Evolution of persons living alone on the depression in France since 1970. The adverse impact of the lack of social support.

Géraldine Duthé and Jean-Louis Pan Ké Shon (INED, Paris)

Short abstract and paper

Abstract

The spread of depression has coincided with that of the persons living alone during the second demographic transition. If a systematic causal link cannot be established between the two phenomena, it's well known that solitude predisposes to mental disorders (depression, neurosis, suicide). We attempt to measure the impact of this socio-demographic trends on the prevalence of depression. This measure faces to changes in perception of this disease and the aptitude to tell it as well as with diagnosis progress. The use of a statistical decomposition of a logistic model gets round these biases. From the decennial health surveys carried out since 1970 in France, we estimate the share of the spread of depression in the last 30 years which is due to the progress of persons living alone who can be single, separated, widowed or single parent.

The aim of this paper is to estimate the share of the spread of depression in the last 30 years which is due to the progress of persons living alone. Several sociological theories suggested the role of solitude in the onset of depression. In our paper, we will first give an overview of the theories related to the depression and in the second part, we will statistically examine the impact of living alone on the rising incidence of depression in the French population between the two time points – 1970 and 2002.

Solitude and depression: a theoretical overview

Depression : a modern disease

The initial idea of this study comes from the observation of Alain Ehrenberg regarding changes in individual mental strain. The thesis of Alain Ehrenberg in *La fatigue d'être soi*[1] (1998) - is that there has been an evolution in the personal mental sphere due to the substitution of a society in which people where moulded by norms of compliance and prohibition by the emergence in the mid-20th century of a new world where each person has to be a singular and efficient individual. Since the 19th century, groups have weakened: the family, the trade unions, the farmers, the workers, and even religion. This has led to a more individualist society where individuals are supposed to be more free, or less constrained on the one hand, but where they are more socially isolated on the other hand. Consequently, depression has increased when the disciplinary pattern of behaviour rules (like taylorism and fordism) as well as the compliance and prohibition regulations have been replaced by new norms which incite individuals to take initiative and to become themselves. Ehrenberg considers that "this way of being" develops a disease of responsibility in which a feeling of inadequacy predominates. The depressive person does not feel equal to the task, and feels tired of having to be himself. The nature of regulation, which means individual rules and norms, has changed and now, as Ehrenberg says: "the question of identity prevails over the question of prohibition".

The spread of depression, which would thus be a modern disease, has occurred during the second demographic transition which started from the end of the 60s in France with demographic changes in family size and structure due to many factors such as the increase of divorces, older ages at first child and at marriage etc. (de Singly, 1993 ; Roussel, 1999 ; Sullerot, 2000 ; Arbonville et Bonvalet, 2006). As a result, number of persons living alone has considerably progressed.

Living alone: social fragility

We know since Emile Durkheim that single, divorced and widowed persons commit suicide more often than married or cohabiting people. More over, they are also statistically more prone to develop an alcohol addiction, to attempt suicide, to suffer from solitude and to be more often depressive. This group is thus known to be socially more fragile and our research question is: what is the impact of living alone on the increasing depression rate?

When looking for the theoretical explanatory background, we first refer to Emil Durkheim and his works on suicide (1897). To explain the higher social fragility of persons living alone,

[1] "the tiredness of being oneself" (authors translation).

Durkheim employs two major concepts: integration and regulation. In his opinion, the integration of a social group only expresses the intensity of the collective life which occurs within it. The more actively and constantly its members interact, the stronger the group and the more it is perceived as a whole. Hence, a person who lives alone is less integrated in the family than a person who lives with the family in the same household. Regarding regulation, its balance is unclear and depends on society, but social regulation has to be not too strong – so as not to suffocate persons – but at the same time it has to be strong enough to prevent them from getting lost. According to Durkheim, lack or excess of regulation can lead to suicide. People who live alone may thus suffer from a lack of regulation.

Since Durkheim, research on well-being - or on the contrary ill-being - has obviously progressed. In Ernest Becker's opinion, the search for self-esteem and by contrast the avoidance of anxiety are the mainsprings of individuals (Fredén, 1982). Many psychiatrists claim that well-being is linked to self-esteem which has two components: the first one is the success of individuals in terms of existing social norms (self-assessment), the second one is self-control (Brisset, 1972). According to sociologist Peggy Thoits (1983), two factors can perturb individual mental health: the undesirability of events or strain and the feeling that they cannot be controlled. She introduced the importance of "social support" which was developed in the 70s (Cobb, 1976). This support, which is mutual, means for individuals that they know they can turn to close relatives or friends for help if they have any problems (Pearlin *et al.*, 1981).

To summarize, the social fragility of persons who live alone leads to mental fragility in different ways:

- First, by a lack of integration or regulation,
- Second, it may also lead to the feeling that they do not correspond to the norm of the society which is the couple. However, as the number of people living alone increases, norms are changing and social acceptance of persons who live alone is progressing,
- Third, unlike persons who are married or cohabiting, persons who live alone do not live with a partner. Consequently, they structurally have less social support than the first group. Therefore, although they may not have lower self-esteem, they feel that they have less social support to rely on, if difficulties occur in their life.

Mental fragility can lead to different mental disorders but we will exclusively focus on depression, but as we will see in the next section which present the data we use, its definition is unclear.

Data from the 1970 and 2002 health French surveys

Our data are based on French health surveys which are carried out every ten years and are representative at national level. Analysis will be mainly based on the first available survey of 1970 and the last one of 2002.

Measurement of depression

Despite differences between the two surveys which were conducted 30 years apart, depressive persons are identifiable in both surveys in two ways: first, depression may be reported by the respondents. When the interviewer asks about diseases or disorders they report that they have

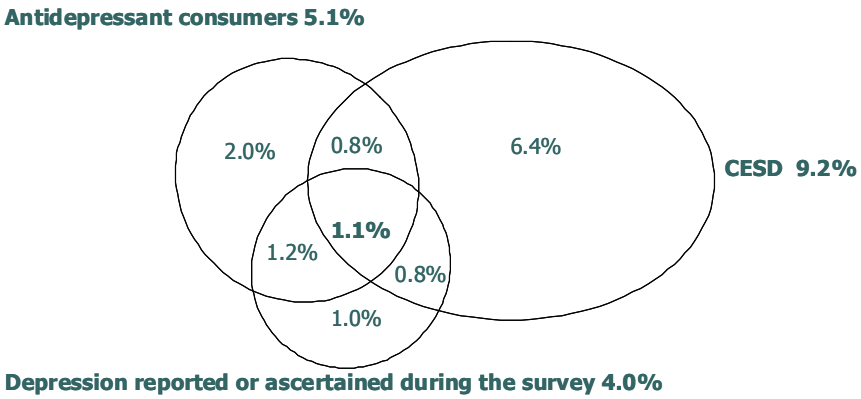
suffered from depression. Second, depression may be mentioned as a reason for medical care (hospitalization, consultation…) during the multiple-round survey.

Nevertheless, we have to consider the classification of the diseases which have been used in the two surveys. In the most recent one, reported or ascertained diseases have been classified through ICD-10[2]. The definition of depression is very long with a description of numerous symptoms. The diagnosis of a depression is based on a group of signs which concern different aspects: the mood of the persons, their perception of themselves, and the consequences on life. In the same time, other mood disorders have similar depressive signs with the "depressive episode"[3] and we assume that all these disorders were confounded in the 1970 classification in which there were only one item : "depressive syndrome".

In addition, it is also possible to distinguish antidepressant consumers through drug consumption in both surveys. More recently, several measurement tools have been developed. They are based on those used by psychiatrists during consultations for patients diagnosed with depression. The 2002 survey includes a self-administered questionnaire with 20 items that is used to calculate a depressivity score: the CES-D[4] which is based on a dimensional approach of depression. This scale ranges from 0 to 60. From 17, depressive symptoms are suspected and the presence of established depressive symptoms is assumed from 23.

But do all of these different types of identification capture the same depressive patients? To illustrate the role of selected identification method, we can compare in 2002 the groups of supposed depressive persons (over age 18) according to these three indicators: CESD, reported or ascertained depression and antidepressant consumption (figure 1).

Figure 1. Measurement of depression through different indicators in the 2002 survey



First, we see that the CES-D gives a rate of depression of 9%, while the rate is only 4% according to reported or ascertained diseases and 5% of the population are antidepressant consumers. But, despite the overlap between groups, more than 6% of persons who have a high score are not identified through the two other indicators. The same goes for the distinction between the three groups, and although 14% of people are identified by at least

[2] International Classification Disease – 10th revision (WHO).

[3] In this way, we grouped: depressive episode (F32), recurrent depressive disorder (F33), bipolar affective disorder (F31), Persistent mood [affective] disorders (F34) and mixed anxiety and depressive disorder (F41.2). But, very few persons have been included and were not in the two main groups F32 and F33.

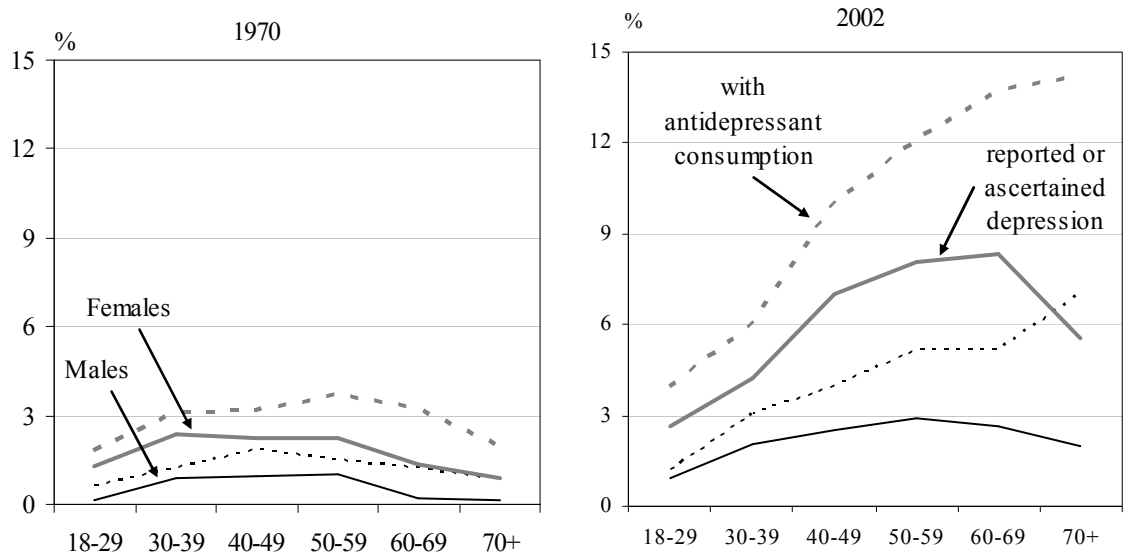
[4] Center for Epidemiologic Studies – Depression scale.

one of these indicators, only 1% of the population is characterized by the three together. However, these differences are not specific to this survey and have already been shown (Le Pape and Lecomte, 1999). If we can assume that the consumption of antidepressants eliminates symptoms and explains the lower awareness of being ill or having a high CESD score, the gap between CESD and declared depression suggests that a large proportion of persons are not aware of their illness, or are unwilling to admit it. Nevertheless, our purpose is not to estimate a precise level in depression rates but the impact of growing persons living alone in the spread of depression.

Spread of depression

Figure 2 represents the proportion of depressive persons by age group, sex and type of identification in both surveys. For our study, we only take into account persons above age 18 with the status "reference person" or "in partnership with the reference person"[5]. The proportion of reported or ascertained depression forms a bell curve: it increases with age and then decreases, the modal age is nevertheless higher in the most recent survey. In 1970, the curves look similar when we include the antidepressant consumers, which is not the case of 2002 where the proportion, after inclusion of antidepressant consumers, increase considerably at old ages for both sexes. Several reasons for this may be hypothesized, including ignorance and denial on the part of respondents, but also progress in screening and health care. In order to deal with this situation, we decided to exclude antidepressant consumers from our study population, thus constituted exclusively of persons who have reported depression or mentioned it as reason for health care during the survey.

Figure 2. Measurement of depression in 1970 and 2002, by sex and age group



In table 1, we present the proportions of persons with reported or ascertained depression during the two surveys. 4.2% respondents were depressive in 2002, in comparison with 1.3% in 1970. At each date, there is a very large difference between males and females: depression is much more frequent among women. Previous research has shown that depression is an indicator of ill-being which is less characteristic for males than for females. We can not thus

[5] With the assumption of a more reliable information related to their mental health.

conclude that men don't suffer from mental tensions, but that they express them in different ways such as alcohol consumption (Cousteaux and Pan Ké Shon, 2008).

Table 1. Reported or ascertained depression in 1970 and 2002, by sex

%	1970	2002
Males	0.6	2.3
Females	1.8	6.0
Total	1.3	4.2

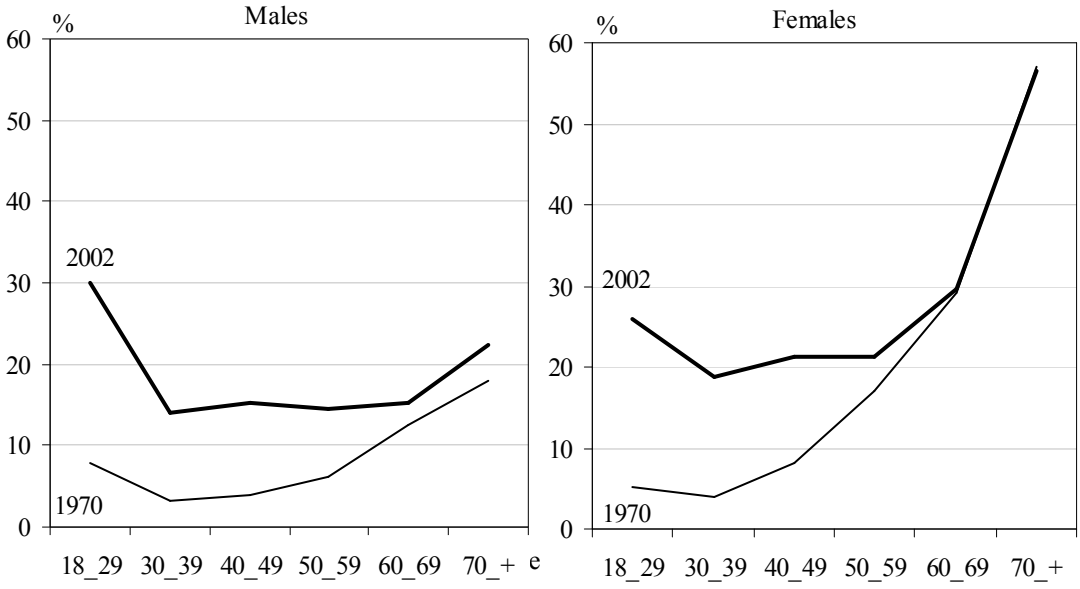
Population : referred person and partners over age 18.

Although we can observe that the rate of depression has more than tripled in thirty years, we are not able to assess the actual increase in depression since there is considerable bias over time: such as the major progress in knowledge and assessment of the disease, or its social recognition which has a large impact both on individual recognition and on the recognition of physicians. Medical recognition as such is a common problem in the whole field of health, but in the domain of mental health, the problem is more acute. Even though depression has become a worrying public health concern in recent years, its clinical diagnosis is still not clear and it is still difficult for patients to accept this diagnosis. The quantitative estimate of the depression increase is however not our precise objective. What we aim for, is to determine the share of this increase that may be due to the growing number of people who live alone.

Increase of persons living alone

In the group of persons living alone, we included single parents because they share the same social fragility as the other groups characterized by absence of a living partner. Figure 3 confirms that the number of persons living alone has increased between these two surveys among both men and women, and especially among young, but also older adults. After age 60, there has been no real change, with a very large proportion of women living alone compared to men.

Figure 3. Proportion of persons living alone, by sex and age group



The population of persons living alone is naturally formed by individuals with different marital and familial statuses. They can be single, widowed or separated (which includes divorced) or single-parent. For this last sub-group, we did not distinguish their marital status. But according to the age, we distinguish parents with children in their care from the older ones for whom their children certainly support them. The proportion of persons living alone has increased over time from less than 13% in 1970 to nearly 24% in 2002. We just saw that it was mainly due to young adults. That is confirmed here with the increase in single persons. In 2002, they are the largest sub-group, before widowed persons. At lower levels, separated persons and single-parents under age 65 have also increased over time.

Table 2. Proportion and distribution of persons living alone, according to their statuses

en %	1970 survey		2002 survey	
Single	3.2	24.7	7.9	33.7
Widowed	5.9	46.4	6.8	28.9
Separated	1.1	8.3	3.9	16.5
Single parent over age 65	0.9	6.9	0.5	2.0
Single parent under age 65	1.8	13.7	4.4	18.9
Together	12.8	100.0	23.5	100.0

Population : referred person and partners over age 18.

Impact of the increase of persons living alone on the spread of depression

Connection between persons living alone and being depression since 1970

To confirm the link between living alone and being depressive, we proceeded with two logistic regressions – one model for each survey – in which we crossed our central covariates (living alone) with sex to take into account gender differences. The results presented in table 3 are an extract of the global models which also include age, occupation and educational level (appendix 1). They give estimates which are positive (increased risk of being depressive) or negative (decreased risk).

Table 3. Estimates of the model risk of depression

	1970		2002	
	Males	Females	Males	Females
Single	1,2 **	0,2	1.1 ***	0.8 ***
Widowed	1,1	-0,1	1.5 ***	0.7 ***
Separated/divorced	-12,2	1,0	1.2 ***	1.1 ***
Single parent over age 65	-10,9	0,1	1.6	-0.1
Single parent under age 65	-12,3	1,0 **	1.3 ***	0.8 ***
Couple with children	*Réf.*	*Réf.*	*Réf.*	*Réf.*
Couple without children	0,0	0,1	0.4 *	0.1
Other situation	-0,2	-0,6	0.2	-0.4

Population : referred person and partners over age 18. Other covariates controlled: age, occupation, educational level (appendix 1). *** p<1% ** p<5% * p<10%.

Controlling for all covariates, in 1970, single men had higher risks of being depressive than married men with children, and for young single mothers, there was also a significant positive effect. But the model for this survey is limited by the low proportion of depressive persons. In comparison, the 2002 survey gives a much more significant effect with higher risks for all categories of men and women who live alone, except single parents who are above age 65. For 2002, the effect remains high with more controlling available factors which are available, such as traumatic events occurred in the childhood or in the year preceding the survey (Cousteaux and Pan Ké Shon, 2008).

Impact of growing number of persons living alone on the spread of depression

The applied method aims to estimate, based on the two Health surveys, the impact of weakening family integration measured through the number of persons living alone on the spread of depression measured through the proportion of depressive persons. For this, we use a Blinder-Oaxaca decomposition applied to logits which has been proposed by Robert Fairlie (2006). The purpose of this econometric technique is to identify and quantify the separate contributions of group differences in measurable characteristics[6]. For our study, we assume that this technique can explain a part of the difference in depression rates between the two surveys by the change in population structure.

According to our model, and controlling for all other covariates, the higher number of persons living alone in 2002 compared to 1970 has contributed to a fifth of the increase in the depression rate between the two dates (table 4). Among females, contributions are particularly high for separated or divorced women and single mothers. Among males who are characterized by a lower depression rate, the contribution is also manly due to separated persons but also to the singles. If we look at the global population (males and females), we observe that the very large increase in the number of singles did not, in the end, have an expected so strong impact on the level of depression.

[6] A complete description of the method is available on the author's website:
http://people.ucsc.edu/~rfairlie/decomposition/

Table 4. Contribution due to changes in household statuses in the increase in the depression rate between 1970 and 2002 (%)

	Males	Females	Total
Single	5.4	2.3	2.2
Widowed	0.9	1.8	4.4
Separated/divorced	7.3	7.7	8.3
Single parent over age 65	-0.4	0.0	-0.1
Single parent under age 65	0.1	5.4	4.6
Total persons living alone	***13.2***	***15.4***	***19.3***
Couple with children (ref.)	-	-	-
Couple without children	8.0	2.8	4.1
Other situation	-0.9	3.0	2.2
Total household status	***20.3***	***20.1***	***25.6***
Total all contributions	***38.5***	***16.2***	***5.4***

Population : referred person and partners over age 18. Other covariates controlled: age, occupation, educational level, hospitalization in the year preceding the survey (appendix 2).

Discussion - conclusion

We have to point out that our model has only explained respectively 38.5% and 16.2% of the difference in the depression rate among males and females. This means that a small part of the increase in depression should be due to changes in the population structure during the second demographic transition. This results from global negative structural changes – the strongest factor is population ageing –, and a global positive effect such as our central covariates, but also changes in occupation (on the one hand, the decrease of inactive women has contributed in a decrease of depression rate, on the other hand, unemployment and retirement has contributed to increase this rate).

But, what can we say about the rest of the unexplained increase? We suppose that it is due to unobserved factors such as progress in recognition and knowledge of the disease, but also other increasing mental tensions such as those due to changes in the work environment. We can also mention the incompleteness of the model. Because the covariates used must be common to both surveys, we could not include some characteristics which are available in the most recent one, which is much more detailed, such as traumatic events that occurred during the childhood.

According to our results, first, we have observed that among the persons who live alone, singles, even if they remain more fragile and contribute to the increase in depression, do not contribute as much as widowed, separated persons and single parents. From this result, we can argue that integration measured through partnership and cohabitation is not the only factor explaining social fragility. We can guess that regulation and social norms process are also contributing in this result. Second, separation makes women more vulnerable because of their still disadvantaged social status. For women, separation may result in some decrease of life conditions, with in addition, the experience of an event considered as a social failure. And third, according to our results, the incidence of depression should continue to increase, partly due to recent upward trends in the number of separated persons and single parents.

This study led us to arise a fundamental question about individual adaptability to social changes occurred since the 1970s: we know that persons are able to adapt to social changes, but we don't know the level of this adaptability. For instance, norms such as a social success through the life in couple are changing. For individuals, this should result in a decrease of mental strain and a higher protection against ill-being. This complex question of adaptability leads us to a large field of unexplored research which could highlight variable expressions of ill-being over time and help for predictions.

References

Arbonville D. and Bonvalet C. (dir.), 2006. – *Évolutions démographiques et transformations de l'habitat en France in Quelles familles ? Quels logements ?* Les cahiers de l'Ined, Paris, Ined.

Brisset Ch., 1972. - *L'avenir de la psychiatrie en France,* Payot Éd., Paris.

Cobb S., 1976. – Social Support as a Moderator of Life Stress, *Psychosomatic Medicine*, 38, pp. 300-314.

Cousteaux A.-S. and Pan Ké Shon J.-L. 2008. - Le mal-être a-t-il un genre ? Suicide, risque suicidaire, dépression et dépendance alcoolique, *Revue Française de sociologie*, 53-92.

De Singly F., 1993. - *Sociologie de la famille contemporaine*, Nathan, Paris. 2004, réédition A. Colin, Paris.

Durkheim É., 1897. – *Le suicide. Étude de sociologie*, 9e éd. 1997, Coll. Quadrige, Paris, PUF.

Ehrenberg A., 1998. – *La Fatigue d'être soi. Dépression et société*, Paris, Odile Jacob.

Fairlie R. W. 2005. - An Extension of the Blinder-Oaxaca Decomposition Technique to Logit and Probit Models, *Journal of Economic and Social Measurement*, 30(4), 305-316.

Fredén L., 1982. - *Aspects psychosociaux de la dépression*, Coll. Psychologie et sciences humaines, Edition Pierre Mardaga.

Le Pape A. and Lecomte, T., 1999.- Prévalence et prise en charge médicale de la dépression en 1996-1997, *Questions d'économie de la santé*, 21.

Pearlin L., Menaghan E., Lieberman M., Mullan J.T., 1981. –The Stress Process, *Journal of Health and Social Behavior*, 22, 337-356.

Roussel L., 1999.- *La famille incertaine*. Paris : Odile Jacob.

Sullerot E., 2000.- *La crise de la famille, éd. Augmentée 2000*. Paris, Arthème Fayard.

Thoits, P. A., 1983. - Multiple identities and psychological well-being: A reformulation of the social isolation hypothesis. *American Sociological Review, 48,* 174-187.

Appendix 1. Estimates of the model risk of depression

	1970				2002			
Intercept	-4.3***				-4.3***			
Sex	0.3				1.5***			
	Males		Females		Males		Females	
Single	1.2	**	0,2		1,1	***	0,8	***
Widowed	1.1		-0,1		1,5	***	0,7	***
Separated/divorced	-12.2		1,0		1,2	***	1,1	***
Single parent over age 65	-10.9		0,1		1,6		-0,1	
Single parent under age 65	-12.3		1,0	***	1,3	***	0,8	***
Couple with children	*Ref.*		*Ref.*		*Ref.*		*Ref.*	
Couple without children	0.0		0,1		0,4	*	0,2	
Other situation	-0.2		-0,6		0,2		-0,4	
18- 29 years	-2.2	**	-0,5		-1,4	***	-1,2	***
30 - 39 years	-0.1		0,1		-0,1		-0,5	***
40 - 49 years	*Ref.*		*Ref.*		*Ref.*		*Ref.*	
50 - 59 years	-0.2		-0,1		-0,1		0,0	
60 - 69 years	-2.4	***	-0,7	*	-0,5		-0,3	*
70 years and over	-3.1	**	-1,1	**	-1,0	**	-0,7	***
Farmer	0.0		0,8		-0,8		-0,4	
Company director	-0.8		0,6		-0,1		-0,7	*
Senior manager	-0.9		-0,8		-0,1		-0,7	***
Middle manager	-0.4		0,1		-0,2		-0,4	**
Employee	*Ref.*		*Ref.*		*Ref.*		*Ref.*	
Worker	-0.4		-0,6		0,0		-0,2	
Unemployed person	-12.3		0,5		1,0	***	0,5	***
Retired	1.0		0,4		0,4		0,3	*
Other inactive	1.6	**	0,2		1,9	***	0,4	***
Unknown education level	-0.4		0,0		0,2		-0,2	**
Level 1 general/technical	*Ref.*		*Ref.*		*Ref.*		*Ref.*	
Level 2 graduate/postgraduate	0.4		0,5		-0,1		-0,1	

Population : referred person and partners over age 18. *** p<1% ** p<5% * p<10%.

Appendix 2. Decomposition of the risks of being depressive between 2002 and 1970

%	Males	Females	Total
Single	5.4	2.3	2.2
Widowed	0.9	1.8	4.4
Separated/divorced	7.3	7.7	8.3
Single parent over age 65	-0.4	0.0	-0.1
Single parent under age 65	0.1	5.4	4.6
Couple with children	*Ref.*	*Ref.*	*Ref.*
Couple without children	8.0	2.0	4.1
Other situation	-0.9	3.0	2.2
18- 29 years	-12.4	-4.6	-7.7
30 - 39 years	-0.3	0.0	0.1
40 - 49 years	*Ref.*	*Ref.*	*Ref.*
50 - 59 years	-1.2	0.0	0.0
60 - 69 years	0.1	0.6	-0.7
70 years and over	-11.2	-8.3	-11.0
Farmer	2.9	0.0	0.7
Company director	1.5	0.5	0.8
Senior manager	-0.4	-1.5	-2.0
Middle manager	0.6	-1.2	-1.0
Employee	*Ref.*	*Ref.*	*Ref.*
Worker	4.0	1.3	3.4
Unemployed person	8.0	3.8	4.3
Retired	3.8	7.2	4.3
Other inactive	21.6	-16.0	-14.4
Unknown education level	-1.2	5.2	3.5
Level 1 general/technical	*Ref.*	*Ref.*	*Ref.*
Level 2 graduate/postgraduate	-1.8	-4.5	-4.1
Sex			3.6
Total of contributions	38.5	16.2	5.4

Note: the table present the contributions of each characteristic to the increase or decrease of the gap between depressive rate in 2002 and that in 1970.