertility intentions (Ryder 1973, Rasul 1993, Miller and Pasta 1995). Some have even maintained that expectation data are nearly worthless. As for instance Simons (1978) concluding that "Probably most people know, when they reach it, the family size at which they wish to cease childbearing. But can they usually foresee what size that will be?" His conclusion is that before a woman has decided that she has enough children, her fertility preference represents her perceptions of an achieved family size characteristic of people like her self, and not her personal reproductive target.

The debate about the utility and policy implications of measuring birth expectations and

1992). Most countries do not use expectations in their projection models¹. Some because they do not think it makes sense, some because they did not have appropriate data (Van Hoorn and Keilman 1997).

Over all, the analytical use seems to be rather modest compared to the long tradition and extensive collection of this kind of data. One reason is the lack of consensus on the most appropriate way to measure preferred fertility (Bongaarts 1990). Ideas about prospective fertility plans have been measured in a lot of varieties, inter alia: desires, intentions, ideals, preferences and expectations. Although they may happen to be quite similar, they are normally not identical. Since fertility intentions strictly speaking exclude unwanted births, and desires and ideals can be perceived as more hypothetical, we generally use the terms *expectations* or *preferences*.

The scarcity of research of fertility expectations and subsequent births is particularly noteworthy regarding analysis at an individual level. Data problems are most likely the main reason to this situation. Panel data are usually needed, research designs which are highly expensive and entail constant drop out problems. Measuring the prognostic value at aggregate level only reduces some of the problems mentioned. Aggregate analyses can, however, not eliminate the possible counterbalancing effect which may be the result of under- and overestimation of subsequent births.

The Norwegian FFS was conducted as early as in 1988². Only minor cohort differences in the number of children ultimately expected emerged in this survey (Noack and Østby 1996). The average total expected varies between 2.2 and 2.5 with the highest figures shown for respondents still in their twenties at the time of the interview. At that time in life, the proportion expecting to remain childless is small, and only a modest number expect to be the mother of a single child. Comparing women in their thirties in 1988 with the preferences of women from the same cohorts eleven years earlier, the proportion expecting to stay childless or to have only one child had increased slightly (Noack and Østby 1996). A change which seems reasonable, taking into consideration that some may have experienced fecundity problems, some may have found their family situation different from their anticipations and others perhaps just acquired more realistic views on having children.

Thanks to a system of unique personal identification numbers (PIN) for everyone living in the country, the Norwegian interview data can be linked to individual birth histories from our

Central Population Register. In this way, the relations between fertility expectations and subsequent births can be analysed without any reinterviewing. Compared to panel surveys, this is a very inexpensive method, and minimises the wellknown problem with high panel mortality. This paper presents the results from linkages between two Norwegian fertility surveys, conducted in 1977 and 1988, and register information about the women interviewed. The register contains information about births which had occurred in the period after the interviews, 11 and 22 years respectively. Considering the long observation periods, we get a data material where most of the women originally interviewed about their fertility expectations have ended or nearly ended their reproductive career.

In a previous article we compared fertility expectations expressed in 1977 with births recorded among the same women for the period 1978-1982 (Noack and Østby 1985). The correspondence between positive fertility expectations and later births seemed to be rather weak. Expectations for the short run, up to five years ahead, clearly overestimated future births. Those who expect to have children, got considerably fewer than anticipated. Those who did not expect children in the following five years were, however, highly reliable in their forecasting. This holds true even for young women and women who were childless or had only one child at the time of interview. These results, although not completely comparable, are in accordance with other studies (Coombs 1979, Westoff 1981, Van de Giessen 1992).

In the first part of our analysis, we repeat the analysis mentioned above in order to compare the predictive effect for two different five years periods, 1978-82 and 1989-1993. As a working hypothesis, we suppose that the relationship between fertility expectations and behaviour may have been strengthened since we made our first study. In the first period, 1978-1982, the fertility was levelling out at about 1.7 after a fairly rapid decline through the previous decade. In the next period, 1989-1993, the fertility is levelling out around 1.9, after an increase, although a rather modest one. If expectations as often supposed, mainly reflect prevailing norms at the time of the interview, the overestimation may be smaller in a period with increasing fertility than in a period of decrease.

Our data are also suitable to compare the fertility expectations women expressed early in life with achieved family size for the same women at the end of their reproductive period. We anticipate that a rather large proportion will be too optimistic, meaning that expected number of children will be explicitly higher than the number of children they actually got. The proportions expecting to stay childless were very modest in the two surveys, 1-3 per cent for

comparable populations. We will also look at the more realistic proportion, women who either got exact the same number as expected or had more children than they expected at younger ages.

The oldest segment of the respondents is mainly omitted from the analysis. When women are in their late thirties or in their forties, only a small part will expect future children in 1988³.

The analysis comprises merely female respondents. Corresponding analysis can be accomplished for two male cohorts only in the 1988-survey, but there are no wife-husband data. Omitting the partners' fertility preferences may obscure the relationship between expectations and subsequent births. Analyses of couple data show significant effects of husbands' desires on couple fertility behaviour (Thomson, McDonald and Bumpass 1990, Thomson 1997).

DATA

The present analysis is based on a follow-up study in the Central Population Register (CPR) of the respondents of two Norwegian family and fertility surveys.

Every demographic event (birth, death, marriage, separation, divorce, change of address (migration) etc) has been recorded in the register. Based on some decades use of the register for a variety of statistical and analytical purposes, our evaluation of the CPR is that it covers both stock and flow data reasonably well.

In Norway, we conducted our first national fertility survey in 1977, Fertility Survey 1977 (FS 77) (Østby 1981, Noack and Østby 1981). The study was planned within the frame of World Fertility Survey, and was a survey where women of age 18-44 years (born 1933-1959) were interviewed. Complete interviews were obtained with 4137 women, 82 per cent of the gross sample.

Eleven years after FS 77, we conducted the latest national fertility survey in Norway, Family and Occupation 1988 (F&O 88). This survey turned out to be the first one in the UN Economic Commission for Europe Population Activities Unit (ECE/PAU) 1990 round of

comparative European fertility and family surveys. The Norwegian survey came a little too early to fully benefit from the European co-operation, but could to some extent influence its successors. It has included the majority of main variables from the European questionnaire (Noack and Østby 1996). Some of the attitudinal questions from 1977 were repeated, and childbearing expectations were treated in the same way as before. The female response rate was the same as in FS 77, 82 per cent.

The responses from the two surveys have been kept with a secret identification number based on the PIN. Thus, we have the possibility to follow what have happened to the respondents after the survey was taken, for phenomena that are covered by the register system. The fertility histories cover all births until February 1999, that is approximately 22 and 11 years after the respective surveys⁴. We have also linked information on the highest education completed, until October 1997

From FS 77, we are able to follow as many as 3 919 women (95 per cent) of the original sample all the way to 1999 (see table 1). We can also see that the coverage is declining with increasing age. That is mainly due to mortality, in the ages 57-66 years it is not negligible. Since 1977, 51 women in the sample have emigrated and 96 are dead. Of course, the sample cannot be supplemented with arriving immigrants. 71 women (less than 2 per cent of the sample) have escaped the follow up for other reasons than death or emigration.

The last two columns in table 1 show the number of women entered in the analyses. Women who at the time of the interview were pregnant, sterilised or declared themselves to be infecund, were not asked any questions on fertility intentions, and will not be used in the follow-up.

From the 1988 survey, we can follow as many as 97 per cent (3 902 women). Of those missing, are 61 dead, 28 are emigrated, and for 28 (less than 1 per cent) we can see no reason for why we should not be able to find them in the register. The two last columns of table 1 show a relative low follow-up in the analyses from F&O 88, compared to FS 77. The reason for this is mainly that sterilisation was much more common in 1988 than in 1977, and the number excluded from the follow-up for this reason is consequently much higher.

RESULTS

In comparing fertility preferences and subsequent behaviour, we have divided the women into two categories. The first group comprises those who had negative intentions meaning that they did not expect to have any (more) children in the years to come. This category makes 43 per cent of the respondents, "don't know" answers not included⁵. The remaining 57 per cent is the other category, women who expected to have at least one birth in the future.

How reliable are those who have negative expectations?

Negative expectations were more widespread among those interviewed in 1977 than in 1988, 49 per cent and 37 per cent respectively. The main reason for a smaller proportion with negative expectations of those interviewed in 1988 than in 1977, is supposed to be that the family formation process has been considerably delayed during the period.

Among those with negative expectations, 97 per cent in FS 77 and 95 per cent in F&O 88 had no birth within the first five years after the interview (see table 2). There was a certain age dependency, stronger in 1988 than in 1977. In 1977, 88 per cent even among those aged 20-24 had no (more) children increasing to 99 per cent for those aged 35-44. The lowest compliance rate, 68 per cent, was found for those aged 23 in the 1988 survey. Almost one third of these women had a child within five years although they had stated that they did not expect to have a(nother) child at all. We have to notice, however, that of women aged 23, only 31 women expressed negative expectations.

The women with negative expectations reduced their compliance rate moderately between five and eleven years. 93 per cent from FS 77 and 92 per cent from F&O 88 had still not had a(nother) child after 11 years. The predictive value is of course most interesting among the younger women, the older ones will gradually come to the end of their reproductive period, thus being helped by the calendar. Among respondents in their twenties in 1977, about eight of ten did not give birth in the following 11 years. The predictions of those aged 28 in F&O 88, were almost equally reliable. The small group of women aged 23 in 1988 and with negative expectations had a considerable lower reliability. Nearly half of them had one or more subsequent births during the eleven years of observation in spite of their negative expectations at the age of 23.

For those interviewed in 1977, the observation period can be extended to 22 years. This

means that and even larger proportion is helped by the calendar. The compliance rate is, however, also high for those mainly observed at fertile ages. 22 years after the interview, the compliance rate was 73 and 83 per cent respectively for those aged 20-24 and 25-29. These seem to us to be high figures, taking into account the many unforeseen changes that might have happened in their lives.

Positive expectations and subsequent births

Considering previous comments, the categories with positive expectations were a little larger in 1988 than in 1977, 63 and 51 per cent respectively. Roughly every second of those expecting a(nother) child also had one within five years (see table 3). As anticipated, women in ages with highest fertility, displayed most consistency between expectations and subsequent behaviour.

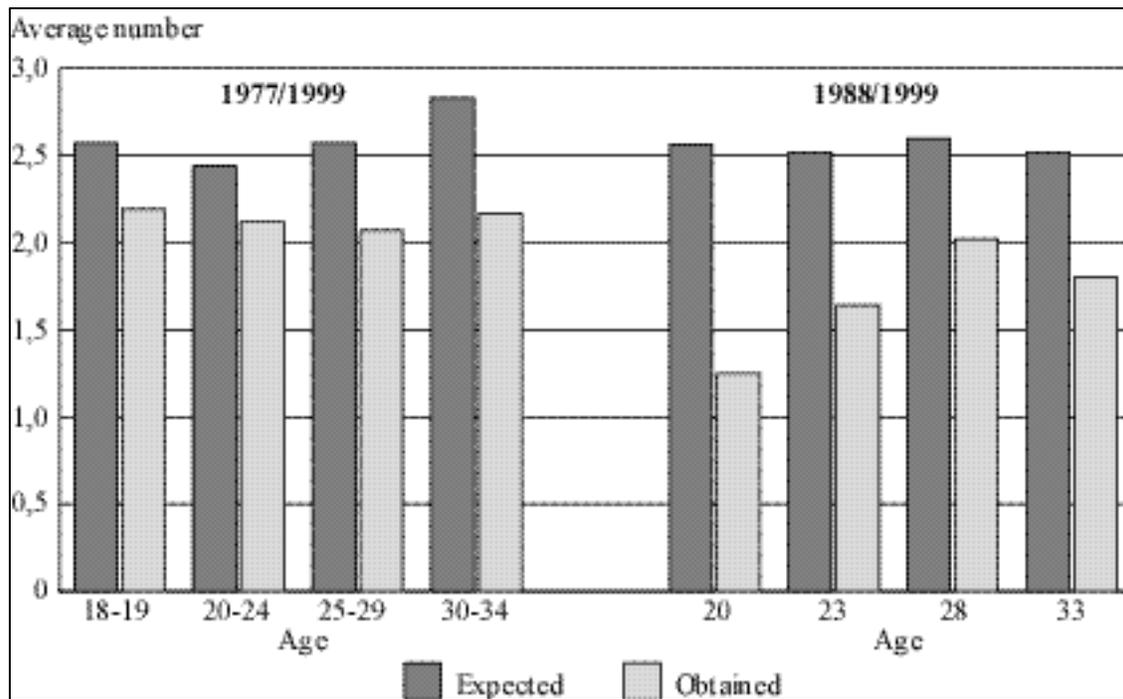
The compliance rate is, of course, increasing with time. Among the 1977 respondents the percentage having had a child increased from 50 per cent after 5 years to 69 and 76 per cent after 11 and 22 years, respectively. The respondents from 1988 had exactly the same rate after 11 years, 69 per cent. Those in their early thirties at the time of the interview, did not adhere to their expectations that close. Only 51 and 58 per cent respectively, actually had a child (see table 3). This confirms our impression from the fieldwork, that these women wanted to keep an option open, without being really committed to their answers.

By and large, negative expectations seem to be considerably better predictors for subsequent fertility behaviour than positive ones. There were remarkable small differences between the data sets from 1977 and 1988. Differences, when occurring, correspond well to the increasing tendency to delayed childbearing.

Previous expected number of children compared to actual number in 1999

For women expecting (more) children in the future, we have compared their *total expected number* (the number they already had plus the number expected) with the number they actually got until 1999. Excluding women who did not expect any birth in the years to come, there is no possibility to have a compensation effect due to women with negative expectations who later got one or more children. The results are shown in figure 1.

Figure 1 Average number of children, expected at interview 1977/1988 and obtained



As anticipated, no group fulfilled their expected number of children. The women had a TFR between 0.3 and 0.7 lower than they expected in 1977. Among these respondents, the youngest are at least 40 years of age in 1999, and the great majority will have no more children.⁶

Analysing the 1977 data, we found that women 18-19 years old had a higher expected TFR than those in their early twenties. At that time, we were inclined to explain this result as an effect of unrealistic views among teenagers not aware of what motherhood would be. 22 years later, however, it turned out that they were right. None of the groups got the number they expected, but still, the teenagers (born 1958-59) with positive fertility expectations really got more children than those interviewed at age 20-24 (born 1953-57). This difference is not large by any standards, but still interesting.

Among the respondents from 1988, only the two oldest age groups are anywhere near the end of their childbearing period. The difference between what they got and what they expected are the same as for 1977-respondents interviewed at same ages.

Comparing expected and obtained number of children, it seems as the age at interview, not the cohort, is of greatest importance. In both surveys, the difference between expected and real number of children is increasing with increasing age at the time of interview. For the whole period, there seems to have been a tendency to postpone having children without reducing the

expected number to same degree. A number of the postponers will realise that the postponement has been too long compared to their reproductive performance. Further and in the same direction, social reasons might interfere with their expectations at younger ages.

How many hit their reproductive target?

In this section we have included only women with a real possibility to have more children (interviewed before the age of 35), and at the same time being old enough to have come to the end of their reproductive career before the follow-up in 1999. Consequently, we can use only respondents from the 1977 survey. 44 per cent of these women got the number they expected, 42 per cent got less children and 13 per cent got more than expected.

More than 90 per cent in this group expected two or three children, with a majority for two (see table 4). The respondents liked to answer in terms of "I expect two-three children", the exact number seemed to be of minor importance. The interviewers were, however, instructed to "force" them to choose one of the alternatives. Still, when we see the number of children they got, there is a distinct difference between those answering two and those answering three. Those expecting two children ended with an average of 1.7, whereas those expecting three got 2.4. Thus, it seems that even this simple measure of expected number of children has a certain predictive value.

The equivalent group of respondents from 1988 is too young to be followed to the end of their reproductive period. Still, we did compare expected and obtained number of children for women of age 28 and 33 in 1988 with those of age 25-34 in the 1977-survey. The results were almost identical, even when the youngest from F&O 88 were only 38 years of age at the time of the follow-up.

Propensities of optimism or realism in expressing future fertility

In both surveys, the women tended to be far too optimistic in estimating future number of children. Among women 18-34 of age with positive expectations in 1977, 42 per cent were too optimistic in the meaning that they had fewer than expected when followed up after 22 years. The proportion of too optimistic women was a little higher among those 28 and 33 years of age in 1988, 48 per cent. This number will certainly decline, but not much.

The women who are not belonging to the *too optimistic group*, either got more or exactly the

the *realistic group*. We have taken a closer look at the characteristics of the last group. To analyse this, we include only women with positive expectations, and under the age of 35 at interview.

The method we have applied for this purpose is logistic regression, where we estimate the odds ratios for belonging to the *realistic group*, meaning that they did not overestimate the number of children. We have made separate models for FS 77 and F&O 88 data. For both surveys, we have estimated one model with only demographic variables, and one with some of the usual background variables in addition. The selection of variables is shown in table 5 and 6.

As anticipated, the model based on FS 77 shows a strong influence from the demographic variables. Expecting only one additional child, being married and 18-24 years gave higher odds ratios for having at least as many children as expected (see table). The cohabitation status is referring to the time of interview. The more children the respondent already had in 1977, the higher age she had and the higher number of children she expected, the greater were the odds for being unrealistic. For women with minimum three children and the youngest one under four years at the time of interview the odds ratio was only 0.1 compared to the reference group, childless women.

As table 5 shows, most differences are clearly significant. When introducing background variables, like education, labour force activity, being religious active, and type of residential area, we see no significant effects. When comparing model A and B in table 5, we see that none of the new variables have any significant effects, and that model A is almost unchanged. The estimated effects of the demographic variables are the same, as are the log likelihood and the goodness of fit (Keilman 1993). The ability to be realistic is seemingly independent of a number of social background variables, and dependent upon simple demographic factors.

Table 6 includes respondents of age 33 and lower in F&O 88. The number of respondents is lower, and the observation period is shorter (only 11 years) than for the models based on the 1977-survey. The main difference between model A in table 5 and 6 is that the negative effect of having children (age of youngest child and number) is much lower, and hardly significant. We must again remember that a number of these women have not yet had time for surpassing their expectations. Own age does hardly play any role at all. When introducing some background variables, nothing happens with the model, as in table 5.

Both table 5 and 6 illustrate that background variables play no significant role in estimating the predictive performance of the respondents. The hypothesis that women with higher education are more successful in giving realistic expectations, is not supported in our analyses. Neither has the idea that religious active women may fulfil their childbearing expectations better than other women. We anticipated that women well established in their adult lives (in the labour market and not enrolled) should follow their preferences better than those not so well established. We found no such effects. The closeness between the models based on 1977 and 1988 data strengthen these somewhat surprising conclusions.

DISCUSSION

As demonstrated in several studies, our analysis confirms a rather weak relationship between fertility expectations and subsequent births. Short-term as well as long-term expectations overestimate childbearing in the years to come. There is, however, one important exception from this overall conclusion. Women who say they do not expect to have a(nother) child, are highly trustworthy. This was true for the situation around 1980 and was verified once more when we followed the respondents to the end of the -90s. In predicting future fertility, these results may help us to exclude the proportion which probably will not contribute with any further children in the future.

The hypothesis that fertility expectations may be better indicators in a period with increasing fertility than in a period of decrease, is not confirmed by the results. The proportion of women being too optimistic was about the same around 1980 as around 1990.

Making hypotheses about the expectation-behaviour nexus, we may also refer to the overall theories of the ongoing processes in modern societies. The individualisation theory, which is supposed to impair the influence of normative guidelines and promote more individual choices is one example (Lesthaeghe and Surkyn 1988, Ester, Halman and de Moor 1994). Although much empirical testing is still needed, it seems reasonable to believe that conscious and reflexive choices play a far more predominant part in the fertility behaviour than some decades ago. According to the theory, age standardised normative guidelines for appropriate timing of births and appropriate number of children are supposed to be impaired. Decision-making and individual initiative are increasing and it seems more appropriate to talk about "choice

biography" than "standard biography". Liefbroer (1999) has emphasised that in a situation like this, the relationship between individual intentions and subsequent behaviour may be closer.

A hypothesis anticipating more conformity between expectation and behaviour in more individualised societies, is not supported by our results. The proportions of women who did not fulfil their expectations are more or less the same around 1980 and 1990. The explanation may be that the significance of making choices and planning family life strategies was highly important in Norway already in 1980 with only minor changes in the next decade.

There is a possibility, however, that we overestimate the ability to fulfil these choices although they are distinct and thoroughly considered. The necessity of making choices is embedded in a development towards reduced certainties (Beck and Beck Gernsheim 1995). A more flexible labour market and great changes in the gender division of labour are important parts of this development. Although the individuals decide more actively their own family life strategies, the uncertainties mentioned may be hard to overcome. Underestimating the disposition and possibilities to alter fertility expectations may also contribute to the results.

All things considered, the predicting value of fertility norms and age standardised normative guidelines for appropriate timing and births may be as good as, or rather as bad as the accuracy of individual choices in a society that presuppose that such kind of choices are actively made.

Considering long-term expectations and number of children at the end of the reproductive period, our analysis has demonstrated that the ability not to overestimate the fertility behaviour corresponds with some demographical variables, as parity status, the age of the youngest child and whether they cohabit or not. Traditional background variables as educational level and religiosity have, however, no effects at all.

In discussing how to measure fertility expectations, it has been put forward that fertility expectations perhaps only mediate the effects of other established predictor variables. An analysis of Shoen et al (1999) indicates, however, that the preferences have an additional impact on fertility behaviour. Our data are suitable to throw light upon this question too, and it will be analysed as a next step in combining register data and the Norwegian fertility surveys.

are too simple indicators. Several years ago, Udry (1982) pointed out that the concept *norm* as used in studying fertility, had very little in common with the sociological concept. Most of the fertility surveys only consider statements, while the most crucial point related to norms, questions on sanctions and consensus, usually are omitted. Additionally, Hagestad and Neugarten (1985) introduced suggestive nuances with their three P's (permission, proscription and prescription), describing role entries and exits, time tables, and norms and other kind of age-appropriate behaviour. While Liefbroer (1999) concludes that "- cultural scripts that transmit guidelines on the appropriate timing and sequencing of family life events are important in determining the actual intentions and behaviour of young adults". To be able to explore these kind of approaches, we do not need more blue copies of fertility surveys, but a vigorous revision of the questionnaires which have been more or less routine for decades.

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**Table 1. Data
Fertility Survey 1977**

Cohort	Original sample			Register follow up 1999			
	Age at interview	Age 1999	Number of respondents 1977	Number followed 1999	Per cent of respondents 1977	Applied in analyses	
						Number	Per cent of respondents 1977
1958-1959	18-19	40-41	320	312	98	301	94
1953-1957	20-24	42-46	846	820	97	750	89
1948-1952	25-29	47-51	931	900	97	793	85
1943-1947	30-34	52-56	866	814	94	693	80
1933-1942	35-44	57-66	1 174	1 073	91	807	69
1933-1959	18-44	40-66	4 137	3 919	95	3 344	81

Family- and Occupation Survey 1988

Cohort	Original sample			Register follow up 1999			
	Age at interview	Age 1999	Number of respondents 1988	Number followed 1999	Per cent of respondents 1988	Applied in analyses	
						Number	Per cent of respondents 1988
1968	20	31	721	705	98	675	94
1965	23	34	696	684	98	632	91
1960	28	39	737	721	98	621	84
1955	33	44	691	660	96	510	74
1950	38	49	627	608	97	420	67
1945	43	54	547	524	96	269	49
1945-1968	20-43	31-54	4 019	3 902	97	3 127	78

**Table 2. Consistency among negative fertility expectations and subsequent behaviour.
Women interviewed 1977 and 1988. Per cent**

	Length of observation			Number of women
	5 years	11 years	22 years	
Interviewed 1977				
All	97	93	93	1 358
18-19 years	5
20-24 years	88	83	73	40
25-29 years	91	84	83	222
30-34 years	97	92	92	400
35-44 years	99	98	98	691
Interviewed 1988				
All	95	92		1 048
20 years		10
23 years	68	55		31
28 years	85	79		121
33 years	94	91		266
38 years	98	97		357
43 years	100	100		263

**Table 3. Consistency among positive fertility expectations and subsequent behaviour.
Women interviewed 1977 and 1988. Per cent**

	Length of observation			Number of women
	5 years	11 years	22 years	
Interviewed 1977				
All	50	69	76	1 427
18-19 years	36	73	87	258
20-24 years	54	73	83	622
25-29 years	54	66	68	394
30-34 years	47	51	51	133
35-44 years	20	35	35	20
Interviewed 1988				
All	48	69		1 749
20 years	35	65		643
23 years	52	76		559
28 years	62	74		396
33 years	50	58		125
38 years	23	27		26
43 years				0

**Table 4. Women under 35 expecting at least one (additional) child, by expectation
1977 and parity 1999. Per cent**

Total number of children expected 1977	Parity in 1999						Number of respondents
	0 children	1 child	2 children	3 children	4+ children	Average number of children	
1 child	26	26	37	11	0	1.3	19
2 children	11	19	52	15	3	1.7	622
3 children	5	8	40	39	8	2.4	470
4+ children	11	4	20	36	29	2.7	85

Table 5. Logistic regression of accuracy in birth expectations. 1977-respondents.

Variable	Value	Model A: Age and family phase		Model B: Model A + background variables	
		Odds ratio	Estimate	Odds ratio	Estimate
Own children 1977			***		***
No child		1.00	0.00	1.00	0.00
1 child, 0-3 years		0.68	-0.39(*)	0.69	-0.38
1 child, 4+ years		0.29	-1.23***	0.29	-1.23***
2 children, youngest 0-3 years		0.16	-1.81***	0.16	-1.82***
2 children, youngest 4+ years		0.29	-1.23**	0.29	-1.25**
3+ children, youngest 0-3 years		0.10	-2.29***	0.10	-2.26***
3+ children, youngest 4+ years		0.22	-1.51(*)	0.24	-1.43
Age 1977			**		***
18-24 years		1.71	0.54**	1.81	0.60***
25-34 years		1.00	0.00	1.00	0.00
Additional children expected 1977			***		***
1 child		3.95	1.37***	4.06	1.40***
2 children		1.00	0.00	1.00	0.00
3+ children		0.25	-1.41***	0.24	-1.43***
Cohabital status 1977			***		***
Alone		1.00	0.00	1.00	0.00
Cohabiting		1.80	0.59*	1.86	0.62*
Married		2.68	0.98***	2.59	0.95***
Religious activity 1977					
No				1.00	0.00
Yes				1.27	0.24
Level of education 1977					
less than 10 years				0.93	-0.07
10-12 years				1.00	0.00
13+ years				1.06	0.06
Educational activity 1977					
No				1.00	0.00
Yes				0.75	-0.29
Labour force activity 1977					
No				1.00	0.00
Yes				0.93	-0.07
Type of residential area 1977					
Urban				1.00	0.00
Rural				0.99	-0.01
N		1 125		1 122	
Log likelihood		-670.7		-666.9	
Goodness of fit		55.1 %		55.2 %	

(*) Significant different from reference group on 0.10 level

* Significant different from reference group on 0.05 level

** Significant different from reference group on 0.01 level

*** Significant different from reference group on 0.001 level

The respondent has a high value on the dependent variable if she obtained the same number of children expected or more than expected.

Table 6. Logistic regression of accuracy in birth expectations. 1988-respondents.

Variable	Value	Model A: Age and family phase		Model B: Model A + background variables	
		Odds ratio	Estimate	Odds ratio	Estimate
Own children 1988			*		*
No child		1.00	0.00	1.00	0.00
1 child, 0-3 years		0.82	-0.20	0.82	-0.20
1 child, 4+ years		0.62	-0.47	0.60	-0.51
2 children, youngest 0-3 years		0.40	-0.93**	0.40	-0.91**
2 children, youngest 4+ years		0.22	-1.50**	0.21	-1.55**
3+ children, youngest 0-3 years		0.42	-0.87	0.42	-0.86
3+ children, youngest 4+ years		0.87	-0.14	0.88	-0.13
Age 1988					
18-24 years		1.19	0.17	1.16	0.15
25-34 years		1.00	0.00	1.00	0.00
Additional children expected 1988			***		***
1 child		4.14	1.42***	4.14	1.42***
2 children		1.00	0.00	1.00	0.00
3+ children		0.24	-1.43***	0.25	-1.40***
Cohabitation status 1988			*		***
Alone		1.00	0.00	1.00	0.00
Cohabiting		2.51	0.92***	2.39	0.87***
Married		3.32	1.20***	3.22	1.17***
Religious activity 1988					
No		1.00		0.95	-0.05
Yes		1.00		1.00	0.00
Level of education 1988					
less than 10 years		1.00		0.88	-0.13
10-12 years		1.00		1.00	0.00
13+ years		1.00		0.89	-0.12
Educational activity 1988					
No				1.00	0.00
Yes				1.03	0.03
Labour force activity 1988					
No				0.83	-0.18
Yes				1.00	0.00
Type of residential area 1988					
Urban				1.00	0.00
Rural				1.23	0.21
N		1 588		1 588	
Log likelihood		-869.7		-866.9	
Goodness of fit		58 %		58 %	

(*) Significant different from reference group on 0.10 level

* Significant different from reference group on 0.05 level

** Significant different from reference group on 0.01 level

*** Significant different from reference group on 0.001 level

The respondent has a high value on the dependent variable if she obtained the same number of children expected or more than expected.

Notes

¹ USA, the Netherlands, United Kingdom and Australia are the only countries that use birth expectations in their national forecasts (Van Hoorn and Keilman 1997).

² Contrary to the FFS standard recommendation the Norwegian FFS asked about expected number of children not number of children wanted. It seems reasonable to believe that should there be any noticeable difference between the two variables, expected would turn out to be a little lower since it suggests a more realistic estimate than does the term wanted.

³ In 1977, 85 per cent of women aged 35-39 expected no future births. The same percentage was found for women 38 years of age in 1988. The corresponding figures for women aged 40-44 in 1977, was 92 per cent compared to 98 per cent of women 43 years of age in 1988. All calculations are on the basis of fecund women with coital experiences, including women not having reported whether they expected to have a(nother) child or not.

⁴ In our analyses, we have for technical reasons used the fertility histories from the registers, that means that births from the period before the interview collected in the questionnaire, will be replaced by register information. It is a very limited number of cases with differences between responses and register.

⁵ 14 per cent (FS 77) and 12 per cent (F&O 88) answered "don't know" to the question "Do you expect to have (more) children?"

⁶ Age-specific fertility rates were 6.9 and 0.2 respectively for women 40-44 and 45-49 years in 1998.

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Philipov, D., & Berghammer, C. (2007). behavior as it relates to accident causation, which may vary from one organizational context to another. Other types of unsafe behavior that have received more attention from organizational decision-makers can be found in different forms in accordance with job specifications and expectations. For example, despite convincing evidence about the occurrence of injuries and fatalities, current review. But is it wise to spend so much money on space exploration projects when we have so many problems on Earth? In my opinion, space exploration is very important to mankind. Firstly, satellites are used for radio, television, and other electronic communication. Some people approve of multiculturalism. However, others have a negative attitude to it. The modern world can be called multicultural due to racial, cultural and ethnic diversity. Through the process of globalization and immigration modern society has become a mixture of different nations and cultures. They often feel depressed and unhappy because they are unable or reluctant to connect with the world. I think it is better to face the reality and try to solve your problems and overcome difficulties.