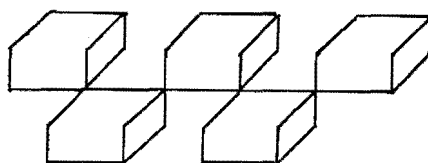


WORKING PAPERS

**MARRIAGE AND INTERMARRIAGE IN BELGIUM:  
INDICATIONS CULLED FROM REGISTRATION DATA**

S. Wijewickrema

IPD-Working Paper 1989-1



interuniversity programme in demography

**MARRIAGE AND INTERMARRIAGE IN BELGIUM:  
INDICATIONS CULLED FROM REGISTRATION DATA**

**S. Wijewickrema**

Vrije Universiteit Brussels

IPD-Working Paper 1989-1

ORDERING INFORMATION

Extra copies of this working paper are available from :

Mr. E. Vanden Balck  
Secretary/Librarian  
Interuniversity Programme in Demography  
c/o Centrum voor Sociologie  
Vrije Universiteit Brussel  
Pleinlaan 2  
B-1050 Brussels  
BELGIUM

at the cost of US \$ 8.00 or BF 300. Please attach check or international money order.

---

ORDER FORM

Name .....

Address .....

.....

.....

.....

.....

wishes to receive ..... copies of Working Paper Nr.....

and includes payment of US \$ ..... or BF.....

---

MARRIAGE AND INTERMARRIAGE IN BELGIUM: INDICATIONS  
CULLED FROM REGISTRATION DATA

1. INTRODUCTION

The nuptial habits of a population are of interest to a demographer largely because of the connection which exists between wedlock and the process of reproduction: and even if this connection tends to be less important in certain countries today than it has been in the past, it still continues to exist and be operative universally. While this would be reason enough to get a demographer interested in the nuptial behaviour of any given population, it is not difficult to see that wedlock could also be of interest, to demography as well as to other types of scientific inquiry, in that it does act as an index of integration in a socially heterogeneous population: particularly in one where distinctions of caste or/and creed or/and race are present. The manner in which Belgians, for example, marry Non-Belgians is obviously a function of the degree to which Belgians and Non-Belgians associate with each other in social intercourse. The higher the incidence of intermarriage, the greater therefore the level of integration of Non-Belgians in Belgium.

The study of nuptiality (both as regards the formation and dissolution of nuptial unions) in Belgium has been entered into on a number of occasions in the past\*1\*. The same however cannot be said as regards investigations bearing on the nuptiality of Non-Belgians in Belgium. (They will also be sometimes referred to as "foreigners" or as "non-nationals" in the present article). The only research effort of note extant in this connection is that of M. Masui (1981)\*2\*. Problems arising from the non-availability of suitable data, which hindered earlier analytical efforts and probably troubled those in 1981, have not completely disappeared today: but the situation has taken a turn for the better following the availability of nationality specific census data. The present report - the first of two

dealing with the nuptiality of non-nationals in Belgium - aims at updating the work of Masui on the one hand while, on the other, attempting to introduce a greater degree of analytical detail concerning lessons that can be learned from an examination of registration (i.e. vital statistics) data. While the main body of the article deals with the incidence of, and trends in, intermarriage (effected mainly through an examination of the complementary phenomenon: in-marriage) - Section 3 gives details of the relevant theory - it is useful to begin with a rapid sketch of the scene related to nuptiality, in general, in Belgium.

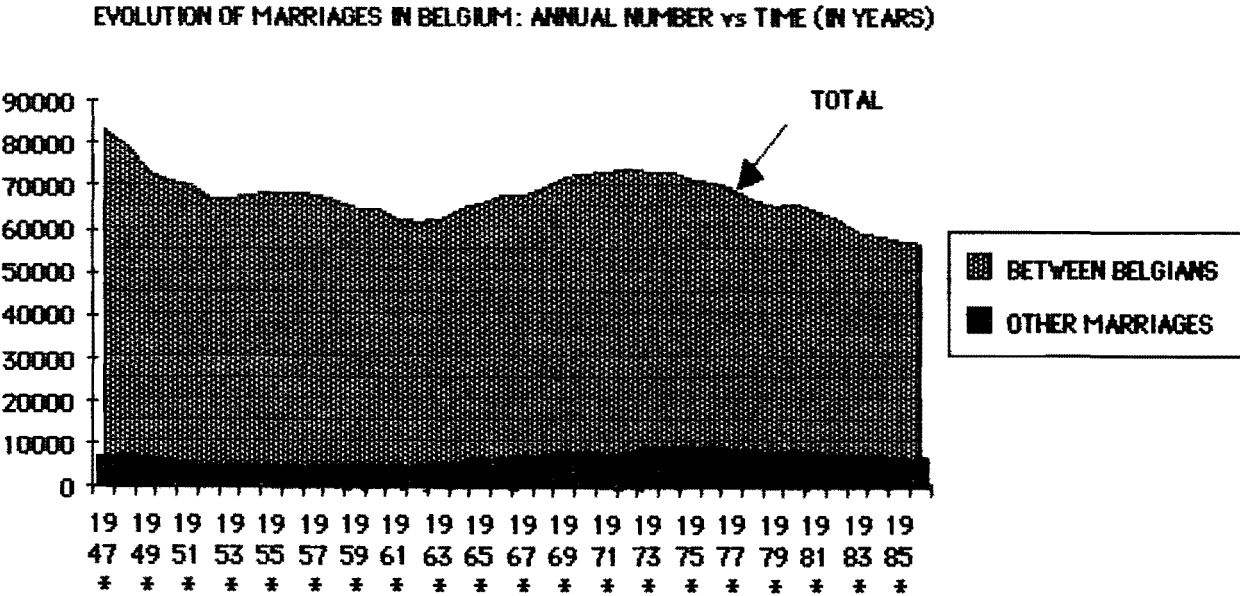
## 2. MARRIAGE IN BELGIUM

Fig.1 gives a bird's eyeview of the evolution of the annual number of marriages in Belgium together with its decomposition into marriages taking place between Belgians and those involving Non-Belgians.

FIGURE 1 HERE

The post war marriage boom, brought on by the postponement of marriages in war time, was the work not merely of Belgians. Foreigners too contributed in fairly substantial measure to the general effort: over 10% of the marriages in 1948 and 1949 involved the participation of a non-national (See Table 1). Post war marriage fever is however not indicative of general, undisturbed marriage market activity: and the subsequent decrease in the number of annual marriages which followed was only to be expected. This diminution was interrupted in the early sixties; and the corresponding curve begins to rise, and continues to do so (see Fig.1), till 1972 - in response, partially at least, to the presence of rising numbers in the marriage market \*3\*: rises of 6% and 3% respectively are seen to occur among marriageable men and women in Belgium between 1961 and 1971. During this same period spectacular rises of 34% and 50%, among marriageable non-Belgian men and women respectively, were recorded; accounting very probably for the observed 50% rise (between 1961 and 1971) in the marriages in which non-nationals had a hand. The fall

Figure 1: Evolution of Marriages in Belgium: Annual Number\* vs. Time.



\* 1) Total  
 2) Marriages between Belgians  
 3) Other marriages

in the marriage curve since 1972 – the 1986 value is the lowest registered since the war – has been interpreted and commented on elsewhere as being indicative of a general attitude of disenchantment in regard to marriage \*4\*. That this movement away from marriage was experienced by both Belgians as well as non-nationals is shown to some extent by the fall in marriage rates, given in Table 2 \*5\*, experienced in each case by both sexes.

It is because the annual volume of marriages is strongly influenced by the size and age distribution of each of the sexes (i.e. the state of the marriage market), and as such is no indicator of pure marriage behaviour, that rates have to be calculated. This conventional and orthodox expedient of using rates (be they crude or age specific) to eliminate difficulties connected with population size and age distribution \*6\* is however insufficient here. The marriages of foreigners registered in Belgium are very probably only a fraction of the total number of nuptial unions entered into by foreigners residing in Belgium. A fair (substantial?) number among them presumably get married out of the country, and consequently would make no contribution to the numerators that would figure in rates calculated off Belgian registration data. Only a partial picture of the nuptial habits of Non-Nationals in Belgium would thus result from their use. Moreover, given the state of available data, one cannot calculate age specific rates of the nationality specific kind needed here outside census time. We have therefore made a maximum use of the decomposition of annual marriages available in published registration data to reveal some of the features related to the state of social integration in the country.

The decreasing importance of in-marriage among Belgians and the complementary rise in the importance of non-national participation in the formation of nuptial unions in Belgium is hinted at in Fig 1. More light is shed in this connection through Table 1 which decomposes the number of annual marriages (from 1947 through 1986) into a number of useful percentages. One notes:

- the increasing importance of marriages involving foreign participation: there has been an almost uninterrupted rise since 1955, with the 10% mark being reached in 1965. The 13% level has been retained since 1973.
- the evident increase over time of the charm exerted by Belgian women on foreign men. The percentages in question climb from a low 3% in the mid-fifties to approximately double this value in the early seventies. This value is by and large retained thereafter. Less spectacular, though sustained, rises are also seen in the case (especially) of Belgian men who marry foreign women, and in that (to a lesser extent) of foreigners marrying among themselves.

These first indications obtained through a simple study of percentages are however, at best, inadequate indicators of in-marriage and intermarriage. Differential population size and structure (by sex and age) make the interpretation of these simple indicators unclear. These difficulties are met to some degree in the indices used in the present article to study the extent and evolution of in-marriage and intermarriage. The next section carries some notes explaining the indices in question. Two types of indices were experimented with. The first deals with in-marriage and intermarriage as such, with no explicit reference to either of the two sexes. This index was used in an effort at measuring the degree of nuptial indifference (as seen through in-marriage) and, complementarily, that of nuptial preference or attraction (mirrored in intermarriage) existing between Belgians and Non-Belgians \*7\*. The second index used permits sex specific measures of characteristics relevant to the present discussion. This index, originally proposed by Alan Gray in 1987 \*8\*, is used in the present article in connection with a series of different nationalities and nationality groups in Belgium. These groups (composed of nationalities characterised by supposedly similar nuptial behaviour) were formed partly to avoid the problem of small numbers, and partly because group differences arising from different sociologically homogeneous intra-group behaviour, rather than from mere nationality, could be studied through their use.



### 3. METHODS

#### 3.1. Indifference vs. Preference

The ratio,  $I_1$  (say), of in-marriages occurring in a given year to the total number of marriages taking place in the same year would, at first sight, seem to constitute an appropriate measure of nuptial indifference. We would thus have

$$I_1 = \frac{M_B + M_F}{M_B + M_F + M_m} \quad \text{Eqn (1a)}$$

where  $M_B$  = in-marriages among Belgians

$M_F$  = in-marriages among foreigners

$M_m$  = inter-marriages (i.e. "mixed marriages") between foreigners and Belgians.

Its complement, the index of preference  $P_1$  (say), would consequently take the form

$$P_1 = \frac{M_m}{M_B + M_F + M_m} \quad \text{Eqn (1b)}$$

On closer inspection, one sees that  $I_1$  can be expressed as the weighted sum

of two in-marriage ratios: one,  $\frac{M_B}{M_B + M.}$ , for in-marriage among Belgians, and the other,  $\frac{M_F}{M_F + M.}$ , for in-marriage among foreigners.

Thus we have

$$I_1 = \frac{M_B + M.}{M_B + M_F + M.} \cdot \frac{M_B}{M_B + M.} + \frac{M_F + M.}{M_B + M_F + M.} \cdot \frac{M_F}{M_F + M.} \quad \text{Eqn (2)}$$

$I_1$  is seen to have all qualities desirable in such an index (see Appendix 1) except one: the weights in Eqn 2 do not add up to unity.  $I_1$  cannot thus be considered a weighted average (as it ideally should) of the indifference of Belgians on the one hand and of foreigners on the other. This difficulty is however overcome if the index of indifference (now written as  $I_2$ ) were formulated as in Eqn 3a which follows

$$I_2 = \frac{M_B + M_F}{M_B + M_F + 2M.} \quad \text{Eqn (3a)}$$

giving

$$I_2 = \frac{M_B + M.}{M_B + M_F + 2M.} \cdot \frac{M_B}{M_B + M.} + \frac{M_F + M.}{M_B + M_F + 2M.} \cdot \frac{M_F}{M_F + M.} \quad \text{Eqn (3b)}$$

$I_2$  contains all the advantageous qualities of  $I_1$  and is moreover a weighted average. The corresponding index of preference,  $P_2$  (say), is given by

$$P_2 = 1 - I_2$$
$$= \frac{2M.}{M_B + M_F + 2M.} \quad \text{Eqn (3c)}$$

Fig 2 shows the evolution of  $I_2$  and its complement  $P_2$  for the period

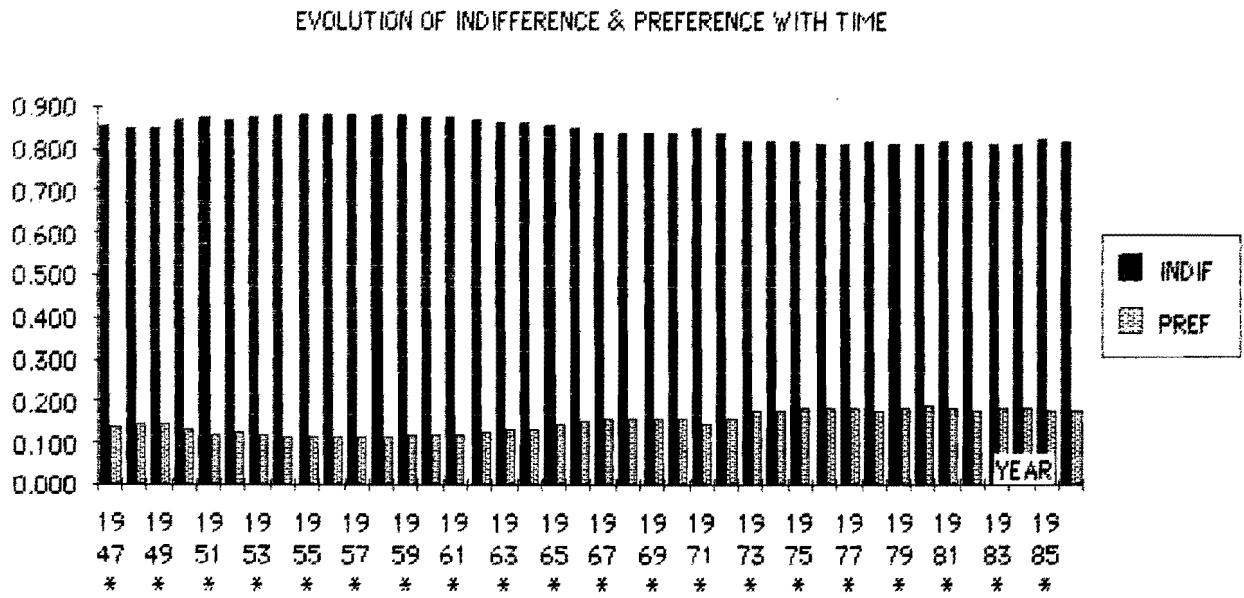
FIG 2 here

1947-1986. Mutual indifference between Belgians and non-Belgians, in so far as marriage is concerned, is seen to decrease from the mid-fifties till the mid-seventies and remain fairly stationary thereafter. Preference, complementarily, increases and then remains constant. One notes that this increase in preference occurs more or less simultaneously with, and hence in spite of, the rise in percentage of in-marriages among foreigners which was noted earlier in the text. The present situation, as also that obtaining over the last twenty years, is thus much happier as concerns integration than it has been in earlier times.

### 3.2. Gray's Index of Social Distance

The measures of indifference and preference discussed so far carry no specific reference to one or other of the two sexes. A full discussion of the absence of integration as seen in in-marriage (or its presence as manifested through intermarriage) however calls for:

Figure 2: Evolution of Indifference and Preference, in Belgium, with time.



- 1) the introduction of such a distinction. The level at which Magrebian ladies in Belgium, for example, participate in common social living with persons outside their own group need not be the same as the degree of integration in Belgium of their male counterparts.
- 2) some idea about how the integration process for a given sex varies in function of the specific culturally homogeneous way of life (i.e. the homogeneous whole) to which persons of the sex in question belong.

Assuming that nationality (or a group of nationalities) sufficiently indicates such a homogeneous whole, we need to measure integration - the level of its presence or absence- by indices which are both sex and nationality specific. This is done through the use of the indices VM and VF (respectively for males and females, of a given nationality or nationality group) proposed by Gray. The theory leading to these indices can be summarised as follows. (The explanation which follows is carried out in terms of Italian males in Belgium. The discussion is carried out in terms of events occurring in, and indices relative to, one calendar year).\*9\*

An in-marriage rate for Italian males,  $IM(0)$  say, defined as the ratio of the number of marriages in which both partners are Italians to the total number of marriages entered into by Italian men, is easily computed from available registration data. Apart from the observation that the numerator and the denominator of  $IM(0)$  can be replaced by correspondingly relevant probabilities as in Equation 5 (see below), it is not difficult to see that  $IM(0)$  is determined both by the preference of Italian men for Italian women as well as by the manner in which Italian men and women are present in the marriage market in Belgium. One also notes that this second marriage market factor is of a composite nature including (1) the numerical availability of the two sexes and (2) other socio-cultural factors which control the formation of the group in which Italian men and women are ready, in potentia proxima, to choose their partners (i.e. the marriage market). An index suitable for the purposes at hand would therefore be one which makes

use of the readily available  $IM(0)$  while at the same time eliminating any dependence, as far as its interpretative use is concerned, on pure numerical representation of the sexes in the marriage market.

With this in mind, one begins by using the standard elementary equation defining conditional probability as an instrument which helps to give expression to the probability ( $P(N_{ij})$  say) that a male from group  $i$  marries a female from group  $j$ . Thus we have:

$$P(N_{ij}) = P(P_{ij}) \cdot P(C_{ij}) \quad \text{Eqn (4a)}$$

where  $P(P_{ij})$  = the probability that a male from  $i$  meets a female from  $j$  in the marriage market.

$P(C_{ij})$  = the probability that a male from  $i$  chooses a female from  $j$  as partner in marriage on the condition that they find themselves already in the marriage market.

Since  $P(P_{ij})$  depends on numerical availability of the sexes as well as on other socio-cultural  $i$  and  $j$  group specific factors (which determine marriage market formation), it can conveniently be expressed as

$$P(P_{ij}) = X_{ij} \cdot P(M_i) \cdot P(F_j) \quad \text{Eqn (4b)}$$

where  $P(M_i)$  = the proportion, relative to all males, of males from  $i$  readily available for marriage market formation;

$P(F_j)$  = the proportion, relative to all females,  
of females from  $j$  readily available for  
marriage market formation;

$X_{ij}$  = a factor which takes care of any  $ij$  specific  
pressure towards, or obstacles hindering,  
marriage market formation.

By substitution we have

$$P(N_{ij}) = P(M_i) \cdot P(F_j) \cdot P(C_{ij}) \cdot X_{ij} \quad \text{Eqn (4c)}$$

Coming back to the in-marriage rate (introduced earlier) for Italian males,  
one sees fairly easily that (as stated above) it can be expressed in terms of  
probabilities as follows:

$$IM(0) = \frac{P(N00)}{P(N00) + P(N01)} \quad \text{Eqn (5)}$$

where  $P(N00)$  stands for the probability of Italian  
men marrying Italian women: and  $P(N01)$  for the  
analogous probability related to Italian men and  
non-Italian women. (N.B. 0 signifying "Italian", and  
1 "non-Italian" respectively replace  $i$  and  $j$  in the  
general expression for the probability concerned).

Substituting in Eqn(5) using Eqn(4c) and simplifying, we have

$$IM(0) = \frac{P(F0).P(C00).X00}{P(F0).P(C00).X00 + P(F1).P(C01).X01} \quad \text{Eqn (6)}$$

which, since  $P(F1) = 1-P(F0)$ , gives

$$IM(0) = \frac{P(F0).KM}{1 + P(F0).(KM-1)} \quad \text{Eqn (7)}$$

$$\text{where } KM = \frac{P(C00).X00}{P(C01).X01} \quad \text{Eqn (8)}$$

In KM we have the sex specific index of in-marriage preference we are looking for. It depends only on i and j ( 0 and 1 in our case) specific factors - i.e.:(1) those controlling marriage market formation on the one hand (thus X00 and X01, which are related to social barriers to meeting in the marriage market) and (2) those controlling partner choice following presence in the marriage market (thus P(C00) and P(C01), which are related to social distance after meeting) on the other. A knowledge of IM(0) and P(F0) is sufficient to calculate KM (see Eqn(7)). However, KM can take any value greater than or equal to unity (N.B. KM = 1 would imply a situation of no preference. Values of KM less than unity are unlikely to occur), and it is desirable to work with an index which can only move between boundaries well defined at both ends, and not merely at the lower boundary as in the case of KM. This is what we have in the KM related index, VM(0) (defined in Eqn(9)), which conveniently moves between zero and one as KM moves respectively between unity and infinity (in the limit).



$$VM(0) = \frac{\sqrt{KM} - 1}{\sqrt{KM} + 1} \quad \text{Eqn (9)}$$

It is interesting to note that, for any given value of  $KM$ ,  $VM(0)$  has a fixed relationship with the value of  $IM(0)$  obtained at that point of the  $IM(0)$  curve (as given in Eqn(7)) where the rate of increase of  $IM(0)$  with respect to  $P(F0)$  is equal to unity. (See Appendix 2 for further details and clarifications). In other words,  $VM(0)$  is a function only of a standardised value of  $IM(0)$ ; and this is extremely beneficial for the validity of comparisons made through its use.\*10\*

As seen above, the calculation of  $VM(0)$  calls for a knowledge of  $P(F0)$ . This is estimated by the ratio of the number of Italian brides to the total number of brides for the given year.\*11\*

An index  $VF(0)$  is, mutatis mutandis, calculated for Italian women using  $IF(0)$ , the female counterpart of  $IM(0)$ , and  $P(M0)$  which is estimated in analogous fashion to  $P(F0)$ .  $VM(0)$  and  $VF(0)$  are thus Gray's indices for measuring the in-marriage preference of Italian men and women respectively or, equivalently, their social distance from non-Italian women and men in Belgium. A value of  $VM(0)$  close to unity would indicate that Italian men keep a great distance between themselves and the non-Italian community in Belgium; hence aloofness and non-integration. A value close to zero would indicate the contrary. In the rest of this article we will, to simplify notation and generalise its significance, use  $VM$ ,  $VF$ ,  $IM$ ,  $IF$ ,  $PM$ , and  $PF$  instead of  $VM(0)$ ,  $VF(0)$ ,  $IM(0)$ ,  $IF(0)$ ,  $P(M0)$  and  $P(F0)$ .

Table 3 gives the annual  $IM$  and  $IF$  values together with the corresponding  $VM$  and  $VF$  values for Belgium for the period 1947-1986. The following observations are noteworthy:

- VM values are generally superior to the corresponding VF values, indicating that Belgian men are as a rule more conservative as regards their choice of partners than Belgian women. This is much more true over the last twenty five years than in earlier times.
- Male attitudes show signs of becoming slightly less conservative over the last twenty years.
- Female attitudes as seen through VF seem to be more stable than male attitudes.

Table 4 gives IM, IF, PM, PF, VM and VF vales for the period 1966-1986 (published data found in "Statistiques Démographiques" do not cover any years before 1966. Data for 1984, 1985 and 1986 have not as yet been published.)  
for:

- 1) the following nationalities: those of Belgium, France, Greece, Italy, and Turkey. These nationalities are designated respectively by the following abbreviations: BELG, FRAN, GREC, ITALY and TURK.
- 2) the following groups of nationalities: those of
  - Great Britain and Northern Ireland designated BRIR;
  - Poland and Yugoslavia (to which are added Czechoslovakia, Hungary and U.S.S.R. from 1970 onwards) forming an East European block and designated EEUR;
  - Holland, Germany and Luxembourg called HOGL;
  - Spain and Portugal designated IBER;
  - Algeria, Tunisia and Morocco forming a Magrebian block with designation MAGREB;
  - The rest of the African countries without Egypt called AFRI. Here we have mainly Zaire, Ruanda and Burundi; and
  - U.S.A., Canada and Oceania designated USCO.

Table 5 gives the same information in a way which favours international and inter group comparisons. Figs 3a and 3b show the evolution of VM and VF for nationalities and nationality groups which have provided Belgium with a good part of her immigrant labour force - the so called "Guest Workers". Figs 4a and 4b similarly cover the rest of the cases - i.e. the "richer" nationalities or nationality groups present in Belgium. To facilitate comparisons, the case of Italy is found in all figures.

FIGS 3a, and 3b followed by  
FIGS 4a and 4b HERE

#### 4. DISCUSSION

As can be expected, VF values follow VM values very closely and in all cases with invariable regularity: it is, after all, most unlikely that men and women belonging to the same group have widely differing attitudes to persons outside their group. While keeping close to the corresponding VM values, VF values are as a general rule higher; indicating a greater conservatism on the part of women: i.e. they don't seem to integrate as well as men. This traditional female "backwardness" is most pronounced in the case of Magrebbians. Two exceptions however: Eastern Europeans and Belgians. Thus the charm exerted by Belgian women on foreign men, and hinted at above in connection with Table 1 as being stronger than that which exists between Belgian men and foreign women, is both confirmed and seen as something which is not a mere function of numerical availability.

The very low VM and VF values for Belgians - so low (around 0.1) that they cannot conveniently be included together with those of other nationalities in the same graph - indicate that they (both Belgian men and women) make good use of the presence of foreigners to find partners for themselves. This open attitude towards non-nationals is, as was stated above, more clearly manifested among Belgian women than among Belgian men.

Figure 3a: The "Guest Worker" nationalities and nationality groups (Male)

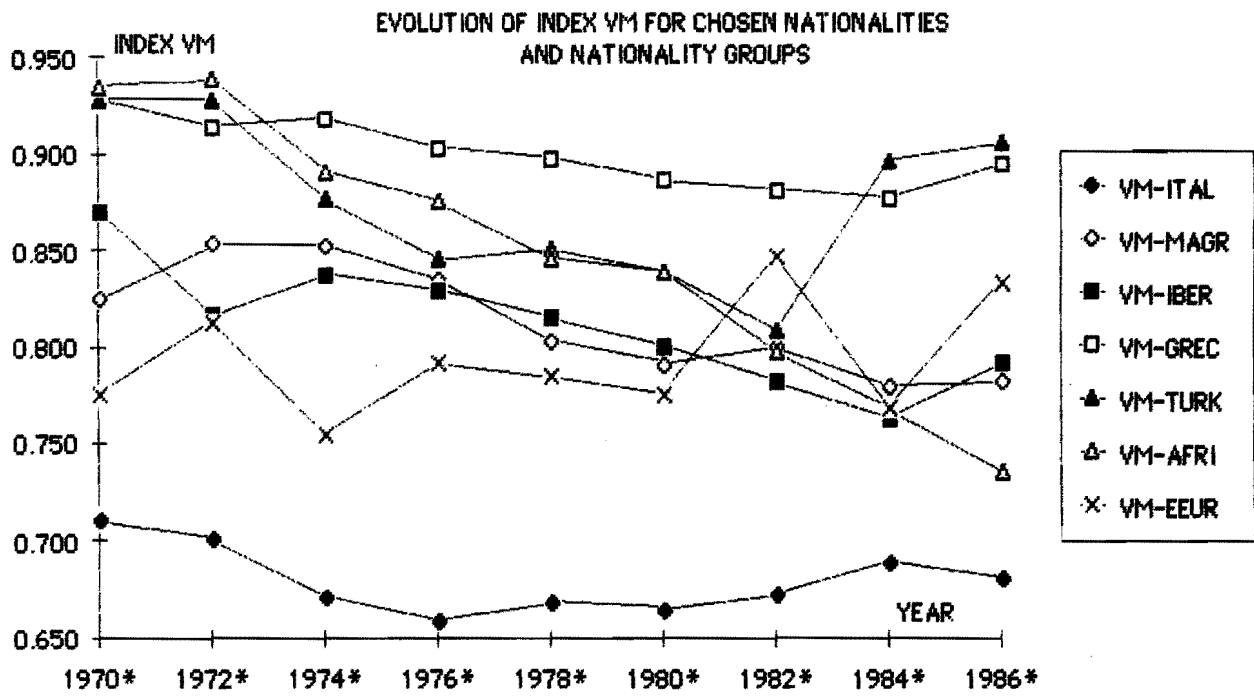


Figure 3b: The "Guest Worker" nationalities and nationality groups (Female)

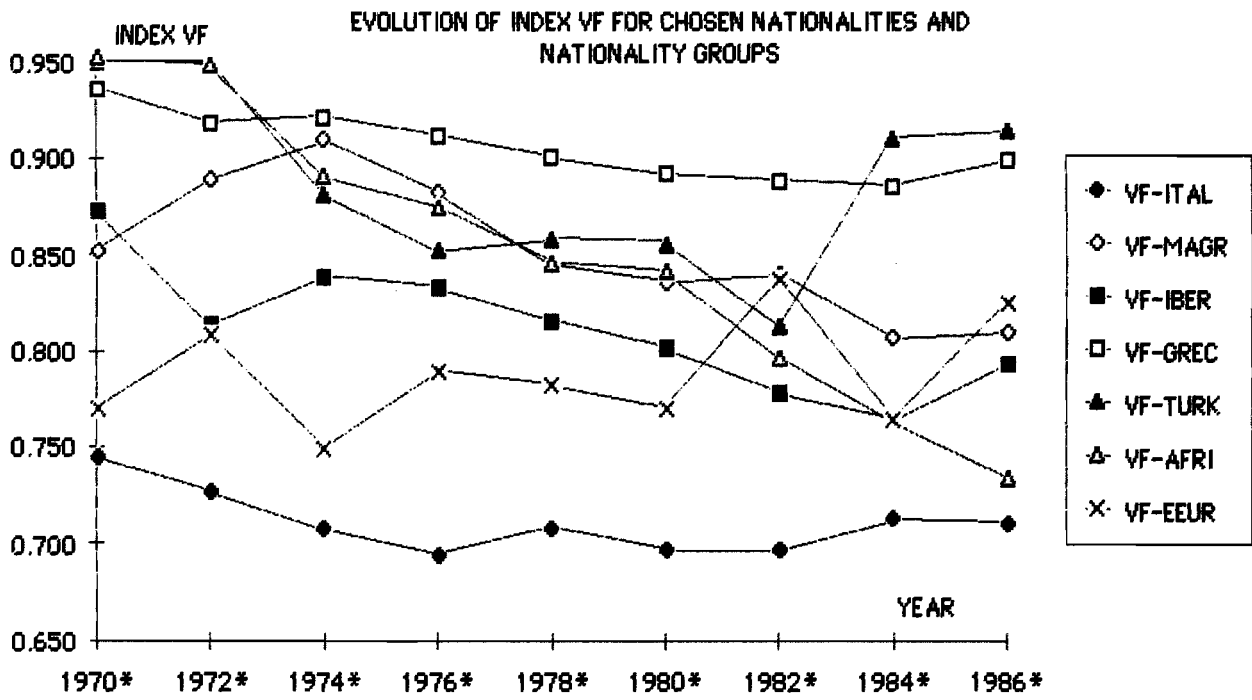
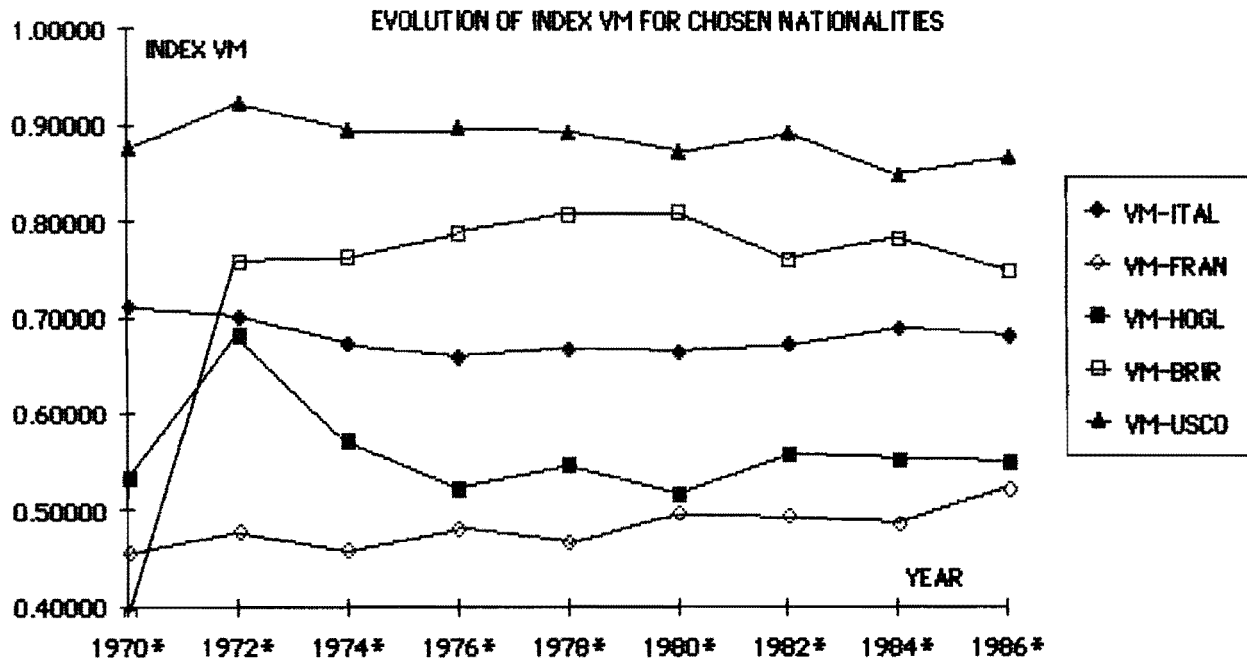
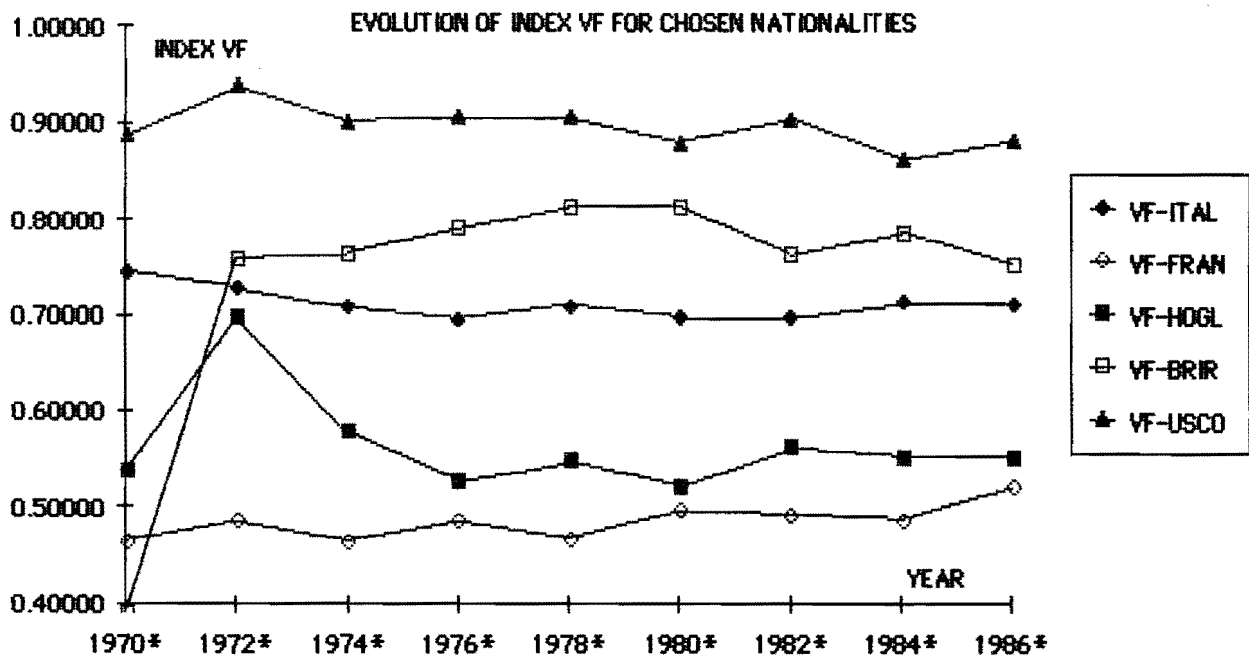


Figure 4a: The "richer" nationalities and nationality groups (Male)



ITALY present for comparison purposes

Figure 4b: The "richer" nationalities and nationality groups (Female)



ITALY present for comparison purposes

In the short period for which published data exists, the indices of the "richer" nationalities (groups) show far less signs of definitive trend than those of the rest: and, bar the two sudden movements of BRIR and HOGL in 1970 and 1972 (which appear to be chance variations), show a high degree of stability. While only the French show clear signs of having moved away from the rest of human community in Belgium, most of the "poorer" (i.e. the "guest worker") groups manifest a movement towards greater integration. The rise in VM and VF values seen in a few cases at the very end can, in view of this general movement, be perhaps interpreted as being due either to chance variation or to the presence of a greater conservatism brought in by the new type of family linked immigrant coming to Belgium as a result of recent governmental policy concerning foreigners in Belgium - one thinks, for example, of the Gol 1984 law.

Since the indices of practically all the nationalities (groups) studied experience no sudden variations for a number of years before 1980, it is convenient to use the 1980 values as an indication of relative position on the social distance scale in the recent past. Going from best integrated (or least conservative) to least integrated (or most conservative) we have, for both sexes, BELG followed by her neighbours FRAN and HOGL; then ITALY followed by EEUR. Integration does seem to increase with increased neighbourliness and duration of stay. These factors do not always prevail - MAGREB males get the better of IBER males (though their rankings are interchanged for females), and BRIR (thanks to its traditional insularity?) follows MAGREB and IBER for both sexes. Thereafter TURK and AFRI (very close to each other) are followed by GREC (last for females) and USCO (last for males).

To conclude, the following points need to be underlined. The "guest workers" (and Italy too belongs to this group) have shown signs of increasing integration in the last twenty years; whereas the "richer" groups show no signs of change. In the case of groups with long average duration of stay in Belgium (e.g. the Italians) the situation could however be even better than that indicated by Gray's indices. "In-marriage" does not have the



same connotations for marriages between the grand children of Italian immigrants (who, having lived their lives here, are much more Belgian than Italian in many ways) and for marriages between Italians who are direct immigrants (who probably continue to be Italian in most things): and consequently these second and third generation Italian in-marriages are not necessarily indications of social distance from the rest of the community \*12\*. A rise of VM and VF - they increase with increasing in-marriage rates - does not therefore have the same univocal meaning in all cases. A lowering of these indices however does seem to be a happy sign in all instances. In the light of these last remarks, the rise of VM and VF values at the end of the period studied in certain cases does not necessarily indicate a deterioration of the situation.

It is important to point out that if, as indicated by the data (cf supra), the level of intermarriage has grown and remained fairly substantial over quite a long period in the recent past, it means that we are witnessing a process which is extremely conducive to the formation of a pluri-ethnic society. If moreover the level of integration of these "foreign" groups in the Belgian community is on the whole rising, as the evidence presented above seems to indicate, it is a sign that the Belgium of tomorrow is one in which the appellation "foreign" will be progressively emptied of meaning. Finally, if integration is desirable (as most people would surely agree), the amelioration of the situation (in this regard) witnessed in Belgium, should at all cost be safeguarded.

NOTES

- \*1\* See, for example
- a) Wattelar C. and Wunsch G.: "Etude démographique de la nuptialité en Belgique" (Université Catholique de Louvain, 1967).
  - b) Willems P. and Wijewickrema S.: "The evolution of nuptiality in Belgium from 1954 to 1981" (IPD-Working Paper 1985-2, Vrije Universiteit Brussel).
- \*2\* Masui M.: "Interetnische Huwelijken" (CBGS Rapport 43/1981, Centrum voor Bevolkings- en Gezinsstudies).
- \*3\* See Willems and Wijewickrema, op. cit.
- \*4\* See Willems and Wijewickrema, op. cit.
- \*5\* The rates in Table 2 have been calculated for the age group 15-29 in which at least 80% of all marriages take place - this being so both in the case of foreigners and Belgians; and also in relation to both sexes. Since a large fraction of these marriages are those of single persons, the sex specific rates of Table 2 were first computed by dividing the average annual number of (15-29 age group) marriages of the sex concerned (for the period in question) by the never-marrieds of the same sex (and age group) present in the middle of the period. However, a small number of marriages in this age group are those of ever-marrieds. This is why a second rate using a different denominator (undifferentiated as far as marital status is concerned) is also presented in Table 2. In all cases we see a fall in rates.
- \*6\* Conventionally used sex and age specific rates do not give complete satisfaction when faced with a process, like nuptiality, which is essentially two-sex in nature. (See Wijewickrema S.M. (1980) for a fairly complete overview of the two-sex problem). In the absence of data which permit the use of two-sex related rates hitherto proposed, and since even these cannot be said to be completely satisfactory,

general demographic practice has had to be content with the use of the classical one sex specific rates. Apart from the two-sex nature of the problem, a number of supplementary difficulties arise when it is a question of handling the nuptiality of foreigners. Our text makes only a slight allusion to these problems. A more detailed discussion is found in Tribalat M. (1988).

- \*7\* We deal here with the preference/indifference of Belgians toward foreigners; and vice versa.  
We will, later in the text, also speak of the preference of a given group for its own members (e.g. Belgians for Belgians) – as seen in in-marriage.
- \*8\* Gray A.: "Intermarriage: opportunity and preference" (Population Studies, 1987(3), 365–379).
- \*9\* – The discussion which follows is only intended to help the lector with the reading of our own text. Some notes of a more detailed nature are found in Appendix 2.  
– The theory, which is explained in our text in terms of Italian males, can obviously be extended to other nationalities (or nationality groups), and to any one sex at that.
- \*10\* In any given case therefore VM is equal to a fixed relationship with a specific value of IM (on the IM, P(F) curve): that which exists when the increase of IM equals the increase of P(F).
- \*11\* An obvious weakness in theory, but the only one possible under the circumstances obtaining as concerns data!
- \*12\* Cf. Price and Zubrzycki (1962) for a full discussion re the problems of interpreting marriage indices as indicators of integration.

BIBLIOGRAPHY

- GRAY A.: "Intermarriage: opportunity and preference" (Population Studies, 1987(3), 365-379).
  
- MASUI M.: "Interethnische huwelijken" (CBGS Rapport 43/1981, Centrum voor Bevolkings- en Gezinsstudies).
  
- PRICE C. and ZUBRZYCKI J.: "The use of intermarriage statistics as an index of assimilation" (Population Studies, 1962(1), 58-69).
  
- TRIBALAT M.: "Problèmes liés à l'étude de la nuptialité des migrants" (Population, 1988(2), 375-390).
  
- WATTELAR C. and WUNSCH G.: "Etude démographique de la nuptialité en Belgique" (Université Catholique de Louvain, 1967).
  
- WIJEWICKREMA S.: "Weak ergodicity and the two-sex problem in demography" (Unpublished doctoral dissertation, Vrije Universiteit Brussel, 1980).
  
- WILLEMS P. and WIJEWICKREMA S.: "The evolution of nuptiality in Belgium from 1954 to 1981" (IPD-Working Paper 1985-2, Vrije Universiteit Brussel).

**APPENDIX 1: Concerning the index  $I_1$**

$I_1$  is seen either to take values which range from 0 to 1, or become meaningless when it should. These characteristics (ideal in an index of this sort) are easily displayed (through a study of Eqn (1a) in the text) as follows:

1) Case of total indifference:  $M_s = 0$

- a) If  $M_B \neq 0$  and  $M_F \neq 0$ , then  $I_1 = 1$
- b) If  $M_B \neq 0$  and  $M_F = 0$ , then  $I_1 = 1$
- c) If  $M_B = 0$  and  $M_F \neq 0$ , then  $I_1 = 1$
- d) If  $M_B = 0$  and  $M_F = 0$ , then  $I_1$  is meaningless.

2) Other cases:  $M_s \neq 0$

- a) If  $M_B \neq 0$  and  $M_F \neq 0$  (which is what obtains in most cases) then  $0 < I_1 < 1$
- b) If  $M_B \neq 0$  and  $M_F = 0$ , then  $0 < I_1 < 1$  (where  $I_1$  takes the value of the in-marriage ratio of the Belgians)
- c) If  $M_B = 0$  and  $M_F \neq 0$ , then  $0 < I_1 < 1$  (where  $I_1$  takes the value of the in-marriage ratio of the foreigners)
- d) If  $M_B = 0$  and  $M_F = 0$ , then  $I_1 = 0$   
i.e. the case of total preference.

## APPENDIX 2: Notes on Gray's indices

As in the text we will use the case of Italian males. Only  $VM(0)$  will be considered in the discussion that follows since the results made will apply in analogous fashion to  $VF(0)$  too. Since  $VM(0)$  is a function only of, and thus gets its meaning from,  $KM$  (see Eqn (9)); these notes begin by a consideration of  $KM$ .

To simplify the symbolism we will use:

i for  $IM(0)$   
p for  $P(F0)$   
k for  $KM$   
v for  $VM(0)$

Apart from the indications concerning  $k$  given in the main text, it is necessary to point out, with Gray, that while it ( $k$ ) is two-sex in composition (see Eqn (8), which follows considerations essentially bearing on the marriage market) it is specific to the male sex in its interpretation. This is certainly its most attractive feature. Unfortunately, Eqn (8) is obtained at the price of a number of serious simplifications. Two of them need to be noted:

- (a) The uniformity (across all man-woman pairs of the groups concerned) of the probability of meeting between a man from one group with a woman of another; and the analogous uniformity of selection which follows meeting (cf. Gray, *op. cit.*, p.367). These assumptions are extremely strong - e.g. they neglect all differentiation which comes in with age differences of the two sexes (cf. Wijewickrema S. (1980) in this connection) - and leaves one with a strong feeling of unease.
- (b) The estimation of  $p$  by the corresponding proportion of female marriages.

Both (a) and (b) however do yield  $k$  which has all the advantages noted above: and, given the usual data limitations, can be admitted for the moment. The following remarks should help the reader:

Eqn (7) can be simplified into:

$$i = \frac{p \cdot k}{1 + p(k-1)} \quad \text{Eqn (a)}$$

Hence,

$i'$  = the first derivative of  $i$  relative to  $p$

$$= \frac{k}{(1 + p(k-1))^2} \quad \text{Eqn (b)}$$

Using Eqn (b), one sees that:

$i' = 1$  implies that, if  $k > 0$  and  $\neq 1$ ,

$$p = \frac{1}{\sqrt{k} + 1}$$

$$i = \frac{\sqrt{k}}{\sqrt{k} + 1}$$

$$= 1 - p$$

and

$$v = \frac{\sqrt{k} - 1}{\sqrt{k} + 1} = 2i - 1$$

Thus  $v$  is a function only of that value of  $i$  obtained when  $i'=1$  on the  $i, p$  curve (Eqn (a)).

When  $k=1$ ,  $i=p$  in Eqn (a). This is the special case of no preference. Here  $i'=1$  always.

Table 1: Evolution of the total number (accompanied by percentage decomposition into chosen parts of the same) of Annual Marriages in Belgium from 1947 to 1986.

Year	total	% BM+BF	%BM+FF	%FM+BF	%FM+FF	100- %BM+BF
1947*	83665.	91.02	3.44	4.07	1.47	8.98
1948*	79737.	89.75	3.98	3.99	2.28	10.25
1949*	73453.	89.94	3.77	4.11	2.18	10.06
1950*	72023.	90.85	3.32	3.80	2.04	9.15
1951*	70541.	91.62	3.02	3.54	1.82	8.38
1952*	67340.	91.64	3.17	3.63	1.56	8.36
1953*	67742.	91.79	3.16	3.44	1.61	8.21
1954*	67931.	92.17	3.09	3.20	1.54	7.83
1955*	68881.	92.13	3.22	3.11	1.54	7.87
1956*	68700.	92.21	3.09	3.08	1.62	7.79
1957*	68338.	91.96	3.13	3.02	1.89	8.04
1958*	67193.	91.30	3.17	3.16	2.37	8.70
1959*	65135.	91.28	3.21	3.19	2.32	8.72
1960*	65220.	91.36	3.22	3.37	2.05	8.64
1961*	62371.	91.42	3.20	3.43	1.95	8.58
1962*	62086.	91.17	3.30	3.57	1.96	8.83
1963*	62449.	90.45	3.26	3.96	2.33	9.55
1964*	65008.	90.13	3.12	4.28	2.48	9.87
1965*	66535.	89.27	3.20	4.64	2.89	10.73
1966*	68330.	88.85	3.33	4.85	2.96	11.15
1967*	68309.	88.44	3.30	5.32	2.94	11.56
1968*	69713.	88.25	3.39	5.42	2.94	11.75
1969*	72330.	88.29	3.39	5.51	2.81	11.71
1970*	73261.	88.38	3.28	5.60	2.74	11.62
1971*	73644.	89.32	2.97	4.98	2.74	10.68
1972*	74352.	88.26	3.34	5.52	2.89	11.74
1973*	73664.	86.61	3.86	6.15	3.37	13.39
1974*	73567.	86.53	3.75	6.15	3.57	13.47
1975*	71736.	86.17	3.96	6.15	3.72	13.83
1976*	71142.	86.28	4.04	6.25	3.44	13.72
1977*	69073.	86.19	3.96	6.29	3.56	13.81
1978*	67127.	86.39	4.04	6.02	3.55	13.61
1979*	65429.	86.41	4.07	6.09	3.43	13.59
1980*	66369.	86.00	4.28	6.18	3.53	14.00
1981*	64380.	86.44	4.20	5.91	3.45	13.56
1982*	62341.	86.70	4.24	5.64	3.43	13.30
1983*	59629.	86.42	4.35	6.00	3.23	13.58
1984*	58962.	86.49	4.56	5.69	3.26	13.51
1985*	57559.	86.98	4.17	5.53	3.32	13.02
1986*	56780.	86.70	4.16	5.75	3.39	13.30

% BM + BF = Marriages between Belgian Males and Belgian Females as percentage of Total

% BM + FF = Marriages between Belgian Males and Foreign Females as percentage of Total

% FM + BF = Marriages between Foreign Males and Belgian Females as percentage of Total

% FM + FF = Marriages between Foreign Males and Foreign Females as percentage of Total



Table 2: Marriage rates by sex and nationality (Belgians vs. foreigners), of the age group 15-29, for the periods 1970-71 and 1980-81.

		1970-71	1980-81
FEMALE	1) Belgian	(a) 0.133 (b) 0.068	(a) 0.099 (b) 0.052
	2) Foreign	(a) 0.094 (b) 0.050	(a) 0.072 (b) 0.041
MALE	1) Belgian	(a) 0.095 (b) 0.062	(a) 0.071 (b) 0.047
	2) Foreign	(a) 0.082 (b) 0.053	(a) 0.059 (b) 0.038

N.B.: 1) Rates indicated by (a) = Ratio of marriages for ages 15-29 to number of single women (men) in age group 15-29.

2) Rates indicated by (b) = Ratio of marriages for ages 15-29 to number of all women (men) in age group 15-29.

Table 3: Sex specific in-marriage rates (IM and IF) and indices of Social Distance (VM and VF) for Belgians from 1947 to 1986.

YEAR	IM	IF	VM	VF
1947*	0.964	0.957	0.078	0.068
1948*	0.958	0.957	0.102	0.102
1949*	0.960	0.956	0.103	0.096
1950*	0.965	0.960	0.109	0.098
1951*	0.968	0.963	0.108	0.095
1952*	0.967	0.962	0.090	0.081
1953*	0.967	0.964	0.093	0.087
1954*	0.968	0.966	0.092	0.090
1955*	0.966	0.967	0.089	0.092
1956*	0.968	0.968	0.097	0.097
1957*	0.967	0.968	0.109	0.112
1958*	0.966	0.967	0.130	0.130
1959*	0.966	0.966	0.127	0.127
1960*	0.966	0.964	0.113	0.109
1961*	0.966	0.964	0.110	0.104
1962*	0.965	0.962	0.107	0.100
1963*	0.965	0.958	0.123	0.106
1964*	0.967	0.955	0.134	0.105
1965*	0.965	0.951	0.147	0.112
1966*	0.964	0.948	0.145	0.109
1967*	0.964	0.943	0.144	0.101
1968*	0.963	0.942	0.140	0.099
1969*	0.963	0.941	0.135	0.093
1970*	0.964	0.940	0.136	0.090
1971*	0.968	0.947	0.149	0.101
1972*	0.964	0.941	0.140	0.096
1973*	0.957	0.934	0.139	0.098
1974*	0.959	0.934	0.149	0.103
1975*	0.956	0.933	0.147	0.107
1976*	0.955	0.932	0.136	0.098
1977*	0.956	0.932	0.142	0.100
1978*	0.955	0.935	0.140	0.104
1979*	0.955	0.934	0.135	0.100
1980*	0.953	0.933	0.132	0.101
1981*	0.954	0.936	0.133	0.103
1982*	0.953	0.939	0.132	0.106
1983*	0.952	0.935	0.121	0.095
1984*	0.950	0.938	0.118	0.100
1985*	0.954	0.940	0.130	0.105
1986*	0.954	0.938	0.132	0.104

IM and VM for males  
IF and VF for females

Table 4: Sex specific in-marriage rates (IM and IF), proportions marrying (PM and PF) and indices of social distance (VM and VF) for chosen nationalities and nationality groups from 1966 to 1986 (by alternate years).

	GREC	GREC	GREC	GREC	GREC	GREC
YEAR	IM	IF	PM	PF	VM	VF
1966*	0.6118	0.7647	0.0025	0.0020	0.9313	0.9461
1968*	0.5154	0.7128	0.0019	0.0013	0.9312	0.9466
1970*	0.5231	0.6239	0.0018	0.0015	0.9289	0.9366
1972*	0.3333	0.4000	0.0012	0.0010	0.9140	0.9182
1974*	0.5226	0.5586	0.0021	0.0020	0.9185	0.9215
1976*	0.4536	0.5461	0.0026	0.0021	0.9033	0.9115
1978*	0.4424	0.4710	0.0025	0.0023	0.8975	0.9000
1980*	0.3529	0.4122	0.0023	0.0020	0.8864	0.8914
1982*	0.3043	0.3889	0.0022	0.0017	0.8815	0.8885
1984*	0.2815	0.3838	0.0023	0.0017	0.8770	0.8856
1986*	0.3565	0.4184	0.0020	0.0017	0.8942	0.8991
	BELG	BELG	BELG	BELG	BELG	BELG
YEAR	IM	IF	PM	PF	VM	VF
1966*	0.9639	0.9482	0.9219	0.9371	0.1446	0.1094
1968*	0.9630	0.9421	0.9164	0.9367	0.1404	0.0985
1970*	0.9642	0.9404	0.9166	0.9398	0.1357	0.0903
1972*	0.9636	0.9412	0.9159	0.9378	0.1398	0.0956
1974*	0.9585	0.9336	0.9028	0.9268	0.1491	0.1035
1976*	0.9553	0.9325	0.9031	0.9252	0.1358	0.0980
1978*	0.9553	0.9349	0.9043	0.9241	0.1397	0.1040
1980*	0.9526	0.9329	0.9028	0.9218	0.1324	0.1006
1982*	0.9534	0.9389	0.9094	0.9234	0.1316	0.1064
1984*	0.9499	0.9383	0.9106	0.9218	0.1183	0.1000
1986*	0.9542	0.9378	0.9086	0.9244	0.1323	0.1039
	TURK	TURK	TURK	TURK	TURK	TURK
YEAR	IM	IF	PM	PF	VM	VF
1966*	0.0909	0.1429	0.0002	0.0001	0.9380	0.9397
1968*	0.0400	0.2500	0.0004	0.0001	0.9284	0.9365
1970*	0.3269	0.6800	0.0014	0.0007	0.9282	0.9499
1972*	0.3269	0.6800	0.0014	0.0007	0.9282	0.9499
1974*	0.0303	0.1000	0.0004	0.0001	0.8762	0.8805
1976*	0.0175	0.1111	0.0008	0.0001	0.8447	0.8517
1978*	0.0179	0.1250	0.0008	0.0001	0.8502	0.8580
1980*	0.0323	0.2353	0.0019	0.0003	0.8388	0.8553
1982*	0.0208	0.0667	0.0008	0.0002	0.8077	0.8118
1984*	0.0690	0.3077	0.0010	0.0002	0.8965	0.9101
1986*	0.2097	0.3514	0.0011	0.0007	0.9055	0.9140

IM, PM, VM for males  
 IF, PF, VF for females  
 GREC = Greek  
 BELG = Belgian  
 TURK = Turkish

Table 4 continued

	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY
YEAR	IM	IF	PM	PF	VM	VF
1966*	0.492	0.581	0.025	0.021	0.739	0.760
1968*	0.468	0.587	0.027	0.022	0.725	0.753
1970*	0.440	0.584	0.029	0.022	0.711	0.745
1972*	0.420	0.534	0.028	0.022	0.701	0.727
1974*	0.428	0.570	0.037	0.028	0.672	0.708
1976*	0.399	0.543	0.037	0.027	0.659	0.695
1978*	0.415	0.574	0.038	0.027	0.668	0.709
1980*	0.413	0.542	0.036	0.028	0.665	0.697
1982*	0.416	0.517	0.033	0.027	0.672	0.697
1984*	0.427	0.527	0.030	0.025	0.689	0.713
1986*	0.398	0.529	0.031	0.023	0.680	0.711
	MAGREB	MAGREB	MAGREB	MAGREB	MAGREB	MAGREB
YEAR	IM	IF	PM	PF	VM	VF
1970*	0.041	0.345	0.003	0.000	0.825	0.853
1972*	0.055	0.481	0.003	0.000	0.853	0.889
1974*	0.249	0.734	0.006	0.002	0.853	0.909
1976*	0.231	0.630	0.007	0.002	0.835	0.882
1978*	0.181	0.520	0.008	0.003	0.803	0.845
1980*	0.231	0.551	0.010	0.004	0.791	0.836
1982*	0.255	0.548	0.009	0.004	0.800	0.840
1984*	0.218	0.416	0.008	0.004	0.780	0.806
1986*	0.239	0.444	0.009	0.005	0.782	0.810
	IBER	IBER	IBER	IBER	IBER	IBER
YEAR	IM	IF	PM	PF	VM	VF
1966*	0.667	0.711	0.008	0.008	0.882	0.890
1968*	0.606	0.656	0.007	0.006	0.880	0.887
1970*	0.563	0.580	0.006	0.006	0.870	0.873
1972*	0.338	0.317	0.005	0.005	0.816	0.813
1974*	0.485	0.492	0.007	0.007	0.838	0.839
1976*	0.437	0.463	0.007	0.007	0.829	0.833
1978*	0.408	0.409	0.007	0.007	0.815	0.815
1980*	0.392	0.395	0.008	0.008	0.800	0.801
1982*	0.337	0.308	0.007	0.008	0.782	0.778
1984*	0.297	0.305	0.008	0.008	0.763	0.764
1986*	0.329	0.343	0.007	0.007	0.791	0.793

ITALY = Italian  
MAGREB = Magrebian  
IBER = Iberian

Table 4 continued

	AFRI	AFRI	AFRI	AFRI	AFRI	AFRI
YEAR	IM	IF	PM	PF	YM	YF
1970*	0.2462	0.5926	0.0009	0.0004	0.9350	0.9518
1972*	0.2444	0.4583	0.0006	0.0003	0.9388	0.9479
1974*	0.2154	0.2090	0.0009	0.0009	0.8910	0.8906
1976*	0.1972	0.1818	0.0010	0.0011	0.8754	0.8743
1978*	0.1735	0.1735	0.0015	0.0015	0.8459	0.8459
1980*	0.1471	0.1705	0.0015	0.0013	0.8387	0.8407
1982*	0.1226	0.1171	0.0017	0.0018	0.7970	0.7964
1984*	0.1563	0.1070	0.0022	0.0032	0.7682	0.7625
1986*	0.1279	0.1146	0.0030	0.0034	0.7360	0.7343
	EEUR	EEUR	EEUR	EEUR	EEUR	EEUR
YEAR	IM	IF	PM	PF	YM	YF
1966*	0.2719	0.1378	0.0017	0.0033	0.8281	0.8144
1968*	0.3972	0.2667	0.0020	0.0030	0.8731	0.8611
1970*	0.1789	0.1339	0.0026	0.0035	0.7757	0.7704
1972*	0.1901	0.1459	0.0019	0.0025	0.8131	0.8086
1974*	0.1333	0.0909	0.0020	0.0030	0.7550	0.7499
1976*	0.1603	0.1366	0.0022	0.0026	0.7917	0.7891
1978*	0.1418	0.1180	0.0020	0.0024	0.7847	0.7821
1980*	0.1300	0.0823	0.0015	0.0024	0.7756	0.7703
1982*	0.2439	0.1439	0.0013	0.0022	0.8463	0.8373
1984*	0.1098	0.0726	0.0014	0.0021	0.7687	0.7646
1986*	0.2113	0.1200	0.0013	0.0022	0.8336	0.8251
	FRAN	FRAN	FRAN	FRAN	FRAN	FRAN
YEAR	IM	IF	PM	PF	YM	YF
1966*	0.0621	0.0761	0.0148	0.0121	0.3983	0.4009
1968*	0.0740	0.1027	0.0153	0.0110	0.4561	0.4615
1970*	0.0704	0.1160	0.0173	0.0105	0.4557	0.4643
1972*	0.0756	0.1132	0.0151	0.0101	0.4778	0.4848
1974*	0.0842	0.1151	0.0171	0.0125	0.4584	0.4643
1976*	0.1046	0.1209	0.0163	0.0141	0.4820	0.4851
1978*	0.0946	0.0981	0.0142	0.0137	0.4663	0.4669
1980*	0.1140	0.1092	0.0137	0.0143	0.4967	0.4958
1982*	0.1013	0.0964	0.0122	0.0128	0.4933	0.4923
1984*	0.0931	0.0924	0.0120	0.0121	0.4864	0.4862
1986*	0.1064	0.0988	0.0108	0.0116	0.5223	0.5209

AFRI = African (but not Magrebian or Egyptian)  
 EEUR = Eastern Europe  
 FRAN = French

Table 4 continued

	HOGL	HOGL	HOGL	HOGL	HOGL	HOGL
YEAR	IM	IF	PM	PF	YM	YF
1966*	0.114	0.127	0.012	0.011	0.545	0.547
1968*	0.104	0.128	0.013	0.011	0.528	0.532
1970*	0.095	0.129	0.013	0.010	0.531	0.538
1972*	0.300	0.381	0.019	0.015	0.681	0.696
1974*	0.126	0.168	0.014	0.011	0.570	0.578
1976*	0.098	0.121	0.013	0.011	0.522	0.526
1978*	0.121	0.129	0.012	0.012	0.546	0.548
1980*	0.098	0.117	0.013	0.011	0.517	0.521
1982*	0.122	0.142	0.013	0.011	0.558	0.562
1984*	0.133	0.134	0.013	0.013	0.552	0.552
1986*	0.117	0.138	0.013	0.011	0.549	0.553
	BRIR	BRIR	BRIR	BRIR	BRIR	BRIR
YEAR	IM	IF	PM	PF	YM	YF
1966*	0.042	0.029	0.001	0.002	0.688	0.686
1968*	0.043	0.043	0.002	0.002	0.652	0.652
1970*	0.008	0.009	0.002	0.002	0.389	0.389
1972*	0.054	0.063	0.001	0.001	0.758	0.759
1974*	0.075	0.093	0.002	0.001	0.762	0.764
1976*	0.118	0.135	0.002	0.002	0.789	0.791
1978*	0.132	0.175	0.002	0.002	0.808	0.813
1980*	0.120	0.160	0.002	0.002	0.810	0.814
1982*	0.085	0.104	0.002	0.002	0.761	0.763
1984*	0.108	0.133	0.002	0.002	0.783	0.786
1986*	0.085	0.111	0.002	0.002	0.750	0.753
	USCO	USCO	USCO	USCO	USCO	USCO
YEAR	IM	IF	PM	PF	YM	YF
1966*	0.037	0.250	0.004	0.001	0.772	0.796
1968*	0.221	0.429	0.002	0.001	0.878	0.894
1970*	0.139	0.302	0.002	0.001	0.875	0.886
1972*	0.274	0.553	0.001	0.001	0.921	0.938
1974*	0.272	0.365	0.002	0.001	0.895	0.901
1976*	0.274	0.392	0.002	0.001	0.897	0.905
1978*	0.248	0.423	0.002	0.001	0.893	0.905
1980*	0.165	0.262	0.001	0.001	0.872	0.879
1982*	0.265	0.417	0.002	0.001	0.893	0.904
1984*	0.152	0.296	0.002	0.001	0.849	0.861
1986*	0.178	0.339	0.002	0.001	0.867	0.880

HOGL = Dutch, German and Luxemburg  
BRIR = British and Northern Ireland  
USCO = USA, Canadian and Oceania

Table 5: Rearrangement of VM, VF, IM and IF values, found in Table 4, to help international comparisons.

	ITALY	MAGREB	IBER	GREC	TURK	AFRI	EEUR
YEAR	YM-ITAL	YM-MAGR	YM-IBER	YM-GREC	YM-TURK	YM-AFRI	YM-EEUR
1966*	0.739		0.882	0.931	0.938		0.828
1968*	0.725		0.880	0.931	0.928		0.873
1970*	0.711	0.825	0.870	0.929	0.928	0.935	0.776
1972*	0.701	0.853	0.816	0.914	0.928	0.939	0.813
1974*	0.672	0.853	0.838	0.919	0.876	0.891	0.755
1976*	0.659	0.835	0.829	0.903	0.845	0.875	0.792
1978*	0.668	0.803	0.815	0.898	0.850	0.846	0.785
1980*	0.665	0.791	0.800	0.886	0.839	0.839	0.776
1982*	0.672	0.800	0.782	0.882	0.808	0.797	0.846
1984*	0.689	0.780	0.763	0.877	0.897	0.768	0.769
1986*	0.680	0.782	0.791	0.894	0.906	0.736	0.834
	ITALY	MAGREB	IBER	GREC	TURK	AFRI	EEUR
	VF-ITAL	VF-MAGR	VF-IBER	VF-GREC	VF-TURK	VF-AFRI	VF-EEUR
1966*	0.760		0.890	0.946	0.940		0.814
1968*	0.753		0.887	0.947	0.936		0.861
1970*	0.745	0.853	0.873	0.937	0.950	0.952	0.770
1972*	0.727	0.889	0.813	0.918	0.950	0.948	0.809
1974*	0.708	0.909	0.839	0.922	0.880	0.891	0.750
1976*	0.695	0.882	0.833	0.911	0.852	0.874	0.789
1978*	0.709	0.845	0.815	0.900	0.858	0.846	0.782
1980*	0.697	0.836	0.801	0.891	0.855	0.841	0.770
1982*	0.697	0.840	0.778	0.888	0.812	0.796	0.837
1984*	0.713	0.806	0.764	0.886	0.910	0.762	0.765
1986*	0.711	0.810	0.793	0.899	0.914	0.734	0.825

The case of ITALY is repeated for purposes of comparison

Table 5 continued

	ITALY	FRAN	HOGL	BRIR	USCO	BELG
YEAR	YM-ITAL	YM-FRAN	YM-HOGL	YM-BRIR	YM-USCO	YM-BELG
1966*	0.739	0.398	0.545	0.688	0.772	0.145
1968*	0.725	0.456	0.528	0.652	0.878	0.140
1970*	0.711	0.456	0.531	0.389	0.875	0.136
1972*	0.701	0.478	0.681	0.758	0.921	0.140
1974*	0.672	0.458	0.570	0.762	0.895	0.149
1976*	0.659	0.482	0.522	0.789	0.897	0.136
1978*	0.668	0.466	0.546	0.808	0.893	0.140
1980*	0.665	0.497	0.517	0.810	0.872	0.132
1982*	0.672	0.493	0.558	0.761	0.893	0.132
1984*	0.689	0.486	0.552	0.783	0.849	0.118
1986*	0.680	0.522	0.549	0.750	0.867	0.132
	ITALY	FRAN	HOGL	BRIR	USCO	BELG
YEAR	YF-ITAL	YF-FRAN	YF-HOGL	YF-BRIR	YF-USCO	YF-BELG
1966*	0.760	0.401	0.547	0.686	0.796	0.109
1968*	0.753	0.462	0.532	0.652	0.894	0.099
1970*	0.745	0.464	0.538	0.389	0.886	0.090
1972*	0.727	0.485	0.696	0.759	0.938	0.096
1974*	0.708	0.464	0.578	0.764	0.901	0.103
1976*	0.695	0.485	0.526	0.791	0.905	0.098
1978*	0.709	0.467	0.548	0.813	0.905	0.104
1980*	0.697	0.496	0.521	0.814	0.879	0.101
1982*	0.697	0.492	0.562	0.763	0.904	0.106
1984*	0.713	0.486	0.552	0.786	0.861	0.100
1986*	0.711	0.521	0.553	0.753	0.880	0.104

The case of ITALY is repeated for purposes of comparison



Table 5 continued

	ITALY	MAGREB	IBER	GREC	TURK	AFRI	EEUR
YEAR	IM-ITAL	IM-MAGR	IM-IBER	IM-GREC	IM-TURK	IM-AFRI	IM-EEUR
1966*	0.492		0.667	0.612	0.091		0.272
1968*	0.468		0.606	0.515	0.040		0.397
1970*	0.440	0.041	0.563	0.523	0.327	0.246	0.179
1972*	0.420	0.055	0.338	0.333	0.327	0.244	0.190
1974*	0.428	0.249	0.485	0.523	0.030	0.215	0.133
1976*	0.399	0.231	0.437	0.454	0.018	0.197	0.160
1978*	0.415	0.181	0.408	0.442	0.018	0.173	0.142
1980*	0.413	0.231	0.392	0.353	0.032	0.147	0.130
1982*	0.416	0.255	0.337	0.304	0.021	0.123	0.244
1984*	0.427	0.218	0.297	0.281	0.069	0.156	0.110
1986*	0.398	0.239	0.329	0.357	0.210	0.128	0.211
	ITALY	MAGREB	IBER	GREC	TURK	AFRI	EEUR
YEAR	IF-ITAL	IF-MAGR	IF-IBER	IF-GREC	IF-TURK	IF-AFRI	IF-EEUR
1966*	0.581		0.711	0.765	0.143		0.138
1968*	0.587		0.656	0.713	0.250		0.267
1970*	0.584	0.345	0.580	0.624	0.680	0.593	0.134
1972*	0.534	0.481	0.317	0.400	0.680	0.458	0.146
1974*	0.570	0.734	0.492	0.559	0.100	0.209	0.091
1976*	0.543	0.630	0.463	0.546	0.111	0.182	0.137
1978*	0.574	0.520	0.409	0.471	0.125	0.173	0.118
1980*	0.542	0.551	0.395	0.412	0.235	0.170	0.082
1982*	0.517	0.548	0.308	0.389	0.067	0.117	0.144
1984*	0.527	0.416	0.305	0.384	0.308	0.107	0.073
1986*	0.529	0.444	0.343	0.418	0.351	0.115	0.120

The case of ITALY is repeated for purposes of comparison

Table 5 continued

	ITALY	FRAN	HOGL	BRIR	USCO	BELG
YEAR	IM-ITAL	IM-FRAN	IM-HGL	IM-BRIR	IM-USCO	IM-BELG
1966*	0.492	0.062	0.114	0.042	0.037	0.964
1968*	0.468	0.074	0.104	0.043	0.221	0.963
1970*	0.440	0.070	0.095	0.008	0.139	0.964
1972*	0.420	0.076	0.300	0.054	0.274	0.964
1974*	0.428	0.084	0.126	0.075	0.272	0.959
1976*	0.399	0.105	0.098	0.118	0.274	0.955
1978*	0.415	0.095	0.121	0.132	0.248	0.955
1980*	0.413	0.114	0.098	0.120	0.165	0.953
1982*	0.416	0.101	0.122	0.085	0.265	0.953
1984*	0.427	0.093	0.133	0.108	0.152	0.950
1986*	0.398	0.106	0.117	0.085	0.178	0.954
	ITALY	FRAN	HOGL	BRIR	USCO	BELG
YEAR	IF-ITAL	IF-FRAN	IF-HOGL	IF-BRIR	IF-USCO	IF-BELG
1966*	0.581	0.076	0.127	0.029	0.250	0.948
1968*	0.587	0.103	0.128	0.043	0.429	0.942
1970*	0.584	0.116	0.129	0.009	0.302	0.940
1972*	0.534	0.113	0.381	0.063	0.553	0.941
1974*	0.570	0.115	0.168	0.093	0.365	0.934
1976*	0.543	0.121	0.121	0.135	0.392	0.932
1978*	0.574	0.098	0.129	0.175	0.423	0.935
1980*	0.542	0.109	0.117	0.160	0.262	0.933
1982*	0.517	0.096	0.142	0.104	0.417	0.939
1984*	0.527	0.092	0.134	0.133	0.296	0.938
1986*	0.529	0.099	0.138	0.111	0.339	0.938

The case of ITALY is repeated for purposes of comparison

IPD-WORKING PAPERS 1983

<u>PRICE</u> <u>PER COPY</u>	
BF 230 US\$ 6.00	1983-1. R. Lesthaeghe : "A Century of Demographic and Cultural Change in Western Europe : An Exploration of Underlying Dimensions".
BF 300 US\$ 8.00	1983-2. R. Lesthaeghe, C. Vanderhoeft, S. Becker, M. Kibet : "Individual and Contextual Effects of Education on Proximate Determinants and on Life Time Fertility in Kenya".
BF 230 US\$ 6.00	1983-3. F. Eelens : "Impact of Breast-feeding on Infant and Child Mortality with varying Incidence of Malaria - Evidence from the Kenya Fertility Survey 1977-78".
BF 230 US\$ 6.00	1983-4. S. Becker, A. Chowdhury, S. Huffman : "Determinants of Natural Fertility in Matlab, Bangladesh".
BF 350 US\$ 9.00	1983-5. C. Vanderhoeft : "A Unified Approach to Models for Analysis of Zero-One Data with Applications to Intermediate Fertility Variables".
BF 300 US\$ 8.00	1983-6. S. Wijewickrema, R. Bulté : "Migration Impact on Population Growth in Belgium : A Multiregional Investigation with Detailed Projection Results for the Period 1976-2001".
BF 230 US\$ 6.00	1983-7. S. Wijewickrema et Alii : "Marital Status Trends in Belgium, 1961-77 : Application of Multi-State Analysis".
BF 230 US\$ 6.00	1983-8. H.J. Page : "Fertility and Family : New Currents and emerging Emphases in Research and Policy" (Overview of the UN Expert Group Meeting on Fertility and Family (New Delhi, 1983) preparatory to the International Conference on Population).
BF 230 US\$ 6.00	1983-9. R. Lesthaeghe, C. Vanderhoeft, S. Becker, M. Kibet : "Individual and Contextual Effects of Female Education on the Kenyan Marital Fertility Transition" (abbreviated non-technical version of Working Paper 1983-2).

IPD-WORKING PAPERS 1984

<u>PRICE</u> <u>PER COPY</u>	
BF 230 US\$ 6.00	1984-1. F. Rajulton : "An Age Dependent Semi-Markov Model of Marital Status in Belgium : An Application of Littman's Algorithm to Period Data, 1970".
BF 400 US\$10.00	1984-2. R. Lesthaeghe : "Fertility and its Proximate Determinants in sub-Saharan Africa : The Record of the 1960's & 70's".
BF 300 US\$ 8.00	1984-3. C. Vanderhoeft : "Life Tables and Relational Models : A Unified Approach, and Applications in Demography".
BF 230 US\$ 6.00	1984-4. R. Lesthaeghe : "Demographic Renewal and Problems of Social Organization".
BF 230 US\$ 6.00	1984-5. S. Becker : "A Response Bias in the reporting of Month of Birth in Pregnancy History Surveys".
BF 230 US\$ 6.00	1984-6. R. Lesthaeghe : "On the Adaptation of sub-Saharan Systems of Reproduction".

IPD-WORKING PAPERS 1985

PRICE  
PER COPY

- |                     |  |
|---------------------|--|
| BF 330<br>US\$ 8.50 | 1985-1. R. Lesthaeghe and F. Eelens : "Social Organization and Reproductive Regimes : Lessons from sub-Saharan Africa and historical Western Europe".            |
| BF 300<br>US\$ 8.00 | 1985-2. P. Willems and S. Wijewickrema : "The Evolution of Nuptiality in Belgium from 1954 to 1981".   |
| BF 400<br>US\$10.00 | 1985-3. F. Eelens and L. Donn  : "The Proximate Determinants of Fertility in Sub-Saharan Africa: A Factbook based on the Results of the World Fertility Survey". |
| BF 130<br>US\$ 3.50 | 1985-4. Ronald C. Schoenmaeckers : "Current Fertility Behaviour in Africa. Results from a Birth Interval Analysis of WFS Data".                                  |
| BF 400<br>US\$10.00 | 1985-5. Camille Vanderhoeft : Stratified Proportional Hazards Models. A GLIM oriented approach, with special reference to the problem of competing risks.        |
| BF 250<br>US\$ 6.50 | 1985-6. Stanley Wijewickrema : "Childlessness in Belgium and Flanders".  |
| BF 250<br>US\$ 6.50 | 1985-7. R. Lesthaeghe : "Value Orientations, Economic Growth and Demographic Trends - Toward a Confrontation?"   |
| BF 250<br>US\$ 6.50 | 1985-8. Fernando Rajulton and Stan Wijewickrema : "An Enquiry into the Two Basic Assumptions of Multistate Increment-Decrement Life Tables".                     |

IPD-WORKING PAPERS 1986

PRICE  
PER COPY

- |                     |   |
|---------------------|---|
| BF 250<br>US\$ 6.50 | 1986-1. F. Rajulton : "Marriageability and divorceability : a simulation of the unobservables through the conditional gaussian diffusion process. |
| BF 180<br>US\$ 4.50 | 1986-2. H.J. Page : "Child-bearing versus Child-rearing : Co-residence of Mothers and Children in Sub-Saharan Africa".                            |
| BF 450<br>US\$11.50 | 1986-3. R. Lesthaeghe, G. Kaufmann, D. Meekers : "The Nuptiality Regimes in Sub-Saharan Africa".  |
| BF 230<br>US\$ 6.00 | 1986-4. R. Lesthaeghe, G. Kaufmann, D. Meekers : "The Nuptiality Regimes in Sub-Saharan Africa : Data Files NUPFILE 1 and NUPFILE 2".             |
| BF 200<br>US\$ 5.00 | 1986-5. Hwa Young LEE and Fernando RAJULTON : "A Semi-Markovian Multistate Analysis of Sexual Union Formation in Flanders, Belgium".              |
| BF 450<br>US\$11.50 | 1986-6. Zeng Yi : "Fertility and Household Dynamics in China".  |
| BF 300<br>US\$ 8.00 | 1986-7. R. Lesthaeghe & D. Meekers : "Value Changes and the Dimensions of Familism in the EEC".   |

IPD-WORKING PAPERS 1987

PRICE  
PER COPY

- |                      |  |
|----------------------|--|
| BF 250<br>US\$ 6.50  | 1987-1. C. Vanderhoeft : "Hidden heterogeneity in composite link models : further developments".   |
| BF 250<br>US\$ 6.50  | 1987-2. M. Rafiq Shah : "The use of a piecewise constant proportional hazards model in issues related to standardisation : a review and some results".   |
| BF 200<br>US\$ 5.50  | 1987-3. R. Lesthaeghe : "The breast-feeding hypothesis and regional differences in marital fertility and infant mortality in the Low Countries during the 19th Century. - Comments on a debate". |
| BF 200<br>US\$ 5.50  | 1987-4. M. Rafiq Shah : "A critique of Clogg's method of rates adjustment".  |
| BF 400<br>US\$ 12.00 | 1987-5. S. Wijewickrema : "Family Status Life Tables for Belgium : construction and ensuing simulations".  |
| BF 760<br>US\$ 20.00 | 1987-6. O. Adegbola : "Regional and Socio-Economic Fertility Differentials in Nigeria, 1981-82".   |
| BF 300<br>US\$ 8.00  | 1987-7. R. Lesthaeghe: "Cultural dynamics and economic theories of fertility change".  |

IPD-WORKING PAPERS 1988

PRICE  
PER COPY

BF 300  
US\$ 8.00

1988-1. R. Lesthaeghe and J. Surkyn: "Exchange, Production and Reproduction:  
Women in Sub-saharan Demographic Regimes".

BF 400  
US\$ 12.00

1988-2. M. Rafiq Shah : "An Alternative to the Method of Direct Standardization".

BF 300  
US\$ 8.00

1988-3. R. Lesthaeghe, H. Page and J. Surkyn: "Are Immigrants Substitutes  
for Births?"