Dissolved families

A prospective longitudinal cohort study of family strain before separation following schoolchildren born in Denmark 1973

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Dissolved families - A prospective longitudinal cohort study of family strain before parental separation following schoolchildren born in Denmark 1973.

Mogens Nygaard Christoffersen, MSc (sociology), Senior Researcher,
The Danish National Institute of Social Research

Abstract

The present study examines the situation in the family preceding a family separation to identify risk factors for family dissolution.

Information in registers covering prospective statistics about health aspects, demographic variables, family violence, self-destructive behaviour, unemployment, and the spousal income ratio was analysed using a discrete-time Cox-model.

The results indicate that mental disorder, substance abuse, and self-destructive and violent behaviour, increase the risk of family separations. However, these high risk factors are not widespread and therefore only contribute to few separations. Unemployment, teenage-motherhood, cohabitation, or having four or more children represent a minor increased risk but, nevertheless, a more widespread risk and, consequently, contribute to several of the family separations. Separation rates are significantly higher in the metropolitan area than elsewhere. About 36 per cent of the family separations can be explained by these risk factors, when standardised for other risk factors.

Mailing address: The Danish National Institute of Social Research
Herluf Trollesgade 11, DK-1052 København K, Denmark
phone (direct): +45 33 48 0883 phone (main): +45 33 48 0800 fax: +45 33 48 08 33,
e-mail: mc@sfi.dk Home page: www.sfi.dk

Some early studies in family instability

Danish, Norwegian and some North-American studies have estimated the proportion of children experiencing a family divorce to be approximately 30 to 40 per cent of all children (Bumpass and Rindfuss 1979, Christoffersen 1992, 1993, 1995, Jensen and Moem 1991, Bumpass and Lu 2000). These estimates are mainly based on life-table models with well-known weaknesses, and longitudinal studies should give a more accurate picture. Here it is shown that about 35 per cent of the children born in 1973 have experienced living with a single parent for a period of time (Christoffersen 1999). The main object of the present study is to answer the question: are there any prior stressors in cases of a family dissolution that are absent in the intact families?

The increasing instability of families has occurred during a period in which respondents declare that 'marriage and the family' are highly appreciated values (Gundelach and Riis 1992), and has been accompanied by an increasing tendency to remarry after divorce. An explanation of this paradox has been that increases in the value of marriage have led to higher expectations of the institution, which have not been fulfilled (Haralambos and Holborn 1996).

Another explanation, which has been suggested for the increasing tendency of family dissolution, is that the stigma of divorce has diminished (Rapoport 1989). New ideologies have supported the individual freedom to choose a partner and to end an intolerable marriage (Goode 1963). Legislation has changed making it easier to divorce. Good financial support has reduced the obstacles to divorce by a system of subsidies to single-parent families. However, it is difficult to explore whether the ideologies are changing the behaviour or vice versa. Glick (1988) argues that the increasing complexities of family patterns have reduced the exercise of social control that is consistent with long-established family norms. Changes of behaviour have been supported by changing material living conditions, where the ideologies have been a consequence of subsequent rationalization or a kind of justification of behavioural changes, which have already taken place. To this must be added that it is difficult to study individual changes of ideology related to changes in divorce behaviour on an individual basis (Jorgensen and Johnson 1980).

Thirdly, it has been suggested that the increased post-war labour demand and the increase in gainfully-employed women have resulted in an added burden on families, where traditional roles and norms result in an increased risk of conflicts caused by incompatible expectations. This new situation has disturbed the power balance and given women expanded scope for action (Scanzoni 1979).

Finally it has been suggested that new burdens on the nuclear families have arisen during the last 50 years when the household is no longer the unit of production (e.g. farming and trade). The ties to kin weaken so that kinship is not able to support the nuclear family undergoing a crisis. Ogburn (1938,1953) argues that industrialism has led to more consideration of expressive aspects and taking less account of families' instrumental facets.

Studies from England, the USA and Denmark show the importance of some structural variables for stabilising marriages. For example unskilled and unemployed men have a

considerably increased divorce-risk compared to salaried workers and correspondingly, men with a low income were more at risk for divorce than men with a high income (Goode 1951, Miao 1974, Lehrer 1988, Glick and Norton 1971, Haralamos and Holborn 1996, Christoffersen 1996, 1997). Divorce is more common in households where financial support from the husband is diminished because of alcohol abuse or unemployment (Bucklin 1930, Ross and Sawhill 1975; Svarer 2001).

Studies find that parental divorce seems to be associated with an increased risk of divorce among their grown-up adolescent (e.g. Lehrer 1988, Woodruff et al. 1972), but this may be a consequence of the fact that low social status, in itself, elevates divorce risks. But Heiss (1972) finds that the intergenerational-transmissions thesis was only partly supported by his data (Blumel 1992). Parental family instability generally explains little of the variation, probably because of intervening variables (Heiss 1972). Instead, it is more commonly found that financial-problems are decisive (e. g. Ross and Sawhill 1975, Cherlin 1979, Coombs and Zumeta 1970).

In accordance with this, studies show that low income, no vocational training, social and economic insecurity, unstable employment, and bad financial administration increase the risk of divorce (Goode, 1951, Williamson 1954, Hillman 1962, Bernard 1966, Udry 1966,1967, Miao 1974, South 1985, White and Rogers 2000, Jalovaara 2001). Registered as disabled has significantly higher rates of divorce in the ensuing few years (Kiernan and Mueller 1999) and they conclude that unemployment, reliance on state benefits and poor economic and somatic well-being may be important stressors in a relationship. Jensen and Smith (1990), and Svarer (2001) find that unemployment is an important factor behind marital instability. However, they find that only the unemployment of the husband has an effect, when they control for other factors such as education, age, presence of children, health, and economic factors.

Correspondingly, studies indicate that low social status increases the risk of divorce. Mirra Komarovsky (1962) argues that the relative failure of the husband as a provider disturbs the reciprocities inherent in conjugal roles (Scanzoni 1970). Husbands deeply rooted in their bread-winner role are particularly sensitive and under stress when unemployed (Komarovsky 1940). If the husband fails to live up to the maintenance ideal, his capability of feeling empathy is reduced (Scanzoni 1968, 1970), while the wives' satisfaction with the marriage is associated with the husband's income and competence to fulfil the role of being a bread-winner (Jorgensen 1979, Berry and Williams 1987). Likewise, some occupations such as employment during non-standard work schedules or long-distance drivers, salesmen, and others who travel have an increased risk of separation (Presser 2000, Haralambos and Holborn 1996). In this connection, the income ratio (that is the ratio between the wife's income per hour and the husband's hourly wage) has been studied. Cherlin (1979) has found that the higher the ratio the higher the risk of divorce, but Oppenheimer (1997) is sceptic about the causal relationship because some studies have found evidence that wives, who believe their marriage is in trouble, may increase their work effort.

Some studies find that wives' economic independence and rising employment increase marital instability (e.g. Bracher et al 1993), while this has been disputed in other findings (White and Rogers 2000) and Valerie Kincade Oppenheimer (1997) finds in her review that support for the hypothesis is found only in cross-sectional studies or aggregate-level studies.

Teenage-mothers or marriage before the age of 20 is one of several other exposed groups in additional danger of a divorce, according to several studies (Raschke 1987, Lehrer 1988, Blumel 1992, Bracher et al 1993, Haskey 1996). Earlier studies showed that premarital pregnancies were associated with a higher divorce rate, despite one third of all births at that time being out of wedlock (Glick and Norton 1979*, Raschke 1987). Johnson and Johnson (1980) also find that the unplanned pregnancies are often associated with a higher divorce rate. Evidently, the nature of a consensual union is different to that of a marriage; however, the study of non-marital union dissolution has received little attention (Trussell et al. 1992). A common finding is that the insecurity and dissolution risks are significantly higher in consensual unions compared to marriages, also when children are present, and when age is taken into consideration (Qvist 1998), presumably because the less committed do not marry or postpone marriage; consequently, they have a higher dissolution risk (Hoem and Hoem 1992). Correspondingly, shotgun weddings have decreased (McRae 1999).

Only a few studies have included more debilitating characteristics in the investigation of social-psychological variables, such as mental illness and crime. Renne (1970*) finds that depression and alcoholism increases the risk of unhappy marriages. Studies find significant associations between unhappily married/divorced and mental illness, depression, substance abuse, neurotic suffering, and other personal disorder (Renne 1971, Woodruff et al. 1972, Briscoe et al. 1973, Rogers et al. 1970, Zaleski 1981). Some studies find that stress precedes depression and divorce (Vega et al. 1988).

Children seem to stabilise parental marriage and families without children are, thus, relatively more at risk of separation. Many marriages now include families with shared children, so divorces increasingly include separation between children and one of the parents. Hoem and Hoem (1992) find that each additional child should reduce the risk of dissolution, at least for families with up to three children. Families with four children were so few in the data set of Hoem and Hoem that they censored respondents on the arrival of the fourth child. Alternatively, some studies find that families with five or more children are more prone to separation (Thornton 1977, Cherlin 1977).

Cross-cultural issues have also been considered. Several studies found that relationships established across social and cultural classes have a higher risk of being disharmonious and result in divorce. Accordingly, couples divergent in age, religion and extreme differences in education are associated with a higher instability or unhappy marriages (Baber 1937, Roth and Peck 1951, Biesanz and Smith 1951, Murstein 1961, Catell and Nesselroade 1967, Scanzoni 1968, Bumpass and Sweet 1972, Thornes and Collard 1979*). Only a few studies take assortative mating into account and the process' influence on marital stability. Becker (1981) analyses divorces using economic models of assortative mating in marriage markets. He argues that divorce is one of the consequences of participants' highly imperfect information, and therefore most divorces occur early in marriages. But changes in the environment may also promote divorce or family dissolutions. Reviewing American studies Raschke (1987) concludes that urban areas have the highest divorce rates, because of diminished social integration, a sense of isolation, anonymity, loss of social support from kin and community. Michael Svarer (2001) argues that living in the Copenhagen metropolitan area may lead a partner into temptation, and this may be the explanation why divorce rates are significantly higher in metropolitan areas than elsewhere, also when other risk factors (e.g. unemployment,

early motherhood) are taken into account.

These findings form the basis of the present study, which includes most of the noted factors: structural or selective factors (e.g. unemployment for both parents, income ratio between the parents) and traditional demographic factors (e.g. teenage-motherhood, number of children, age of the child, and cohabiting) and health (e.g. mental illness, depression, neurotic suffering, personality disorder, and alcoholism), and social conflicts (e.g. violence in the families, self destructive behaviour, and crime). Likewise, environmental indicators e.g. living in the metropolitan area are included, too.

Numerous studies have found that compared with married persons, divorced persons tend to have lower levels of psychological well-being, health problems, more economic hardship, etc. (Bahr 2001), but these findings are mostly based on cross-sectional studies. Therefore social scientists offer two competitive explanations for these differences. The "selection explanation" suggests that poorly functioning individuals have a high risk of divorce or the risk factors which have caused the divorce still constitute a heavy burden after the separation. The alternative "stress explanation" is that the process of divorce lowers people's well-being (Bahr 2001). However, it may not be a choice between two alternatives, as both explanations may be effective. Disentangling cause and effect with these time-changing variables is a difficult task: panel data or longitudinal cohort analysis would be helpful for studying these types of issues (Lehrer 1988).

The Danish trends in family separations 1980-1999

The divorce rate has risen considerably during the past century. Divorce rates give an increasingly biased picture of the children's risks of family separation: divorce statistics give any information about the number (and age) of children involved, nor do they consider that about half of all new born children are born into cohabiting families. Many of these families have been legalised by a contract of marriage at a later stage or have been dissolved and consequently not included in divorce statistics (Christoffersen 1995).

The present study utilizes the Danish Central Population Register (CPR) and includes information which connects all children to their parents whether they are married or not. In the two birth cohorts of children born in 1966 and 1973 about 30 per cent and 35 per cent, respectively, were separated from their parents during adolescence (Christoffersen 1999). This comparison shows an increasing trend, but this method is unable to explain the resent trends of family separations in Denmark. Therefore, Danish trends in family separations during the last two decades were studied on the basis of life-table analysis using a pilot-series of single calendar-year experiences. On the basis of information of total samples, it was calculated how many of the children aged 0-17 years, were living together with both parents on the first of January and how many were living with a single parent 12 months later having experienced a separation during the following 12 months, because of parents' separation, or emigration, or because of the death of a parent. The life-tables were calculated on the basis of age-specific probabilities of separation for each of the years 1980, 1989 and 1999. The number of children included in these samples was respectively 1.01 million, 0.81 million, and 0.81 million (figure 1).

Figure 1.1. Percentage of children living with both parents. Calculated on the basis of separation frequencies for each age group. 1980, 1989 and 1999.

Age of children
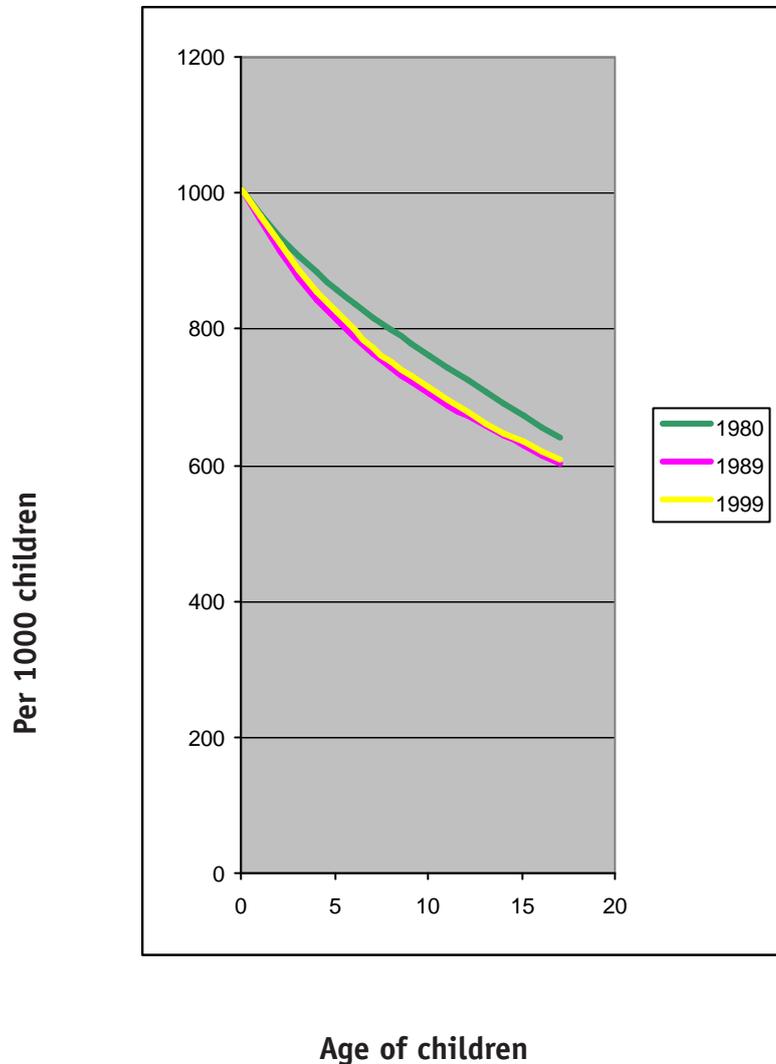
These life-table analyses show that family separation probability increased during the period 1980 to 1989, but then stabilised during the 1990s. Family separation probabilities have reduced slightly from 1989 to 1999.

The overall picture for the years under study is that family separation probabilities are higher for young children than older children. Half of the children experiencing a family separation during childhood would have this experience before the age of six according to the life-table model based on the calculations from both 1989 and 1999. Therefore, in the following analysis the age of the child is taken into account by standardising the estimates of the models by age of the child.

In evaluating these life-tables, it must be noted that some of these separations are caused by death of one parent (or emigration of a parent). From a previous survey (Hansen 1986) we know that about 4.4 per cent of the 30-39-year-olds have experienced the death of one parent during their childhood. These results are supported by the present study following the 1973-birth-cohort. Out of 69,623 children born in 1973, 1,947 children followed from the age of six to eighteen experienced the death of a parent. As a consequence of this pilot study, children whose father or mother died were censored from the subsequent analysis in the present study.

Themes and theories

In the present study it was decided to single out family separations involving children, because these families have some substantially different family-relationships compared to childless families irrespective of whether the parents are married or cohabiting (Qvist 1998).

The social relations between parents and their children differ from any other known social relation in as much as while this relation is experienced as a lifelong relationship consciously or subconsciously, this everlasting relationship gives an identity to both the child and the parent. When a child wonders, who he or she is, the parents may form part of the answer.

Consequences and reactions of children's separation from their parents have been a theme in many research studies. The theoretical and empirical work of Bowlby (1951) studying young children's parental attachment indicates that it is essential to children to have a warm, intimate and continuous relationship to their parents. Even though the processes may be both genetic and environmental, for Bowlby the most important was the social relation to the parents which made it possible to understand the observed dramatic response to the separation from the parents. Reviewing the literature Bahr (2001) finds that children of divorced parents score lower on a variety of measures of well-being.

The purpose of the present project is to examine the situation in the family preceding family separation. Furthermore, the project should be seen in connection with other studies examining the consequences of family-separation. This is why here study focus is on the actual separation of the parents i.e. when they move to a separate address according to the register.

Here it is assumed that causes of family separation in the beginning of childhood, when children are younger than six, may differ from separation at a later stage of family cycles. It is the aim to study whether families with schoolchildren or adolescents living at home aged six to eighteen-years-old are more prone to experience a separation if the families are exposed to some selected strains or liabilities. The burdens which may precede the separation are: unemployment, lack of vocational training, the spouse's income-ratio, substance abuse, violence, imprisonment, suicidal behaviour, mental illness (e.g. neurotic suffering, depression, personality disorder admitted to hospitals).

Traditional demographic variables are also included in the models such as living in Copenhagen metropolitan area, having more than 3 children, cohabiting, or married couples,

also including age of the mother (teenage-motherhood), age of the child, and age-differences between the parents (more than 15 years).

It is the purpose of the study to find the most influential factors among the traditional demographic variables in competition with structural factors, socio-economic, and social-psychological factors within the nuclear family, which statistically can predict a family-separation the following year.

Data sources and methods

Some of the studies mentioned earlier are based on interviews with divorced families. Such retrospective surveys can have 'recall bias', when the divorced parties are interviewed about their views on the causes of the divorce and other sensitive questions. One of the most obvious problems is that under such aggravated circumstances the parties will be disposed to give socially acceptable reasons for their own behaviour and be disposed to blame the other party. Furthermore, it may be difficult for the parties to be objective. Additionally, a large part of these studies are based on cross-sectional data instead of longitudinal data which are more suitable for prediction of who will experience a family separation during their late childhood or adolescence.

The main object of the present study is to answer the question: were there any prior stressors in case of a family dissolution, but absent in the intact families? The purpose of the present project is to study the situation in the family preceding the family separation.

To study the situation in the family preceding the family separation, information about the mentioned risk factors was gathered prospectively for a total cohort, but the present study is limited to families with children born in 1973, who had remained together until the child had reached the age of six. An overall observation is that the highest separation rate is found in the beginning of adolescence (Christoffersen 1992, 1993, 1995). In this processes it is assumed that the more robust relationships have a longer duration and therefore the length of the family relations could be the basis of this fact, so that the disadvantaged families may be selected, omitting the more robust families.

Here it was therefore decided to single out family separations involving children, because these families have a substantially different family-relationship whether the parents are married or cohabiting. The study includes all the Danish children born in 1973 (N=69,623), and includes information about all children who had experienced family separation between the years 1979 and 1991, or when the children were six to eighteen years old (N=10,781). Therefore it should be noted, that the families are studied for the period when children are six to eighteen years old during a time with high and growing unemployment in Denmark.

Whether their parents are living together, married, or not, the personal identity number was used to link the children and their biological parents to information in 15 annual registers. Subsequently, the database had been made anonymous by deleting the identity numbers; consequently, new information could not be added to the database.

The statistical method used is recommended by statisticians Allison (1982) and demographers

as Hoem and Hoem (1992) to analyse event histories. The applied regression-analysis described by Hosmer and Lemeshow (1989), and Breslow and Day (1980, 1987). Breslow (1992) describes this discrete-time Cox modelling of a longitudinal study and the demographers Arjas and Kangas (1992) have demonstrated the use of this discrete-time method in demographic longitudinal studies of event histories according to Allison (1982).

The available event history data contains information on events that fell within a calendar year during 1979 until 1991. When the discrete time unit is a calendar year, it is excluded to use continuous-time methods, since more than one individual experience an event in the same time interval. The problem will, therefore, be covered by discrete-time methods, which allows estimation of parameters in the model by treating each individual history as a set of independent observations. Benefit can be gained from earlier findings where it has been shown that the Maximum Likelihood estimator can be obtained by treating all the time units for all individuals as though they were independent (Allison 1982).

Individuals' event history is broken up into a set of discrete time units in which an event either did or did not occur. Each individual is observed until time **t**, at which point an event occurs or the observation is censored either because of emigration, death, or the individual is lost for observation for other reasons. Consequently, families were excluded from the case group and controls after the first separation, or if the child or one of the parents had died, or the child in question had emigrated. Pooling the non-censored years of all individuals, the controls made up 601,920 person-years, while the number of events was 10,781 first-time family separations.

A most popular choice is the logistic regression function which is readily understood and methodologically unsophisticated according to Paul D. Allison (1982). In the notation for the model it is assumed that time takes only positive integers values ($t=1,2,3,,,,$) and we examine n independent individuals ($i=1,2,3,,,,n$) while the observed explanatory variables x_{it} may take on different values at different discrete times. P_{it} expresses the conditional probability that an event occurs at time t, given that it has not already occurred. α_t is a set of constants for each calendar year. This logistic regression function specifies how the hazard rate depends on time and the explanatory variables can be written in logit form:

$$\log \frac{P_{it}}{1 - P_{it}} = \alpha_t + \beta x_{it}$$

The study analyses in what way the family situation, prior to the family separation differs from the controls. The cohort data were analysed by means of logistic regression to isolate the potential influence from exposed risk factors, beta-coefficients. The model is based on the proportional hazards model, so called, because they assume that the ratio of the hazards rates for any two individuals at any point in time is a constant over time.

A dummy variable for each year under observation is created to estimate the parameters (alpha). Since all individuals are born in 1973, this constant also includes information on age and therefore estimation of beta-parameters is taken age into account.

The log-likelihood function L of the data may thus be written as,

$$\log L = \sum_{i=1}^{n} \sum_{j=1}^{t_i} y_{it} \log\{\frac{P_{ij}}{1 - P_{ij}}\} + \sum_{i=1}^{n} \sum_{j=1}^{t_i} \log(1 - P_{ij})$$

while y_{it} is a dummy variable equal to 1 if a person experiences a family separation at time t, otherwise zero, according to Allison (1982). Maximum Likelihood estimators for the regression models are then calculated on the basis of pooling all the time units over all individuals. Controls were constituted by person-years under risk of separation in the chosen period from six to eighteen years old (N= 601,920 person-years).

The present analysis identifies relevant risk factors and describes the strength of different risk factors which could be represented by the estimates of the beta-parameters, or the odds ratio, which is more easily understood. The odds ratio is the fraction between the odds for family separation if exposed to a risk factor and the odds, if non-exposure. The interpretation of the odds ratio is approximately the relative risk, for rare risk factors. To estimate the uncertainty of the estimated odds ratios, the 95%-limits are also calculated. In the case of rare incidents or colinearity, the numerical problems will eventually manifest themselves by extraordinary large estimated standard errors (Hosmer and Lemeshow 1989), and therefore consequently by extraordinary large range between the 95%-limits of estimated odds ratio (table 1).

The over all exposure of risk factors among children and adolescents is named (P) in table 1. To evaluate the risk-factors contribution to the number of separated children and adolescents, attributable fractions (A.F.) are calculated for each risk factor in the final model according to Greenland (1998), Greenland and Drescher (1993). The attributable fractions (A.F.) are seen as the reduction in incidence that would be achieved if the population had been entirely unexposed, compared with the current exposure pattern.

In the literature it has been recommended to use general population samples as the control group, because this gives a good standard of reference and allows generalization of the results (Breslow and Day 1980). Only few studies have followed national randomised samples or total birth cohorts usually because of costs of production. In general, it is difficult to obtain data based on prospective data information as is the case here following the period 1979 to 1991. By following the risk factors prior to the adolescents' experience of separation, this method offers better opportunities than other survey methods to judge the consequences.

Personal stressors such as mental health, increase the risk significantly of family dissolutions. Preliminary analysis of this data indicates that mental illness and substance abuse are highly correlated and therefore difficult to disentangle from each other. The large number of cases in the present study of separated families have made it possible to analyse these factors separately to the extent that admission to a psychiatric ward is a reliable indicator of mental disorder and the indicator of substance abuse is adequate. Alcohol abuse is classified on the basis of the following diagnoses in connection with hospitals admissions: Alcohol psychosis, alcoholism, varicose veins of other sites, cirrhosis of liver (alcoholic), chromic pancreatitis (alcoholic), delirium, and finally, accidental poisoning by alcohol.

A high risk of family separation in otherwise stable families is parental mental illness according to hospitals admissions (e.g. psychoses, neurotic or personality disorder). Only few of the fathers' neurotic disorders were disclosed in the national psychiatric register, but some of the fathers were instead registered in the national inpatient register with symptoms in cardiovascular systems (e.g. ICD-8: 782.09-29 chest pain, irregular heart beat or 782.50-59 loss of consciousness). In the present study these symptoms are classed with the term 'neurotic disorder' together with traditional anxiety neuroses (300.09), neurotic depression (300.49), or unspecified neurosis (300.99).

Results

Hospitalisation due to various mental illnesses significantly elevates the risk of later separation; however, only a few per cent of the parents actually suffered from a mental illness to such an extent that they were hospitalised. This means that less than one per cent of the separations can be attributed to hospitalised mental illness if standardised for other risk factors. Drug addiction, or more commonly, alcohol abuse accounted for at about three per cent of family separations in these otherwise stable families who have remained together for at least six years (Table 1).

Table 1.
Risk factors for family separation. Children born in 1973 (age 6 to 18 years old).

	No. of cases 10781	P % among controls	Odds ratio	95% limits	Odds Ratio	95% limits	AF %
			Single risk factors one by one:		***Stepwise model:***		
Mental health, crime and violence							*6.1*
Father is psychotic [III]	92	0.18	5.0	4.1-6.3	1.6	1.3-2.1	0.1
Mother is psychotic [III]	81	0.15	4.1	3.2-5.1	2.0	1.6-2.5	0.1
Father is neurotic [III]	23	0.09	3.9	2.5-5.9			
Mother is neurotic [III]	51	0.07	3.7	2.8-4.9	1.5	1.1-2.0	0.0
Father has personality disorder [III]	129	0.23	5.7	4.8-6.9	2.1	1.7-2.5	0.3
Mother has personality disorder [III]	136	0.26	3.7	3.1-4.3	1.8	1.4-2.1	0.2
Father drug abuse [III]	27	0.03	4.1	2.7-6.0			
Mother drug abuse [III]	31	0.05	4.1	2.9-6.0			
Father alcohol abuse [III]	607	1.11	5.2	4.7-5.6	2.8	2.5-3.1	2.0
Mother alcohol abuse [III]	286	0.58	4.6	4.1-5.2	2.1	1.9-2.5	0.6
Father convicted for violence [II]	155	0.42	3.4	2.9-4.1	1.4	1.2-1.7	0.2
Mother convicted for violence [II]	11	0.03	2.7	1.5-4.9			
Father convicted/sexual crime [II]	26	0.12	2.3	1.6-3.4			
Mother convicted/sexual crime [II]	1	0.00					
Father has peptic ulcer [II]	185	1.29	1.4	1.2-1.7			
Mother has peptic ulcer [II]	96	0.53	1.3	1.1-1.6			
Father has neurotic disorder [II]	84	0.55	1.7	1.4-2.1	1.3	1.0-1.6	0.2
Mother has neurotic disorder [II]	110	0.48	2.0	1.7-2.4			
Father has attempted suicide [II]	111	0.10	7.7	6.3-9.4	2.2	1.7-2.7	0.1
Mother has attempted suicide [II]	164	0.28	6.0	5.1-7.0	2.9	2.4-3.5	0.5
Father has been sentenced [II]	480	1.24	3.6	3.3-4.0	2.0	1.8-2.3	1.2
Mother has been sentenced [II]	45	0.12	3.3	2.4-4.4			
Father battered [II]	62	0.18	3.8	2.9-4.9	1.5	1.2-2.0	0.1
Mother battered [II]	39	0.05	6.5	4.7-9.1	2.3	1.6-3.4	0.1
Child battered [III]	132	0.70	1.9	1.6-2.2	1.5	1.2-1.7	0.3

Demographic parameters:							21.0
Income Ratio > 1.05 [I]	2707	22.64	1.2	1.2-1.3	1.2	1.1-1.2	4.3
Metropolitan area [I]	2886	18.13	1.7	1.6-1.8	1.7	1.6-1.8	11.3
Age diff. > 15 years [III]	153	0.83	1.5	1.3-1.8	1.2	1.1-1.5	0.2
Teenage-mother [III]	707	2.83	2.2	2.0-2.3	1.6	1.5-1.7	1.7
More than 3 children [I]	1495	12.69	1.2	1.1-1.2	1.1	1.0-1.2	1.3
Cohabitation [I]	630	2.02	3.0	2.7-3.2	2.2	2.0-2.4	2.4
Education and employment:							**8.9**
Father no vocational training [III]	5320	49.85	1.0	0.9-1.0			
Mother no vocational training [III]	5413	49.99	1.0	1.0-1.0			
Father unemployed >21 weeks [I]	1152	4.31	2.6	2.5-2.8	1.7	1.6-1.8	2.9
Mother unemployed >21 weeks [I]	1626	6.99	2.3	2.2-2.4	1.9	1.8-2.0	5.9

Note: [I] *Risk factor the previous year.* [II] *Risk factor at least one of the previous years.* [III] *Risk factor for all the years under investigation. For the first time 10,781 families were separated while the reference child was between 6 and 18 years old. Controls were 601,920 person-years. Test of the model: Hosmer and Lemeshow (P=0.0001). The mentioned disadvantages included in the stepwise model may count for about 36 per cent of the separations according to estimated attributable fractions (A.F.).*

Self-destructive behaviour (e.g. suicide attempts) or violence in the family (e.g. parents convicted for a violent crime, or family members were victims of violence according to hospital admissions) increase the risk of family separation, as may be expected. Likewise, these relatively rare incidences only count for about one per cent of the family separations, when standardised for other risk factors. In comparison, the father being sentenced account for 1.2 per cent of the family separations.

Traditionally, demographic factors e.g. age differences more than 15 years (odds ratio 1.2), teenage-motherhood (odds ratio 1.6), families with more than 3 children (odds ratio 1.1) and cohabitation (odds ratio 2.2) have all significantly increased risks for family separations even when age of the child and other factors are taken into account. These demographic risk factors accounted for about 5 per cent of the family separations. Living in the Copenhagen metropolitan area (odds ratio: 1.7) also increased the risk for family separation significantly.

Long term unemployment (more than 21 weeks in a calendar year), and income ratio more than 1.05 (the ratio between mother's yearly income and father's yearly income) display a slightly increased risk the following year. Although odds ratio were less than 2 these stressors are widespread risks for family separation and therefore count for about 13 per cent of the separations the following year, even if standardized for other risk factors.

Discussion

The question of causes of family dissolution is composed of both environing disadvantage and personal stresses (Thornes and Collard 1979), provide that divorce behaviour is affected by macro-social system and personal history in a complex mixture impossible to disentangle. Reviewing studies of determinants of divorce Lynn K. White (1990) conclude that there remains a need to monitor demographic and life-course trends: Why are those with remarriage, low income, premarital births, young age at marriage, more likely to divorce? And how do these factors relate to characteristics such as adultery, alcoholism, physical and emotional abuse, and incompatibility?

In total the studied risk-factors can only account for about 36 per cent of the family separations, it seems as if social exclusion or stigmatisation of one of the parents, together with conflicts caused by bad health, crime or unemployment may play a role in explaining family separations. Therefore, several other stressors not included in the study may be of great importance to answer the question, who separates? It may be argued that this is a kind of question which cannot be given a full and comprehensive explanation. Some separations, possibly many, always remain inexplicably and chaotic.

Since only few, if any, other longitudinal studies of family dissolution, have estimated the attributable fractions, it is beset with difficulties to evaluate the size of the estimated attributable fraction. Estimation of the attributable fraction is a difficult task because it involves a certain danger of contamination between regressors and the dependent variable. For example, violent behaviour could be included as an explanatory variable, while also being an integral part of the separation process. Likewise, information based on interviews with the separated parties may lead to recall bias, and in both cases the estimated attributable fractions would be over-rated.

It is extremely difficult to obtain objective reports on mental illness, substance abuse, violence in the family, and crime by personal interview with the separated parties. The present study solves some of these methodological problems by records from hospital admissions and criminal records, but new shortcomings are inseparably linked to the chosen method. Indicators on all the mentioned stressors only cover those which happen to be included in registers. This means that mental illnesses, abuse, violence, crime, etc. will be under-represented in the present study. Nevertheless, given the high rates of family dissolutions, it seems a reasonable conclusion that only a minor part of family dissolutions can be explained by deviant behaviour.

Unemployment may contribute to social exclusion, while hospitalisation caused by mental disorder, or substance abuse may also contribute to a stigmatisation, which can be a heavy burden for family cohesion, even in stable families who have been together for more than six years.

Traditionally demographic variables give some explanation of risk of family separation. While additional children may help prevent separation, the present study also found that more than three children increase the future risk for family separation, when standardised for other risk factors. This is in accordance with previous findings.

Several studies find an increased number of consensual unions instead of marriages. Contrary to the present study, only two per cent were not married the year before the separation. The relatively few consensual unions in the population under study is a consequence of a sorting

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process, because most of the cohabiting families dissolve or have married before the child in focus become six-years-old. However, cohabiting still remains as a risk for dissolution in these families, as is found in several other studies.

Another vulnerable group is the teenage-mothers. Early motherhood usually is associated with short schooling, no vocational training, dependency on social benefits, low income, or low-prestige jobs (Hayes 1987). Women who have children at an early age have few chances to acquire education or vocational training at a later date. Danish studies show that the younger the mother the less the chance of completing an education (Knudsen, 1993). Thus, the present study confirms the findings of earlier studies that teenage-mothers are exposed to an additional danger of separation, also when standardised for other causes (e.g. unemployment), which are usually associated with early pregnancies.

It has been argued that wives' participation in the labour market has a positive effect on the risk of separation because working outside the home increases the chances of meeting alternative partners, having one's own earnings, and the work load may bring stress to marriage (Kiernan and Mueller 1999). The present study does not support these assumptions. Instead the findings support the assumption that mother's unemployment may lead to financial stress and psychological stress, and therefore be a heavy burden on the family cohesion: this consequently increases the risk of family separation. Contrary to the general expectation, the increasing number of gainfully employed women cannot explain family separations, because it is not the mother's employment, but the mother's unemployment that is significantly associated with subsequent separation, other risk factors taken into account. Similar findings have been reported from Finland (Jalovaara 2001).

The assumption that wives are more prone to divorce if financial support from the husband is diminished because of drunkenness, violence or unemployment, is still supported by the results, and the income ratio between the mother's income and the father's income still explains some of the divorces. These results confirm the impression of the traditional family pattern. The mother's unemployment, violence and alcohol abuse are also associated with a subsequent separation. These results may be regarded as trends in contemporary patterns of symmetrical families.

The association between unemployment and marital separation is not an entirely novel finding. This has been demonstrated by Scandinavian studies (Jones 1988, Sørensen 1984, Jensen and Smith 1990, Jalovaara 2001) and other studies (e.g. Komarovsky 1940, Miao 1974, White and Rogers 2000). Human and social problems seem to be related to the extent of unemployment (Christoffersen 2000) and consequently result in difficulties when the consequences of unemployment should be disentangled from other disadvantages. While consistent findings that husband's unemployment is related to divorce (Sørensen 1984, Bracher et al 1993), the present study describe wives' unemployment and the risk of family dissolution, too.

The present study isolates father's unemployment and mother's unemployment from a variety of well-known characteristics of divorced families such as substance abuse, low education, young age at marriage, more than 3 children, living in the Metropolitan area, depression, and bad health. On the basis of these findings, it is suggested that unemployment degrades and humiliates both parents, and puts a considerable strain on their relations and therefore increases the risk for family separation in otherwise stable families, who had been together for several years.

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It must therefore be expected that increased unemployment, and financial stress on the families may be lead to higher rates of separation. Consequently, an idea, which immediately suggests itself, is that the decreased unemployment rate during the end of the 1990s may have contributed to the stabilised trend of separations. Nevertheless, it should be noted that the families studied here have children aged six to eighteen years old in a time with high and growing unemployment in Denmark (1979 to 1991). These results cannot be generalised to other periods without further investigations.

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