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Unemployment, marriage, and cohabitation in France

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Abstract

This paper examines the impact of insecure professional status on union formation using the 1994 French Family and Fertility Survey. We show that, for both women and men, the first job generally comes before the first union. In this framework, we consider how being unemployed or having an insecure job delays couple formation and worsens the quality of the potential match. Studying the couple's investments (marriage, children) and the duration of the couple tests the quality of this match. The results emphasize that unemployment is associated with insecurity in both the professional and personal realms. © 2001 Elsevier Science Inc. All rights reserved.

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1. Introduction

The aim of this paper is to analyze the impact of unemployment on the formation of couples. Extensive research on family formation in developed countries has shown that the transition to adulthood is marked by a sequence of life-course events such as schooling completion, departure from parents' home, and first cohabitation. It is impossible to study one of these events without taking the others into account, as the beginning of adult life is a complex process (Leridon & Villeneuve-Gokalp, 1994). What happens when one is constrained by economic circumstances? We consider in particular whether and how being unemployed handicaps couple formation.

Traditionally, only men had to be employed in order to establish a couple (Oppenheimer,

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Kalmijn & Lim, 1997) but two trends have probably changed this situation. First, the increase in women's labor force participation renders the man's income less essential. Second, the recent rise in unemployment, especially for younger people, may have reversed the traditional situation. Couple formation can be considered as a kind of insurance against poverty, for instance if one of the partners is unemployed (Weiss, 1997). There is no evidence showing the immediate impact of a sudden job loss on well-established unions (Solaz, 1998), but entering a couple while unemployed shortens the couple's duration. We therefore ask if an individual's investment in the couple depends on the insecurity of their job, and whether this alters match quality. Is an unemployed single looking for a partner less demanding in the marital matching process?

The first part of the paper focuses on interactions between first job and first couple. We then present a theoretical model of couple formation when one of the partners is unemployed. The last two sections are empirical: section three presents a duration analysis of the impact of unemployment on couple formation, while match quality is tested via couples' investments (marriage, fertility) and match stability.

Our study uses retrospective data from the French Fertility and Family Survey conducted by INED and INSEE in 1994. About 5000 people aged between 20 and 49 were interviewed about their family and work histories. This sample was part of the third wave of a three-wave survey on employment carried out by INSEE, in 1992, 1993 and 1994. As marriage is no longer the predominant lifestyle for couples, cohabitation having gradually become more commonplace and compatible with long-term commitment and children, we focus on couple formation and not only on marriage.

2. First job and first couple: causality

Preliminary analysis of our sample shows that for both women and men, the first job tends to precede the first cohabitation (see Figs. 1 and 2): this holds for 82% of men and 67% of women. We will test whether this comes about because having a job is a necessary precursor to forming a couple.

While this study concentrates on the impact of unemployment on family formation, we must first establish the exogeneity of the independent variable. First job and first couple can mutually interact, the duration of unemployment not being independent of marital status: Nickell (1979) shows that married people find jobs faster than do single people.

In this perspective, we test for interactions between first job and first couple. Using the Courgeau-Lelievre (1989) method, we build a model that allows us to test the strength of the causal links between these two events. If the hazard associated with one of the events is independent of the second event then there is no interaction. We first compare the probability of being in a couple according to employment status (working/not working). We then evaluate the probability of working according to couple status.

Hoem's test (Hoem, 1976) checks for the equality of hazards (obtained by an actuarial specification), providing information about the stochastic dependence between first couple and first job without assuming beforehand that there is reciprocity. We can thus determine which of these events influences the other in probability terms.

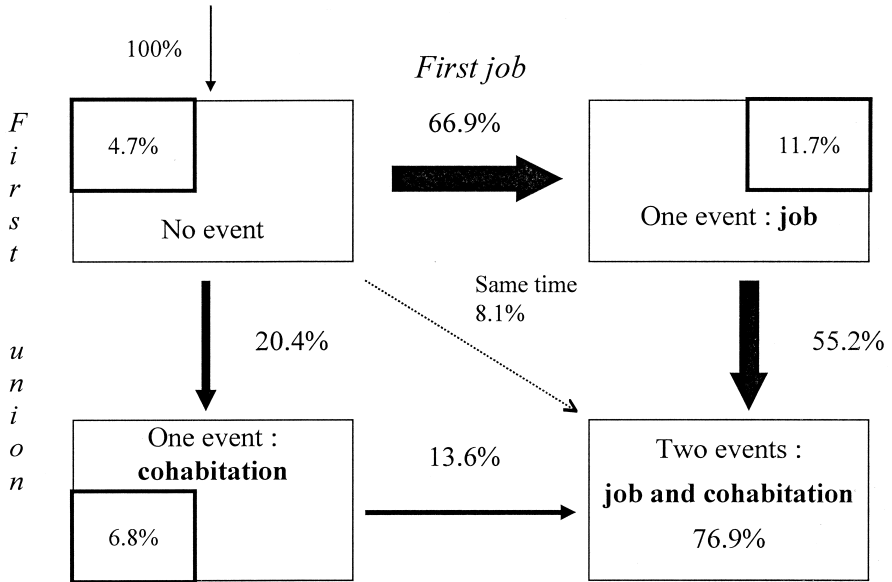


Fig. 1. Women's life stages

The results (significant at the 5% level) show unidirectional dependence: first job influences first union, whereas first union does not influence first job. As a result, we concentrate on the impact of unemployment on family formation.

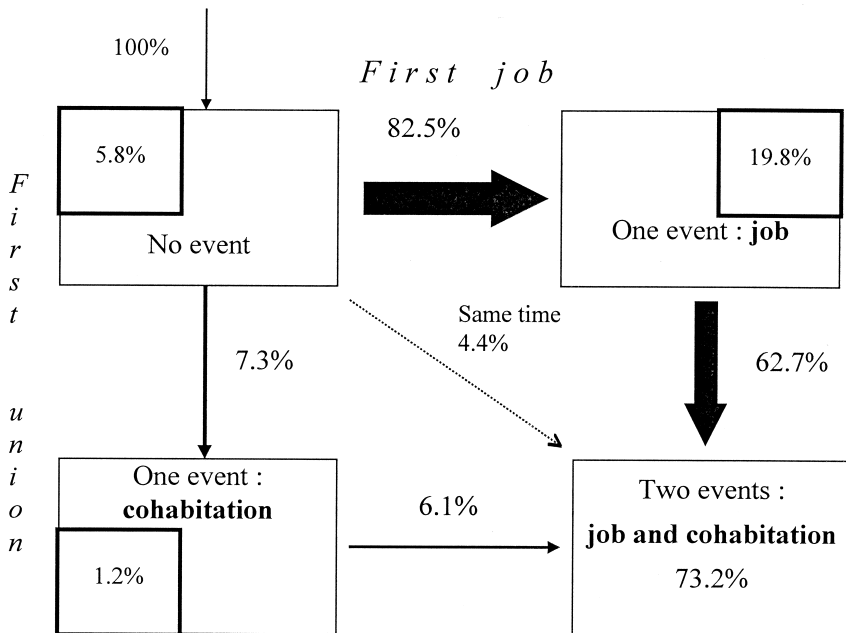


Fig. 2. Men's life stages

3. The theoretical model

3.1. General framework

Our starting point in the analysis of unemployment effects on match quality and couple formation is the theory of marriage matching and search (see Weiss, 1997 for an excellent survey). In this paper we do not focus on the domestic work market, with fixed wages for spouses' work (Grossbard-Shechtman, 1993). In France, the bargaining model seems to provide a better description of couples' behavior.

There are many similarities between job search (see Mortensen's seminal 1970 paper) and search for a partner (Mortensen, 1988). This theory was developed by Keeley (1979), and Weiss notes that "In both cases, the forces of competition determine the assignment and the associated division of the proceeds between partners."

In job search theory, the individual accepts a job offer if his or her reservation wage is lower than the job market offer. On the couple market, the individual accepts an offer of cohabitation if his "reservation output" is below that offered. The single person then classifies his or her potential partners according to the couple's joint output. We call this marital output, for individual i with partner j , z_{ij} . The reservation output is the long-term utility associated with remaining single, with the associated opportunity of finding a more "suitable" partner.

3.1.1. Output and matching

The theory of marriage (Becker, 1973, Grossbard-Shechtman, 1984, and Weiss, 1997) emphasizes the advantages of being in a couple. The purpose of a union is to raise the partner's utility by joint production and joint consumption. In the sphere of market goods, emphasis is laid on the gains from the division of labor (one spouse specializing in household work; Becker 1973), or from collective goods (a common home generates economies of scale). The economic approach extends the scope of rational decisions to items such as the quantity and quality of children, affection and love, all "goods and services" that have almost no equivalent on the consumption market. In the 1980s, research has looked at the benefits of couple formation in terms of transaction costs (Ben-Porath, 1980), monitoring, enforcement, sustenance guaranty (Pollak, 1985), risk-pooling (Kotlikoff & Spivak, 1981), or extending credit and co-ordination of investment in human capital.

With respect to each of these criteria there is an optimal matching assignment (Becker, 1991). The marriage market maximizes the general gain from matching. For instance, the division of labor leads to a large gap between a man's wages and those of his spouse, since a high-wage man is more attractive to a low-wage woman who will specialize in housework. On the contrary, when it comes to shared housing, leisure and children, there are benefits to homogamy. If risk sharing motivates couple formation, this leads to diversification of occupational fields.

As production forms have changed, with the development of wage-earning employment, markets for goods and services and the welfare state, so has the purpose of forming a couple. Ben-Porath (1980) shows how the family has gradually been deprived of its economic role of (autarchic) provider of labor and insurance (which it had in traditional societies). In the

first half of this century in the developed world, the breadwinner-and-housewife model dominated. In France, the division of labor continued to have an influence on matching until the 1960s (70% of married women were housewives) and “Economic hypogamy” of spouses¹ (Girard, 1964) prevailed. As a result, mechanically, the extreme categories were disadvantaged in the marriage market. On the one hand, female executives mostly stayed single (Desplanques, 1985) because of the lack of higher position men, and, on the other hand, celibacy was high among male unqualified workers who did not find a less-qualified woman. Starting from the middle of the 1960s, there has been a rapid increase in the labor force participation of women, for example, due to an increase in female education and in the demand for work in the service sectors of industrialized societies (Gronau, 1977, Lemmenicier & Levy-Garboua, 1980, Blanchet, Ekert-Jaffé, Lelièvre & Kempeneers, 1991). At present, given the growth of the market sector, due to large productivity gains, the family cannot compete in the production of most household goods (Ekert & Sofer, 1996). Consequently, for both women and men, spouse’s endowments are now mostly measured according to earning capacity, rather than domestic capacity. The main union gains are children and love, which have almost no substitute in the market. As domestic production and specialization lost their value, homogamy² prevailed.

3.1.2. Couples’ output with unemployment

In France, in the 1980s and 1990s, the rise of unemployment, along with less welfare spending, led to the development of extreme poverty, especially among young people (Ekert, Darbonville & Wittwer, 1995). This extreme poverty restricts access to the *benefits* of the goods and services market, and we return to a more traditional model of household behavior. In these circumstances, *the total union output falls dramatically*. The union endowment of an unemployed person consists in his or her household autarchic work (which no longer competes with market production) and his or her *potential* wages on the labor market, the value of which is discounted by the future depreciation rate and the risk of not finding a job.

There are two categories of unemployed. In some cases, unemployment is a transition preceding a well-paying job, as is the case for graduates from famous universities or highly-qualified professionals. Their potential mates can be persuaded that this unemployment is only temporary and does not indicate a serious handicap. Alternatively, unemployment may persist and be associated with poverty and low purchasing power. With high unemployment rates and low unemployment benefits, the micro society of the unemployed may return to the type of goods market that prevailed in the early 1930s. Living support is based on activities outside market production (housework or moonlighting in housing services), spouses take advantage of the division of labor and of sharing housing and material goods. Moreover, in this case, the growing uncertainty of unemployment income increases the family’s role as insurance provider. Both spouses try to be involved in the labor market in order to increase the income guarantee. Loyalty and security are therefore extremely important.

3.1.3. What can an unemployed person expect on the couple market?

A person without a secure job has a weaker position on the marriage market for three main reasons:

- (1) In his or her present state, he or she cannot really improve the output of his or her spouse other than by nonmonetary contributions - household labor, altruism, and/or beauty.
- (2) His/her unemployed status can cause him/her to be seen as an idler or a less talented person.
- (3) As he or she does not have a job yet, his/her future income is unknown: risk-averse potential partners will be less likely to accept the match.

Hence the situation of an unattached unemployed woman in the marriage market is different from that of a future housewife. The latter invests in her own home and/or child-raising, while the former is a second-rate worker, whose future wages are uncertain. She will thus have to pay a risk premium, reducing her requirements, to compensate for this handicap. An unattached unemployed man, whose main endowment has traditionally been his earning capacity and is less likely to be valued for his nonmonetary contribution, has an even lower value in the marriage market.

If an unemployed person matches with another unemployed person, the risk-sharing advantages of marriage are seriously reduced. A person with a regular income is a more valuable marriage partner, whatever one's own position in the labor market. The unemployed therefore prefer to match with partners with stable jobs, although their own unemployment will limit their choice. The market will lead to compensating differentials in marriage, making it necessary for the unattached unemployed to settle for partners with relatively low endowments (see Grossbard-Shechtman, 1984). Unemployment therefore opens up opportunities for those who have traditionally been excluded from the marriage market (executive women, unqualified male workers), as long as they are not too risk-averse.³ A farmer or an unskilled worker may appreciate an unemployed clerk, or an older single female executive may form a couple with an unemployed man. Generally speaking, unemployed people will match with people with fewer desirable characteristics on the marriage market relative to them: women will accept an unqualified worker and men will accept a woman with higher professional status,⁴ and, as a result, hypergamy (a couple in which the woman's social status is higher) will be observed.

3.2. *Couple formation*

The above theory assumes that, when they meet, the partners compare their characteristics and know the total output of the couple, z , with each partner anticipating his/her share in this output. *In a permanent regime*, each individual i has an idea of *all* the possible couples he/she can form, of the distribution of all the gains associated, and of the mean gain he/she can claim, given the couples market. This information can be obtained via a matchmaker in traditional societies or via the accumulation of interactions, the knowledge of opportunities of one's environment, at work or in leisure activities and so forth. We initially assume that couples do not break up and that there is no preference for the present.

Everyone is initially single, with utility v_1 coming from:

- The production of private goods y and

- The expected utility gain from the possibility of being in a couple tomorrow (EG), that is the expectation of the additional output he/she may gain from forming a couple.

$$v_i = y + EG_i$$

A person, who has no intention of forming a couple, such as a celibate priest, will have utility $v_i = y$.

This expected utility gain comes from three main factors: (i) the individual's share of couples' output, multiplied by (ii) the probability of meeting a potential partner (market access), and (iii) the future discount factor. These three factors will now be considered in turn. We first define the decision rule, then the general matching process, and finally introduce the time factor.

3.2.1. The decision rule and reservation output

Individual i will not cohabit unless he/she obtains at least v_i . Symmetrically, potential partner j has to obtain at least v_j to decide to form a couple. A single person in the first period accepts an offer to form a couple if the discounted utility from doing so is superior to that associated with remaining single in the first period. This corresponds to the condition:

$$z_{ij} \geq v_j + v_i,$$

where z_{ij} is the marital output of the union of i and j .

Note that the inequality may be strict. In this case, $(z_{ij} - v_i - v_j)$ represents the marriage surplus, which is shared between i and j in proportions θ_{ij} and $(1 - \theta_{ij})$. In a Nash bargaining framework, θ_{ij} will depend on i 's and j 's characteristics. According to marriage market theory, these proportions also depend on marriage market conditions such as the relative availability of women and men (see Becker, 1991, Grossbard- Schechtman, 1993). The utility of union with j to partner i is therefore:

$$w_{ij} = v_i + \theta_{ij} (z_{ij} - v_i - v_j)$$

where i 's net gain from union formation equals $\theta_{ij} (z_{ij} - v_i - v_j)$.

We will see now how these minimum requirements for single individuals, v_i and v_j , are determined by a search process in the marriage market.

3.2.2. How does the search process develop?

We consider a random process of interaction between individuals. When they meet, each person evaluates the potential gain from marriage that he/she would have with this partner and the part of this marital gain that he/she could claim, according to his/her own characteristics. For instance, an unemployed person cannot claim the same part as a working person, as he/she does not contribute so much to the joint output. If the gains for each participant are larger than the expected gains from continuing search for a marital partner, then they will decide to live together. Otherwise, search will continue.

The random meeting process occurs according to a Poisson process: during a short period, between t and $t+I$, the probability of a meeting is λ . The parameter λ depends on personal characteristics, such as age and social class. The probability of meeting someone is likely

smaller in old age and, in France, workers meet mostly in public dances or other public places, while the upper class meet their spouses in selected company, such as school, place of work or sports clubs (Bozon & Héran, 1988). The intensity of search⁵ is also included in λ .

Each meeting is characterized by a potential output z , with the decision rule as described above. We assume that $f(z)$, the distribution of the potential outputs the individual meets, is known. We then derive the expected gain of utility from being in a couple:

$$EG_i = \lambda \left[\int_{z - v_j > v_i} f(z)\phi(z - v_i - v_j)dz \right]$$

The analysis of the utility gain has so far been in a static framework. We go to analyze in more details what the expected gain (EG) entails and we will now take into account the future of the union.

3.2.3. *Introducing time explicitly into the process: does the job come first?*

We emphasized above the importance of uncertainty, due to unemployment. The role of the future of the union therefore needs to be modeled. There are two key factors: the discount factor, β and the probability of union disruption, q (in the case of married unions, the divorce rate).⁶ We thus decompose the life cycle gain, (EG), over each period.

Consider an individual who is single at time t , and considering forming a union at $t+1$. The discount factor between t and $t+1$ is β . Accepting an offer at $t+1$ guarantees that i will be in couple at $t+1$. This union is disrupted with probability q at $t+2$, so the probability that the union lasts at $t+2$ is $1-q$. The union gain at $t+2$ is therefore discounted by $\beta^2(1-q)$. In period $t+n$, the discount factor will be $(\beta^n(1-q))^{n-1}$. This factor converges, so the total gain in the life cycle will be discounted by:

$$\frac{\beta}{1 - \beta(1 - q)} \quad \text{where } 0 < \beta < 1, \quad 0 < q < 1.$$

We can thus write

$$v_i = y + \frac{\beta}{(1 - \beta(1 - q))} \left\{ \lambda \left[\int_{z - v_j > v_i} [\theta(z - v_j - v_i)]f(z)dz \right] \right\}$$

Henceforth, we call

$$\frac{\beta}{(1 - \beta(1 - q))} \lambda \int_{v_i + v_j}^{+\infty} [\theta(z - v_j - v_i)]f(z) dz,$$

the discounted utility gain associated with the couple, denoted $\beta A(\beta, q) \lambda G$. The factor β is the second period depreciation factor (there is no divorce at the beginning of the union) and A reflects long-term depreciation from the second period onwards. Then

$$v_i = y + \beta A(\beta, q) \lambda G$$

The discount factor $\beta A(\beta, q)$, is increasing in β and decreasing in q .⁷

The probability of entering a union is then: $m = \lambda [1 - F(v_i + v_j)]$, where F is the cumulative function of all possible outputs, that is to say outputs that are greater than the reservation value.

3.2.4. Reservation value

v_i , the reservation value, depends on several variables. Differentiating the above equation, we have (Cahuc & Zylberberg, 1996).

$$\frac{\partial v_i}{\partial y} > 0.$$

This implies that the larger i 's own production, the higher i 's asking value in the marriage market.

$$\frac{\partial v_i}{\partial \lambda} > 0,$$

implying that the individual has possibilities of meeting others, i 's asking value on the marriage market will be higher as his/her potential choice is larger.

$$\frac{\partial v_i}{\partial \beta} > 0,$$

where β is the depreciation factor. The less importance given to the present (the greater β), the more demanding one is, as one cares a great deal about what happens in the future.

$$\frac{\partial v_i}{\partial q} < 0$$

The greater the (ex-ante individual or collective) expected divorce rate, the smaller the reservation value: the union loses its insurance property, as the access to all of the union benefits requires a long-term contract.

The probability of entering a union, m , moves in the opposite direction to v_i . It thus increases with q and decreases with β and y .

The relation between λ and m is more ambiguous. Although the arrival rate of offers increases the probability of entering a union, a rise in λ can increase requirements (v_i), reducing m .

3.2.5. Predicted effects of unemployed on union formation

An unemployed person has characteristics y_u , λ_u , G_u , v_{iu} . As noted above, the production of private goods y_u ($<y$) is reduced by unemployment, and so is expected output z_u . The

expected match is therefore worsened. In addition, as the unemployed are excluded from some meeting places, (work, expensive clubs, holidays, etc.), meeting opportunities become scarcer. For a given search intensity, the number and quality of offers are reduced: $\lambda_u < \lambda$.

Because of these handicaps, i cannot claim much of the potential surplus from the union, so that θ will be much lower. Even if the individual finds a job later, he/she may not be able to recover all of the lost bargaining power, due to costs of union break-up, and the habits and inertia of income-sharing within the couple. Evidence from time-schedule data shows that men do not increase their housework if they lose their job⁸ (Maurin, 1989). Hence $G_u < G$ and reservation value is lower. Therefore, despite their greater demand for income insurance demand, the position of the unemployed in the marriage market is worse.

$$v_{iu} < v_i$$

The reservation output of an unemployed single person is lower than that of a working single person.

Instead of obtaining a worse match on the marriage market, i may prefer to look for a job first. Suppose that a job improving his/her personal situation is found with probability p . What happens if i , while unemployed at time t , receives an offer of union which gives him/her the couple output w ?

Obviously, if $w < v_{iu}$ he/she will refuse the offer. If, on the contrary, the offer is unexpectedly good (that is an offer that would be accepted even if he were employed) and $w > v_i$ he/she will accept it. Last, if $v_{iu} < w < v_i$, there is uncertainty regarding the decision. The unemployed choose between being in a couple immediately by reducing his/her requirements, and waiting in order to first find a job and then a better proposal afterwards. He compares the expected utility at time 1 of accepting the offer, versus refusing it. We stress the cost of waiting via β and the utility of remaining single and unemployed y_{u1} . To illustrate this point, we decompose the lifetime utility, by splitting off the first two periods from the rest of the individual's lifetime, which is now denoted the third period.

(i) if he/she refuses the offer:

- he/she obtains y_{u1} in the first period,
- but he/she has the possibility p of finding a job in the second period. If a job is found, reservation value becomes v_i , otherwise, it remains v_{iu} . The present value of the utility received in the second period is discounted by β .
- he/she then makes a match in the third and last period.

The long-term reservation output will be

$$v_{ir} = y_{u1} + \beta \{p v_i + (1 - p) v_{iu}\}$$

that is,

$$v_{ir} = y_{u1} + \beta \{p[y + \lambda \beta A(\beta, q)G] + (1 - p)[y_u + \lambda_u \beta A(\beta, q) G_u]\}$$

Alternatively, he/she may prefer to improve his/her present state by accepting the offer.

(ii) if he/she accepts the offer to form a union:

- he/she obtains output w_1 ($w_1 > y_u$) at time 1,
- from the next period on he/she obtains the long-run personal output, discounted by the fact that, at time 2, the probability q that the union is dissolved; that is, $(1-q) \beta \cdot A(\beta, q) \cdot w_T$

Total union value is denoted w : $w = w_1 + (1-q) \cdot \beta \cdot A(\beta, q) \cdot w_T$.

w depends on both the discount factor and the separation probability.

The individual accepts the offer if: $v_{ir} \leq w$

The condition of acceptance is thus

$$p \leq \frac{(w_1 - y_{u1}) + \beta[(1 - q)A(\beta, q)w_T - v_{iu}]}{\beta(v_i - v_{iu})}$$

$$\text{or } p \leq \frac{(w_1 - y_{u1}) + \beta[(1 - q)A(\beta, q)w_T - (y_u + \lambda_u \beta A(\beta, q)G_u)]}{\beta(y - y_u + \beta A(\beta, q)(\lambda G - \lambda_u G_u))}$$

Where p is the probability of finding a job at $t+1$. This leads to predictions regarding the decision of accepting the offer, or refusing it and waiting in order to first find a job.

The unemployed will accept the offer if:

- The left hand side of the inequality p , is low. In this case the probability of finding a job and increasing his/her marital value is small. This may be thought to be the case for a long-term unemployed, unqualified person.
- The right hand side of the inequality is high. The right-hand side expression increases with $w_1 - y_{u1}$ and falls with λ , and $(v_i - v_{iu})$. The derivative with respect to q depends on the sign of $\beta^2(g(\lambda G - \lambda_u G_u) - w_T)$. This is generally negative, so that the right-hand side decreases with q . Last, as β tends to zero, this expression is equivalent to $(w_1 - y_{u1})/\beta$ and tends to infinity, and the inequality holds, as far as β ($0 < \beta < 1$) is lower than some critical value; then, the right hand decreases with β .

It follows that the unemployed are more likely to accept the union offer if:

Prediction 1: preference for the present is stronger (β is low).

Prediction 2: the expected marital gain of the unemployed does not differ much from the expected gain of workers, that is, $(v_i - v_{iu})$ is low. This is the case if both v_i and v_{iu} are small, that is:

- if λ_i is small, then he/she will prefer to be in a couple now. This is the case if i has a handicap in the marriage market (age, physical disabilities etc.). For example, this will hold if λ declines sharply with age, and i has reached the usual age limit for entering a union (for instance, highly-educated women who want to be in a union).
- if the union disrapture rate (q) is low: if an union is not likely to be disrupted, its insurance property makes the present offer more attractive.
- if one of the partners does not invest in the labor market (because of his/her low level of education, or his/her main endowment to the couple consists in domestic work).
- on the contrary, there will be only a small gap if the unemployed are sure to find work, for example a highly educated person, for whom demand is high.

- if $w_1 > y_u$, that is the union is strictly preferred to the single unemployed state. This is a consequence of the risk-sharing benefits of the union.

The offer will therefore generally be refused. Beside housewives, only people with the greatest handicaps in the job or marriage markets will accept the offer. And it is precisely these people who are least likely to receive such an offer.

This theoretical model emphasizes the dilemma that may exist when one is unemployed and single: to wait to find a job before forming a couple, or to form a couple even though the match is less good? It also emphasizes the risk premium that the unemployed have to pay to a mate who accepts the match, and the hypergamy that is generally associated with the unions beginning when one of the partners is unemployed.

The probability of entering a union while unemployed is thus expected to be small, due to the small size of $m_u = \lambda_u [1 - F(v_{iu} + \bar{v}_j)]$, and because, in most cases, and especially for men, people will wait until they have a job in order to obtain a better match. *Only very poor, low-educated people, housewives and older educated women whose position and age represent a handicap when looking for a partner, will enter such a union.* In this case, union output depends on the motive for accepting a union. For instance, if union acceptance while unemployed is associated with a low β , the union is characterized by short-sighted behavior, and we may expect a higher break-up rate and a lower probability of having children (which implies a long-term contract).

This model will be tested in the following sections. We first analyze time since first couple formation according to professional status, and then we test the quality of union matching when one of the partners is unemployed or has an insecure job.

4. Testing the model

4.1. Labor market status and couple formation?

In order to find out whether a job encourages union formation, we look at the duration of the relationship since the end of education. We compare m and m_u , the probabilities of entering a union when employed and unemployed respectively.

Cohabitation has been the predominant mode of union formation in France since the 1980s (85% of the 1994 union cohort began their couples by cohabiting, Toulemon 1996). This is a permanent form of union (for 20% of women born in 1960). Last, more than half of first births occurs among cohabitants. Cohabitation has become a stable relationship with children in many European Countries. We will therefore focus on both married and nonmarried union formations (Ekert-Jaffe & Sofer, 1996), the beginning of the union being indicated by the first shared dwelling.

Our data, the French FFS (INED, 1994), is longitudinal, comprising almost 5000 respondents. The survival analysis focuses on time differences in family formation, and especially on the transition to cohabitation. As professional situation and marital status may change over the observed period, we use time-varying covariates. We focus on professional situation, and control for education, birth cohort, feelings about religion and social groups.

Table 1
Cox regression of duration from end of studies to first cohabitation

Variables	Women		Men	
	Risk ratio	Standard error	Risk ratio	Standard error
Birth cohort				
1968–77	1.004	0.074	1.269	0.093
1958–67	reference	reference	reference	reference
1948–57	0.870	0.073	0.894	0.077
1938–47	0.824	0.104	0.870	0.098
Age at school completion				
9–16 years old	0.738	0.073	0.486	0.082
17–20 years old	0.954	0.062	0.759	0.071
21–25 years old	reference	reference	reference	reference
25–35 years old	0.479	0.183	0.635	0.169
<i>25–35 years old* no job</i>	4.741	0.447		
Feelings about religion at age 18				
Important	0.849	0.047	1.035	0.062
of little importance	reference	reference	reference	reference
decreasing feelings	1.287	0.074	0.965	0.084
not important	1.029	0.046	1.074	0.049
refused	0.548	0.183	0.919	0.173
Activity (dynamic variable)				
<i>no job</i>	0.707	0.050	0.553	0.088
<i>secure job</i>	reference	reference	reference	reference
<i>Insecure job* completed school before 1980</i>	0.922	0.061		
<i>Insecure job* completed school after 1980</i>	0.846	0.077		
<i>Insecure job</i>			0.948	0.051
Male or female unemployment rate	1.009	0.013	0.955	0.018
Social groups				
Farmer or worker	0.958	0.053	0.858	0.051
Likelihood: $-2 \log L$	45186		33178	
Weighted sample size	3592		3045	

bold = significant at the 5% level *Italic = Dynamic variable*

Survey ESFE 1994

Reference population: individuals with a secure job, who completed their studies between 21 and 24 years of age, born between 1958 and 1967, and not a farmer or a worker.

In a semiparametric (Cox regression) model (Table 1), we introduce a number of time-varying covariates. Therefore, the constraint of proportional hazards is reduced to duration intervals where the dynamic variable does not change, that is, relatively short time intervals. We will first give a brief account of the control variables, and then introduce the variables described in the theoretical model.

The variable “*birth cohort*” is introduced to capture the generation effect and to correct for possible attrition bias associated with our sample. The employment survey is only based on private households, which means that those living in collective households are omitted. Usually this is not a serious constraint, but when we study the passage to adulthood it could pose a problem, especially for men. We miss, for instance, young people who are doing their national service or who have a room in a young workers’ hostel. The cohort effect is mostly significant for the youngest birth cohort of men (born between 1968 and 1977), which is that

containing the conscripts in 1994. The positive sign of this parameter may well come from the omission of conscripts in our sample, who are mostly single (since they do not have independent housing). For women, older cohort is associated with slightly less union. The rise and popularity of cohabitation implies easier and earlier union.

We also control for *age at school completion*, *feelings about religion at age 18* and *social group*. These all indicate coefficient estimates consistent with the economic theory of marriage, for traditional couples. The estimates on *age at the end of studies* exhibit a U-shape: low education (especially for men) or high education (especially for employed women) discourages union. *Religion* is only significant for women, and saying that religion is, or is becoming, unimportant implies earlier cohabitation.⁹ Belonging to a lower *social group* (farmer or worker) is a handicap to union formation for men.

In order to evaluate the effects of unemployment, we consider two variables: a dynamic variable for the individual's situation, and a macrovariable representing the labor market environment. This latter (the unemployment rate, by sex, at the time of end of schooling) reflects the chance of finding a job tomorrow and thus the individual's confidence in the future.

Individual labor force status is time varying. In addition, individuals are defined as being stable or unstable when in employment. This latter taxonomy is determined by the first job (of over three months) that the individual held. If this first job was followed by a period of unemployment of six months or more, the individual is defined as being of unstable employment type.¹⁰

The results are consistent with the theoretical model: *not yet having a job* is a handicap for couple formation, especially for men. The probability of a man beginning a union is almost halved when he is unemployed. Those unemployed men who overcome this handicap enter the union earlier than average. Their behavior is thus consistent with a low value of β (preference for the present) and/or a union that improves remarkably their economic situation.

Our theoretical model indicated that women might enter a couple for a number of different reasons. In particular, housewives and highly educated women who are beyond their late twenties are more likely to enter a union before getting a job. The results show that women over 25 at the end of their studies with no job are more likely to form a couple (the risk ratio relative to an employed woman equals 1.6¹¹). This regression cannot distinguish housewives (not searching for a job) from the unemployed.¹² However, according to status at the beginning of the union, housewives begin their union earlier than average,¹³ but with a partner of lower social status (Table 2, column 3), as the theoretical model predicts.¹⁴ In the worst case, unemployed women can bring their domestic endowment, so they may be relatively better placed on the marriage market than unemployed men. Maurin's (Maurin, 1989) work on time-schedules shows that unemployed women participate more in domestic work, with a status similar to that of a housewife, whereas unemployed men participate less than working men. This can be explained by feelings of depression and uselessness due to joblessness, that are stronger for men due to the social norm of market work.

With respect to job status, the regressions show that an insecure job is stronger a handicap for women than for men. For the latter, there is no difference between a secure and an insecure job in terms of union formation. A number of interpretations are possible.

Table 2

Social categories of the mate according to the job status at the beginning of the union

Job status	% in union with an executive		% in union with a blue-collar worker
	Clerical (W)	Blue collar (M)	Women
Unemployed	1%	12%	55%
Stable job	8%	5%	45%
Housewife	8%		60%

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lecture: 1% of the women clerical workers that are unemployed at the beginning of their union are in couple with an executive man, against 12% of the unemployed blue-collar men at the beginning of their union are in couple with an executive woman

First, the estimated coefficient in the model may capture both advanced timing and lower intensity. People who decide to form a union when they do not have a secure job are a minority but, in that case, they begin their union quicker than those with secure jobs (the reference group). The unemployed, with a greater handicap in the marriage market and a greater preference for the present, enter a union as soon as they find a (insecure) job.

According to the magnitude of the coefficients, the main difference in couple formation is that between the jobless and the employed; differences between different types of job are less pronounced. This means that men want the insurance that the couple brings. This conclusion is corroborated when we interact the activities of man and woman,¹⁵ taking into account the proportions of each professional situation at the beginning of the union. The results show that in an insecure job, men have a 20% greater chance than women of forming a couple with a secure partner. If insurance is an important factor for couple formation by men, then the match will be altered: the economic theory of marriage postulates that match quality increases with the length of search. We test this hypothesis below.

The fact that there are asymmetrical offers (women seem to accept men even if they have an insecure job, whereas men are less likely to do so) could result from women's higher altruism.

We tried many different interaction terms, especially with the dynamic variable (age at school completion, cohorts and each value of our dynamic variable) but the resulting estimates were only significant in two cases. First, highly educated unemployed women form unions quickly (see below, Table 1). Second, an insecure job in the 1970s is likely to be different from an insecure job today. We thus split insecure jobs between pre- and post-1980. Only the post-1980 estimate is significant. Since the 1980s, competition in the French job market has increased, so an insecure job is now more a sign of lower capabilities. The job market reveals individual characteristics affecting the marriage market.

The macroeconomic variable representing the chance of finding a job ("p" in our theoretical model) is only significant for men. The estimate is negative: men who have little chance of finding a job delay couple formation. Women are more often unemployed or in an insecure job than are men. Given that finding a stable job is more difficult whatever the macroeconomic context, women may be less affected by the macroeconomic environment.

In conclusion, we suggest that obstacles to union-formation are mostly social and macro-

economic for men. Unemployed, blue-collar workers and less-educated people have greater difficulty in finding a partner. Moreover, since no other variable is significant¹⁶ (cohort 1, and younger cohort), the male unemployment rate associated with the individual's professional situation accounts for the whole of the delay in entering a union. Unemployment plays a major part in couple formation.

Last, even if female unemployment also affects couple formation, its impact is weaker as women's wages are typically considered to be less important (risk-ratio 0.7 vs. 0.5 for men). For women who traditionally invested in marriage, there is little cohort effect either. If the marriage rate has dropped dramatically over the past twenty years, cohabitation has replaced traditional marriage and the wider participation of women in the labor market accounts for the rest of the decrease. The level of education is important. Traditionally, female executives were more likely to remain single, while educated housewives got married and had more children. Now almost every educated woman wants to participate in the labor market (Riboud, 1985). Being an executive is still a handicap in the marriage market, while educated women who are not yet working hurry to find a mate. Thus, the growing importance of women's education and career affects the union formation rate. Furthermore, insecure jobs, which are becoming more widespread, discourage union formation.

5. A worse match?

The previous section showed that those who are unemployed or in an insecure job take more time to form a union. Does this delay in couple formation mean that the unemployed prefer to wait before cohabiting? Or that they wait because they are forced to, since few people want to be in a couple with someone who is highly devalued on the job market? We will see if the unemployed take longer to form couples because fewer offers are received (quantity and quality) or because they hope to find a job and then a better partner in the future. For this analysis, we consider couples who began their union when at least one of the spouses was unemployed. We will then determine if they are less well matched.

A preliminary look at the social categories of spouses illustrates our theoretical hypothesis about offer acceptance among the unemployed. Large gender differences are apparent: unemployed men seem to be more demanding with respect to potential partners, and prefer to wait except if they get a very good offer. Among the few men who are unemployed when they form a couple (Table 2), there are more hypergamists (12% form a union with a woman from a much higher social category) than among men with stable jobs (5%). Female executives are traditionally left aside in the marriage market, but they can find an insecure partner more easily, as they are financially secure. We assume that when a good offer arrives, an unemployed man will not refuse it as he knows that he is devalued on the marriage market.

The story is different for women. A female office clerk who is unemployed or has an unstable job cohabits less often with an executive (1%) than do women with a stable job or housewives (both around 8%). She is more often matched with a blue-collar worker (55%, against 45% for stable-job women and 60% for housewives). Women seem less demanding on the marriage market, as they probably want to form couples faster than do men.¹⁷ To

check these initial results, we evaluate match quality by focusing on both the investments made in the couple and its stability.

5.1. *Investments in the couple*

Investments in the couple represent the marital output, and are a sign of a good match. When someone is uncertain about his/her future, he/she will invest less readily. Investment requires confidence in the future. We study investment in marriage and the first child, (as in France, marriage is becoming rare among the younger cohorts).

We estimate a logistic model of at least one of these two events - marriage or first child –occurring. A duration model would reveal any delay in investment but would not show if couple investment is lower. We therefore prefer the dichotomous model. Our sample consists of about 3000 couples in their first union. We control for cohort (i.e., age in 1994), social group (i.e., qualification) and religious feelings (which are positively correlated with marriage, as one expects). The results are presented in Fig. 3

The absence of material security prevents the couple from investing: both unemployment and job insecurity reduce the probability of marriage or children, for both genders. Except for housewives, the risk-ratios of men and women's professional statuses are the same: women's status plays as large a part as men's. We may imagine that, due to the uncertainty of the man's income, the woman's would no longer be considered supplementary but as important as the man's. This gender-equal vision is unlikely as we continue to see large gender differences in labor force status. As emphasized by Ekert-Jaffé and Sofer (1996), the greater the gap between male and female status, the greater the likelihood of marriage. In accordance with this theory, housewives that invest in home production are generally married. We therefore prefer to suggest that women have a more important role in family decisions, especially fertility decisions.

We may also add that, since women seem to be less demanding on the marriage market because they want to be in a couple sooner, the quality of the match concerning family investments is less good when the woman has an insecure professional situation.

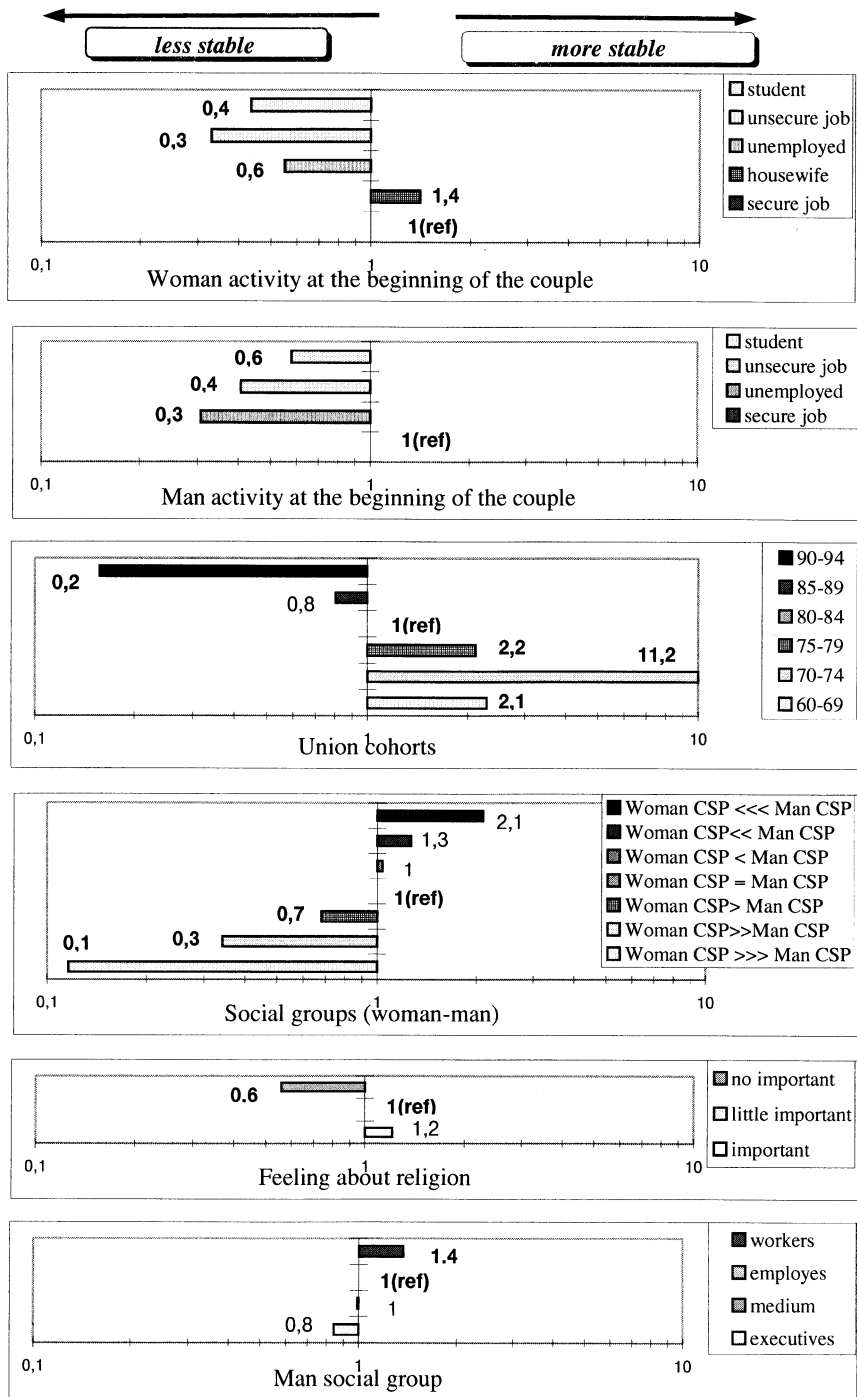
5.2. *Break-up*

There are fewer marital investments when one of the spouses has an insecure professional situation at the beginning of the couple. A second method of evaluating match quality is whether these couples have more chances of breaking up.

A previous study (Solaz, 1998) used a nonparametric model of the duration of unions from the first date of cohabitation and a semiparametric model (Cox regression) controlling for typical variables, such as union cohorts, number of children, social categories, religion and marital status (this latter is a dynamic variable). Results showed that professional status at the beginning of the union remains significant. Figs. 4 and 5 show the survival functions of the couple according to the man's and the woman's situations on the job market at the beginning of the union.

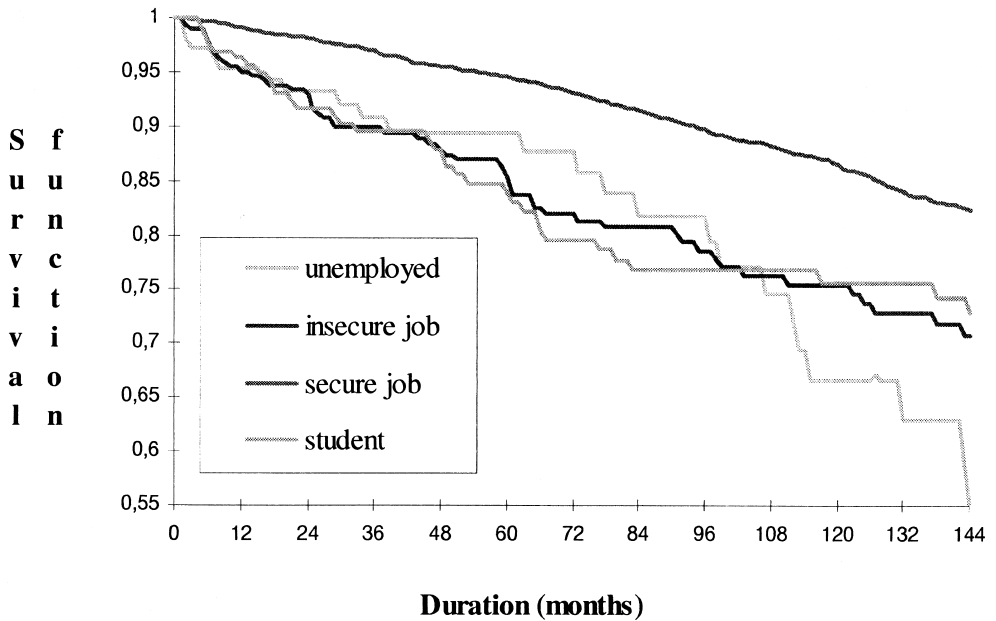
Differences in couple's behavior depend on whether one of the spouses is unemployed or working. Almost 20% of the couples with an unemployed man break up before the fifth year,

Logistic model, survey ESFE, INED (France) 1994 **bold = significant at 5%**



Controlled by religion, duration and man social group

Fig. 3. Risk-ratios for a stable union (marriage or child)



Survey ESFE 1994

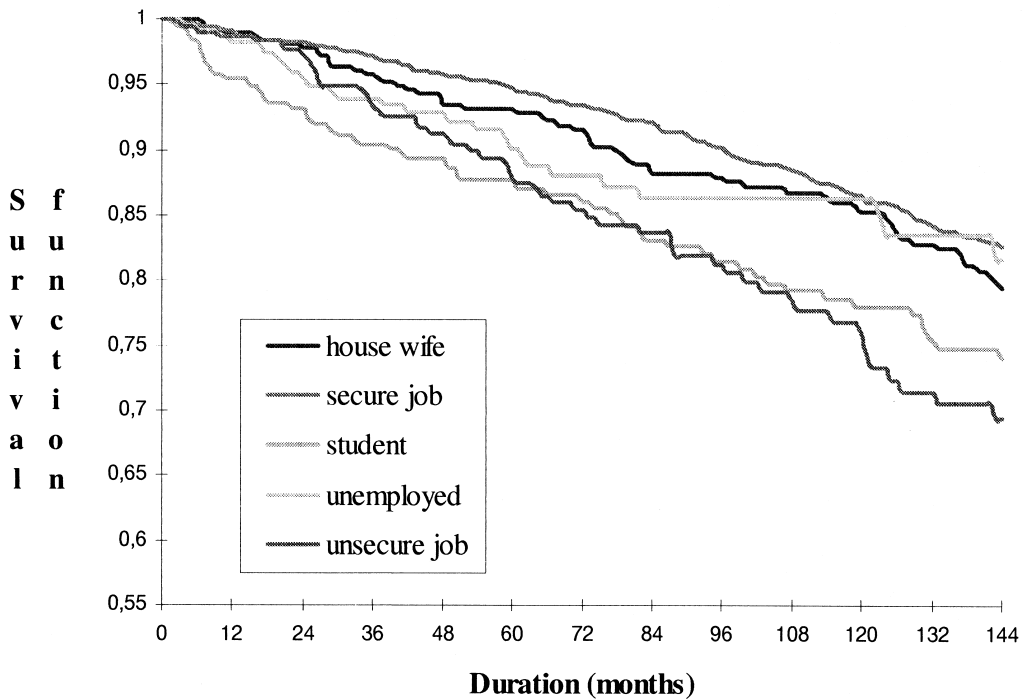
Fig. 4. Union duration (until break-up) according to man's status at the start of union.

as opposed to only 6% of couples where the man has a stable job. There is also a visible gap between insecure and stable jobs, especially in the first years of the union. We should note that job status is self-reported and not, as usual, an administrative distinction (long-term contracts, short-term contracts). This variable may be considered as an index of job stability. An insecure job shortens couple duration, especially for men: 20% of couples in which the man has an insecure job break up within the first five years, compared to 6% of couples where the man has a stable job.

This gap exists also for women, but to a lesser extent. In the first five years, 15% of couples in which the woman has an insecure job break up, against less than 10% for women with stable jobs. There is little distinction between housewives and women with secure jobs. This shows the importance of stability for the couple's future. It is not only the lack of money that is important, but above all the stability of the situation. That is why an insecure job is as strong a handicap as unemployment.

The gender difference can be interpreted mainly by wage differences on the job market that either explain, or are explained by, social norms. As Herpin (1990) notes, the woman's income is perceived as a supplementary resource while the man's is proof of his capabilities as household head.

The unemployed thus experience a number of forms of insecurity: job insecurity leads to less stable unions. They are then forced to accept lower-quality matching. For women, unemployment is less important in determining the duration of the union.



Survey ESFE 1994

Fig. 5. Union duration (until break-up) according to woman's status at the start of the union.

Hence, the analysis of both couple investments and survival probabilities stresses that insecure professional status implies worse matches.

Unemployment not only delays union formation, but it makes the union more insecure. It is very difficult to distinguish the influence of supply –the scarcity of potential partners –from that of demand –the unemployed strategy of delaying couple formation. Nevertheless, our results show how unemployment affects these two aspects of the market for unions. Unemployment involves worse matches, showing that unemployed people tend to diminish their requirements, so demand is affected. Last, the couple's duration is affected, since investments are smaller.

6. Conclusion

Many studies have showed that it is important to study jobs and family simultaneously. The prevalence of a high rate of unemployment has underlined this need. Not everyone finds a job at the end of school completion and this has an influence on life course transitions. Unemployment is becoming an important event, marking the passage to adulthood, especially since we show that, for both women and men, the job comes before the couple, and

there is no effect of union formation on likelihood of finding a job. Our theoretical model points to the following conclusions, which are in turn confirmed by the empirical results.

Since family formation requires that partners have confidence in the future in order to have a stable commitment, the unemployed person will tend to wait for a stable job before looking for a spouse. In a world where earning capacities tend to dominate domestic work endowment, an unemployed woman will lower her requirements relative to an employed woman. An unemployed man is even more handicapped, since man's earning capacity is a more central endowment. Unemployment generally delays couple formation and accounts for most of the delay in union formation observed in France since the eighties. Only two types of unemployed persons will attempt to enter a union, sooner: older highly qualified women or people with little prospects of finding a job.

Match quality is also affected. Couples involving an unemployed partner are less well matched, they invest less (fewer children, less likely to marry) and are more likely to break-up.

Housewives get lower social status spouses than unemployed, women. Further research is needed to clarify this point, with better data, in order to distinguish unemployed women from housewives, in our duration model, and to explicitly introduce income and successive precarious status.

This study has also shown that we cannot simply contrast work and unemployment. The beginning of working life covers many different situations, some of which are insecure. Our results show that an unstable job is almost as strong a handicap as joblessness. Family decisions require that partners believe in the future in order to build something. An uncertain professional situation does not encourage such security.

Finally, we can say that the unemployed suffers from multiple insecurity. Job insecurity leads to less stable unions. They are then forced to accept lower-quality matches. Unemployment is a burden in the market for unions.

Notes

1. that is, the man has a higher economic position than the woman. But we note that the fathers of those in couples often had the same social position
2. Social custom still leads to some degree of hypogamy.
3. These two characteristics are relatively contradictory: in France, those with stable-job persons have been shown to be more risk-averse (Arrondel, Masson & Verger, 1999).
4. An unemployed male executive can improve the output of an unskilled female worker or a low-level clerk, but we will see that, for an executive with a chance of finding a job, matching while unemployed is a very bad strategy.
5. We call the search intensities of each participant s_i and s_j . Individual i chooses his/her level of search intensity, according to his/her characteristics, with the search intensity of j fixed, in order to maximize the net expected gain, taking into account search costs. The model then yields a search intensity, conditional on the reservation wage. If the single person does not want to be in a couple then the intensity of his/her search is zero. We obtain s_i^* , and an equilibrium value of λ^* , which maximizes the net

expectation of marital gain. Henceforth, the search cost will be included in y and λ^* will be noted λ .

6. The discount factor, β , is commonly the future preference rate between two consecutive periods. It lays between 0 and 1: when $\beta=1$ the future is as good as the present; if $\beta=0$, the individual is completely near-sighted and the future is completely discounted.
7. We realize that our model is simplified: disruption costs and postunion stages are not really analyzed.
8. While unemployed women do increase their housework.
9. It implies also less marriage (Ekert-Jaffé & Sofer, 1996)
10. It would be better to have information on the stability of each employment spell. However, in our data set, we are only able to ascertain the period of unemployment following on from the first job; this information is then applied to all of the individual's jobs.
11. The risk ratio relative to an employed executive is $4.74 \times 0.707 = 3.35$
12. We cannot distinguish housewives from the unemployed among women who did not yet enter an union; but we do distinguish them at the beginning of the union.
13. Results available upon request.
14. Then our result, concerning the delay in couple formation for unemployed women should be reinforced.
15. Results available upon request.
16. We remind that the effect of being of the younger cohort, under 27 at the survey, is due to attrition bias.
17. The mean of age differences in France has been relatively stable since the 1960s at around two years (Bozon, 1990).

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