# Two-home family situations of children and adults in France and Australia: observation and consequences for describing family patterns 

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#### Abstract

With the increasing diversity of family situations, more people - children as well as adults now 'usually' live in more than one dwelling. The aim of this paper is, first, to estimate the proportion of people living in two dwellings, and second, to describe the consequences of these two-home situations on basic estimates of family situations based on 'routine' surveys or censuses. We base our paper on two large-scale surveys the 2004 EU-SILC in France and 2001 HILDA in Australia.

Children commuting between two parental homes are very likely to be counted twice in usual surveys and censuses. This is less likely for adults. In France, 2004, $6 \%$ of children and adults registered in the survey are living in two dwellings. When the likely double-counting of children is controlled for, some $3.5 \%$ of children aged under 18 live in two dwellings, $2.2 \%$ share their time between both parents' homes, and $1.3 \%$ live partly with their parents and partly away from home or at boarding school. When these situations are taken into account, the proportion of children not living with both parents falls from a biased estimate of $22.3 \%$ to $18.9 \%$. Among French adults, the actual prevalence of multi-residence must be between $4 \%$ and $6 \%$, with a peak at ages $20-24$. In Australia, multi-residence is much less frequent: $1.4 \%$ in the sample - between $1.0 \%$ and $1.4 \%$ if double-counting is controlled for.


Living in two dwellings is linked to specific family situations, often temporary or ambiguous. Taking multi-residence into account is a challenge, but it is crucial not only to avoid doublecounting, but also to accurately describe family situations of adults and children.

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## Introduction

Family transitions and situations are becoming less and less easy to identify. The processes of union formation and dissolution take time, and during that period people may live 'more or less' as a couple, e.g. spending together a few days and nights per week, while keeping one household each. The distinction between categories such as living as a couple (in one or two dwellings), living apart together or having a stable relationship is sometimes difficult to make. Older adults preparing their retirement may spend an important period of the year in their holiday house; older people may 'visit' their children for a long period of the year, while keeping their own home. These ambiguous family situations correspond to multi-residence, i.e., living 'usually' in several dwellings, or 'commuting between households'. The same is true for children: after a parental disruption, children may spend some time with one parent, and some time with the other, especially when parents have shared custody of their children, which is becoming more common.

As these new family situations become more common, the proportion of adults and children sharing their time between two dwellings could thus be increasing in France and Australia, and it is likely to be also the case in many other Western countries (see e.g. Heuveline, Timberlake and Furstenberg 2003 about family situation of children). In most countries, some rules are applied within the census or routine surveys, in order to take these situations into account and to avoid double-counting of individuals (most often by restricting the observation of individuals to their 'main' dwelling, where they live more than half of the time - this is the case in Australia), but these rules do not allow for an accurate description of the current situation of individuals living 'usually' in two dwellings.

The aim of this work is threefold. The first part presents an estimate of the proportion of people living in two or more households. The second part describes how these situations are

[^0]or could be controlled for in order to avoid double-counting. The third part takes these situations explicitly into account in order to measure the consequences of these two-home situations on basic estimates of family situations and households.

In this paper we compare France and Australia, because in the first country several questions on multi-residence of adults and children have been introduced in the core of most surveys conducted by the institute of statistics (Herpin, Toulemon and Verger 2001) which allowed to show that multi-residence is far from negligible (Toulemon 2008), while in the latter country the situation may be less frequent (Smyth and Parkinson 2002) but on the increase.

## I - Multi-residence of adults and children

The background paper of the $35^{\text {th }}$ seminar of the CEIES on 'New Family relationships and living Arrangements. Demands for Change in social Statistics' states that " $A$ critical point is 'to live in the same dwelling' or 'persons living together' as one of the criteria to define a household" (CEIES 2007). ${ }^{1}$ Adults and children can share their time between two or more dwellings, leading to ambiguous answers on their 'living in a dwelling' and new questions about how to define households and further along family environment of people.
The first step is to define multi-residence. What is multi-residence about? How can we measure it? How frequent is it? What is the family situation of people living in several dwellings? How does multi-residence impact the collection of data on family situations? These are the questions we are going to raise now.

## a. Definitions of multi-residence

An individual can only be at one place at a time, but when the observation window is larger than one day (or one night), it is possible to 'live' in more than one dwelling. Three rules are used in censuses and surveys in order to take multi-residence into account:

1. Single residence rule: each individual is attached to a unique dwelling. This dwelling can be the 'usual' dwelling, where the individual lives most of the time, or the place where the individual is present at a point in time, e.g., where s/he slept on the night preceding the 'census day';
2. Double-counting rule: in some situations individuals may deliberately be counted twice, e.g. students living on their own during the working days and coming back to their (parental) home during the weekend. This is the case for the counts of 'legal population' in French municipalities, estimated from census data. When double counting is known, it can be controlled for by weighting individuals counted twice by 0.5 , in order to get unbiased estimates of total population, or by applying the single residence rule to delete one of the two occurrences of individuals counted twice.
3. Complete information rule: in some surveys, like the French version of EU-SILC, and in the Australian HILDA survey, several questions are asked about all the persons living in the dwelling, in order to collect precise information on their situation.
Of course, the third method is the only one to allow for a complete definition of multiresidence. Several definitions are possible, but we will concentrate on the following definition: during a year, an individual has several residences if s/he lives 'usually' in

[^1]different dwellings. Dwellings which are used only for the weekend and/or for holidays are not supposed to be included, as people are not supposed to 'live' in their holiday houses, only to spend holidays or weekends there. Let us describe the French EU-SILC and the Australian HILDA surveys, before presenting estimates of the prevalence of multi-residence in France and Australia, and linking them to likely family situations.

## b. Data

## The French EU-SILC

The Enquête sur les ressources et les conditions de vie, ERCV, is the French edition of the EU Survey on Income and Living conditions (EU-SILC, see e.g. Eurostat 2007). The survey is conducted by the French National Institute for Statistics and Economic Studies, Institut National de la Statistique et des Études Économiques (INSEE). The first wave took place in 2004, and results presented here are computed from this first wave.
In addition to the dwelling, the household unit is defined as a group of people sharing daily expenses, so that several households can be present in the same dwelling, and some members of a household may live in another dwelling. In the 'table of inhabitants in the dwelling', Tableau des habitants du logement, THL, the following questions are asked about all members of the dwelling, identified by their first name, starting with the respondent:

- Question A7. Does < first name> live here...
- 0. No (member of the household living elsewhere, in another dwelling)
- 1. (Almost) all year
- 2. During the week end or holydays $=>$ (A8) How many days per year?
- 3. During the working days $\quad=>$ (A9) How many days per week?
- 4. Some months in the year $\quad=>$ (A10) How many months since last year?
- 5. Less often $\quad=>$ (A11) How many days per year?

Several controls are added and supplementary information is gained on these 'other dwellings'. For people living only in the dwelling where the interview takes place, the question is asked again: 'Question A12. Does <first name> live also elsewhere from time to time?' For people living in another dwelling (answer ' 1 ' to question A7 or answer 'yes' to question A12), respondents are asked whether this other dwelling (or one of the other dwellings) is a collective dwelling (and its type), whether one is a ordinary dwelling, and how many other ordinary dwellings the person 'usually' lives in. Finally, there is a question about the occurrence of people who live 'usually' in the dwelling but had not already been listed, and a question that names explicitly, as a reminder, several cases such as '- a child in the custody of child in the custody of the other parent; - a student living elsewhere during the year; - a person with whom a member of the dwelling has an intimate relationship; - a subtenant'.

The SILC survey also includes very specific questions about couples, parents, and family links. Firstly, there are questions about whether the person is living as a couple and about his/her parents:

- For each person aged $15+$, Question B1. Does <first name> currently live as a couple?
- Yes, with another habitant of the dwelling [the partner is then identified by her/his number in the Table of inhabitants]
- Yes, with a partner living elsewhere
- No
- For all, Question B4. Is the mother of <first name> still alive?
- Yes, and she lives here [the mother is then identified by her number in the Table of inhabitants]
- Yes, and she lives elsewhere
- No, she is deceased
- Don't know

The same question is asked about the father of each person living in the dwelling. Finally, if a person has no identified family links with others, a specific question is asked.
Another part of the questionnaire is devoted to the other dwellings: where they are, who lives in them (a question about the presence of the 'other parent' of children aged less than 15 has been added in the following waves), whether the dwelling is a main house or a holiday house for the household (if all the household uses this dwelling), whether somebody who could be included in the sample can be reached in this household before the end of the fieldwork.
Among the 25,299 individuals in the French EU-SILC sample, 6,147 are aged $0-17$ and 18,331 are aged 18-79. After the age of 80 , the proportion of people living in nursing home is too high for the sample to be representative. Results for adults aged $80+$ must then be used with caution.

## The Australian HILDA survey

The Household, Income and Labour Dynamics in Australia (HILDA) Survey is a householdbased panel study, conducted by the Melbourne Institute. The first wave took place in 2001, and the survey is repeated every year. Most questions are repeated each year. In addition, each year a special topic is covered - such as in wave 1 the family background, in wave 2 the household wealth, and in wave 3 retirement and plans for retirement. Private health insurance and youth are covered in wave 4 , etc. The panel began with a national sample of Australian households living in private dwellings of 6,872 households and 13,969 individuals. Members of the original survey in 2001 have been traced and interviewed annually, along with new members of their households. Detailed information on the HILDA survey is available on the web, through the website http://www.melbourneinstitute.com/hilda/. Six waves have been currently released. In this paper, we rely only the data from the first wave of HILDA.

The sample of the first wave comprises private dwellings. Within these dwellings, households comprise individuals who have a common budget. Lodgers, who receive accommodation only (not meals), are treated as a separate household, while boarders, who receive accommodation and meals (board), are treated as part of the household (Watson and Wooden 2002).

Contrary to the French EU-SILC, the single residence rule applies for the person interviewed in the HILDA survey. Quoting Watson and Wooden (2002): "In general, persons who live in more than one household were only treated as members of the household where they spent most of their time. People who lived in another private dwelling for more than 50 per cent of the time were not treated as part of the household. Visitors to the household were also not
treated as part of the household. Finally, people who usually lived in the household but were temporarily absent for work, school or other purposes were treated as part of the household, and this meant that a small proportion of interviews were conducted in locations other than at the household address. Children attending boarding schools and halls of residence while studying were treated as members of sampled households provided they spent at least part of the year in the sampled dwelling". Where a dwelling contained more than one household, all such households were sampled. Where there were four or more households occupying one dwelling ( 10 cases), a random sample of three of them were included in the sample. More detail on the methodology can be found in (Watson and Wooden 2002).

The Household form, is the very first part of the interview and includes information on all household members, including those who also live in another dwelling. In the Household form, the list of the persons who "usually live here and who are members of this household" is first filled in (the term "usually" is highlighted in the questionnaire as a crucial criterion of inclusion); then another question is asked about "any other household members who usually live here but are now away on business, at school, in hospital or somewhere else?"; Thirdly, a specific question is asked about children at boarding school: "Are there any other children who spend at least part of the year here who are at boarding school or live in a university hall of residence?"

Another question is then asked to check whether any household member is also living in another dwelling: Does everyone live here all the time, or do some live elsewhere for part of the time (e.g., lives with other parent elsewhere, or in work lodgings)?" For those who also live elsewhere, two additional questions follow, one on the share of the time, one on the reasons of multi-residence: "Does ... live here about half the time, more than half, or less than half?" and "Why does ... live here only part of the time?".

The main difference between the two surveys is that for the French EU-SILC, all persons living in the household were recorded in the household form, even those who usually lived elsewhere, while in HILDA the list was restricted to persons living usually in the household. ${ }^{2}$

Both surveys include a complete 'relationship grid' allowing to precisely know the family relations between all household members. See Brandon (2004) for an analysis of living arrangements of children in Australia based on HILDA data.

## c. Prevalence by sex and age

## France: 3.7\% of inhabitants living in two dwellings

According to the French EU-SILC survey, multi-residence is far from being a marginal phenomenon in France. Around $6 \%$ of women and $7 \%$ of men in the sample 'usually' live in more than one dwelling. The proportion is $4 \%$ at ages below 5, and reaches $20 \%$ at ages 20 24. The prevalence of multi-residence is lower for adults: lowest at ages $30-55$, it slightly increases at higher ages (Figure 1). According to these data, no less than 3.7 million people are concerned by multi-residence in France.

[^2]Figure 1. Proportion of men and women living in two dwellings, in France, by age (in \%), according to the uncorrected household weights


Source: INSEE, French EU-SILC 2004.

These estimates are based on the French EU-SILC standard household weights, the household weight being applied to all members of an household. The weights could be divided by around two under the hypothesis that the probability of inclusion of people living in several dwellings (most often two in practice) was double that of other individuals and that their weight must thus be divided by two.

A more refined weight was thus computed, taking into account the information on the other dwelling. The 'corrected' weight is computed as the ratio of the original weight to the number of ordinary dwellings each person is 'usually' living in. For the sake of simplicity, we did not take into account the information on the time spent in each dwelling, nor the information on the possibility of reaching somebody in this household. ${ }^{3}$ According to this new weight, the prevalence is much lower, but still not negligible: $3.4 \%$ of women, and $4.0 \%$ of men are usually living in two dwellings. In France, 1.1 million women and 1.2 million men thus live in more than one ordinary dwelling (Figure 2). This is a minimum estimate because we assumed that people could be reached in all their family households.

[^3]Figure 2. Proportion of men and women living in two dwellings in France, by age, using modified weights taking into account sampling probability (in \%)


Source: INSEE, French EU-SILC 2004.

## Australia: $1 \%$ to $1.4 \%$ of inhabitants living in two dwellings

In Australia, multi-residence appears to be much less frequent. According to the HILDA data, $1.5 \%$ of men and $1.3 \%$ of women live in two dwellings (Figure 3). The age at which multiresidence is the most frequent is much lower in Australia than in France: 5\% of boys aged 1014 , and $6 \%$ of girls aged $15-10$, live in more than one dwelling. At ages $20-24$, it is the case for only $2 \%$ of men and $4 \%$ of women, as against $12 \%$ of men and women in France. Multiresidence is very rare among adults in Australia: less than $2 \%$ of men and women aged 25 or more live in two dwellings. Multi-residence is more frequent among women than among men at ages 15-24, and lower at ages $30-45$, but we do not see any explanation for this pattern. It could be related to the lower median age at leaving parental home for women than men; the age gap seems to widen for the youngest birth cohorts studied (Flatau et al 2007: 57). In Australia like in many other Western countries, the family situations of children and young adults become more diverse (de Vaus and Gray 2004, Fussell Gauthier and Evans 2007), probably leading to more frequent situations of multi-residence. Unlike in France, multiresidence is not more frequent in Australia at older ages than at ages around 30.
As individuals are included in the household list only if they live 'usually' in the household, it is not easy to know whether double-counting occurs in the HILDA survey. The information is scarce about the individuals' other dwelling: the only information is whether the person lives part-time with the other parent living elsewhere, or in a study or a work related accommodation and the share of time in the dwelling under study. Not surprisingly, more than $80 \%$ of children aged under 15 living in two dwellings are living with their other parent in the other dwelling, while for the 15-29 years old, the reason of this double dwelling is split between a study related accommodation and other reason and for the over 30, the double dwelling is work related or other reason.

Figure 3. Proportion of men and women living in two dwellings in Australia, by age (in \%)


Source: Melbourne Institute, HILDA survey, 2001.

For children the residence with the other parent makes double-counting more likely than for adults. We do not know whether the other dwelling is included in the sample or not (only private households are included in the sample), and how likely it is that the same child is registered as living 'usually' in the household by both separated parents. We thus did not correct the Australian estimates by the probability of double counting, unlike for France. In Australia, $2.6 \%$ of children aged $0-17$, and $0.7 \%$ of adults, are living in two dwellings. Assuming (a high estimate) of $50 \%$ of children and $25 \%$ of adults counted twice in the HILDA survey, the overall prevalence of multi-residence would decline to $1.0 \%$. The actual figure must thus lie between 1.0 and $1.4 \%$, much less that the estimate for France, $4 \%$ to $6 \%$.
Before going into more details on how to take multi-residence into account, let us now examine the broad set of family situations which may lead to multi-residence.

## d. Family situations and multi-residence

The family links of an individual with other persons living in the dwelling is a very efficient way to understand the concrete situations of multi-residence. Six cases can be considered:

1.     - Children whose parents are separated. They do not choose where they live, and do not answer directly to surveys. They may be counted twice, by each of their separated parents, as living in their dwelling.
2.     - Young adults living with their parents (on weekends) and also in another dwelling (week days), typically students. This is a well known (and sometimes accepted) case of double counting in the censuses. Young adults consider that they have left the parental nest, and are
happy to be registered on their own, while their parents think that they are still part of their household and want them to be registered as a child in their household. Note that their 'own home' may be a student room, or the main dwelling of another household, e.g. grand-parents. Double-counting is much less likely in the former case than in the latter.
3.     - Adults living-apart-together (LAT), or entering a relationship, or ending a relationship, spending some days and nights together, but having two dwellings. These situations are not rare, as the processes of couple formation and couple dissolution typically last around one year, during which the dwelling situation may be ambiguous.
4.     - Adults living as a couple but living in two households for any reason. Working in another town and thus separated from their family during the week is the most common case, but many other situations can be thought of: partner in a retirement home or a long-term care hospital, partner in jail, etc. This situation is similar to that of case 2 , the difference being that the person who lives in another dwelling is not a child but an adult recorded in the first dwelling. The distinction between 'voluntary LAT' (situation 3) and 'involuntary nonresident or partially non-resident couples' is not straightforward.
5.     - A more or less dependant person, e.g. an elderly or a disabled member of the family, moving from one child's dwelling to another during the year.
6.     - A complete family moving several times during the year, from one dwelling to the next.

These cases are very different one from the other. In each case, it is easy to see that some situations may be declared as multi-residence, while others may not, irrespective of the 'objective' situation. For instance, a separated parent may or may not declare that her/his child also 'usually' lives with the other parent. Let us now examine what sorts of bias are created by inaccurate answers or inaccurate questions in surveys or censuses.

## e. Errors related to multi-residence

Living in more than one dwelling may result from different family situations. These different situations also lead to very different bias. Let us consider again the six cases described above, and how multi-residence may be omitted, and thus not be taken into account in the weighting process.

1.     - Children whose parents are separated. If the same child is counted twice, the estimated number of children whose parents are separated (single-parent families and stepfamilies) are over-estimated. Some parents can be reluctant to declare that their child is also 'usually living' with their former partner, as shown by inconsistent results in French family surveys.
2.     - Young adults living with their parents (weekends) and also in another dwelling (week days), typically students. The number of young adults is over-estimated; young adults may be reluctant to say that they still 'usually live' with their parents if they feel having already left the nest, while their parents still count them as living in their dwelling (Villeneuve-Gokalp 2005).
3.     - Adults living-apart-together, or entering a relationship, or ending a relationship, spending some days and nights together, but having two dwellings. These situations may be declared in many different ways: each partner may be counted once as a couple, once not in a couple, or twice. If the partners have children, some single-parent families may emerge as an artifact. Chardon (2007) notes that in France the census overestimates the number of single-parent families to a very large extent, while double counting of children has a more limited impact. In the census, some couples are not recognized as such, because each partner fills a form in her/his own dwelling.
4.     - Adults living as a couple but working in another town and thus separated from their family during the week. This situation leads to the same bias as case 3 .
5.     - A more or less dependant person, e.g. an elderly or a disabled member of the family, moving from child to children's dwellings during the year. The number of complex households may be overestimated or under-estimated. For instance, an elderly mother spending 4 months with each of her three adult children may be counted in the children's dwellings $0,1,2$ or 3 times, leading to as many complex households.
6.     - A whole family moving several times from one dwelling to the next. This is the classical situation of holiday houses becoming 'usual' dwellings, which may become more common with the increase in flexible working schedules, pre-retirement period, etc.

## II - How to control for multi-residence

The first concern with multi-residence is that the link from one dwelling to one individual is no longer straightforward, so that the probability of inclusion of individuals is not known. Multi-residence of individuals may introduce double-counting and, thus, a bias. Is it possible to correct for this bias?

## a. Double-counting of people living in two dwellings

For an individual who declares living also in another dwelling, the critical information is her/his probability of being included in the sample as living in the other dwelling. Several criteria can be used in practice, but the practical rules used during the fieldwork are difficult to know and not always consistent.
In the French EU-SILC survey, a dwelling is included if 'it is the main dwelling for a household group'. Thus, a young adult living with her/his parents and in a collective dwelling will be counted once, but if the second dwelling is the grand-parents' household, s/he will be counted twice; if $\mathrm{s} /$ he is living on her/his own in the second dwelling, $\mathrm{s} /$ he may or may not be counted twice, depending on whether this second dwelling is to be considered as a 'main dwelling' or not. So a correct procedure must include relevant information on the inclusion probability of the other dwelling. A question such as: 'If I (as an interviewer) was to come to this other dwelling, would it be eligible for inclusion in the survey and would the person be considered as living in the household' is not straightforward... The question, included in French EU-SILC survey, on whether 'somebody who could be included in the sample can be reached in this household before the end of the fieldwork' does not seem appropriate for that purpose: if somebody is to be reached, it is not necessarily in a dwelling which may be the 'main' dwelling for any household. Furthermore, some respondents may be reluctant to accurately respond, especially if there are family conflicts related to this situation of multiresidence.
In the French EU-SILC survey, children are very likely to be counted twice if they 'usually' live in the two dwellings of their separated parents, each of them being the main dwelling of one parent. On the contrary, the probability of counting adults twice is probably much lower, as one of their dwellings may be a collective dwelling or a dwelling not considered as a 'main dwelling' according to the fieldwork French EU-SILC rules. But first attempts to use the precise information from the French EU-SILC survey to estimate the probability of inclusion in the other dwelling were not successful: too many cases were inconsistently coded, and errors and omissions are likely to be numerous.

In the Australian HILDA survey, double-counting is less likely, the inclusion in the household list of residents is restricted to people who live "usually" in the dwelling. When they don't live in this dwelling full time, the reason for living elsewhere and the percentage of time living in the dwelling are investigated. But they are not removed from the list when the percentage of time living in the household in lower than $50 \%$ leading to some potential minor double-counting. ${ }^{4}$

## b. Family situations of adults and children: what is at stake?

Among adults aged 18-79 in France, $6.3 \%$ live in two households or more. When their weight is divided by their number of dwellings, under the hypothesis that they are eligible for interview in all their family dwellings (excluding collective dwellings such as boarding schools and old people's homes), the proportion becomes $3.7 \%$. Table 1 presents the distribution of adults aged 18-79 according to their couple status. Adults living in more than one dwelling less often live as a couple (in the dwelling where the survey takes place) than adults living in one dwelling only ( $39 \%$ vs. $69 \%$ ), but they do not live much more often alone ( $15.4 \%$ vs. $14.3 \%$ ). In their other dwelling, some $50 \%$ of people are living alone, probably because the secondary dwellings where the two-home adults are also living are not always included in the survey. ${ }^{5}$

Thus, changing the weight of individuals according to their number of 'eligible dwellings' does not change much the distribution of adults by couple status (Table 1, last line, 'new weighting'). The main change occurs for the proportion living apart together: $1.2 \%$ instead of $1.4 \%$ when double counting is not taken into account.

Table 1. Distribution of adult respondents (18-79) in France by couple status, whether they also live elsewhere or not

|  | Alone in the <br> household $^{*}$ | Living as a <br> couple | living apart <br> together | Other <br> situations | All | Sample <br> size |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| All | 14.36 | 67.09 | 1.36 | 17.19 | 100 | 18,331 |
| Does the person also live in another dwelling? | 15.40 | 38.58 |  |  |  |  |
| Yes | 14.26 | 68.83 |  | 0.95 | 38.99 | 100 |
| No | 14.31 | 67.70 | 1.18 | 15.96 | 100 | 17,163 |
| All, new weighting |  |  |  | 16.81 | 100 | 18,331 |

*: not living apart together
Source: INSEE, French EU-SILC 2004.

The main conclusion is that, in order to describe the couple status of adults, taking multiresidence into account to correct weights does not make a big difference in France; people living in two dwellings are much more likely to be included in the survey in the dwelling where they do not live alone, i.e. the dwelling where they live alone may not be considered as

[^4]eligible. If they are living alone in one dwelling, with their family in the other dwelling, it is likely that they will be present in the survey only in this latter dwelling. As we do not know their precise family situation in the second dwelling, we can only consider their 'main' family situation from the one in their first dwelling. ${ }^{6}$

In Australia the proportion of adults living in more than one dwelling is very low, so that taking multi-residence into account does not make any difference (Table 2).

Table 2. Distribution of adult respondents (18-79) in Australia by couple status, whether they also live elsewhere or not

|  | Alone in the <br> household | Living as a <br> couple | Other <br> situations | All | Sample <br> size |
| :--- | ---: | ---: | :---: | ---: | ---: |
| Does the person also live in another dwelling? |  |  |  |  |  |
| Yes | 5.5 | 64.0 | 30.5 | 100 | 200 |
| No | 12.2 | 73.2 | 14.6 | 100 | 14216 |
|  |  |  |  | 14.8 | 100 |
| All | 12.1 | 73.0 | 14416 |  |  |

Source: Melbourne Institute, HILDA survey, 2001.

The family situation of adults also depends on the presence of children in their household. The situation of children is known more accurately from the surveys, because it is more likely that all the dwellings they are living in are included in the survey. Furthermore, doublecounting is almost certain for children who live part-time with their father, part-time with their mother. Table 3 presents some information about the family situation of children in France, taking into account the fact that adults and children may live in different dwellings, with weighting of the children by the number of family dwellings they 'usually' live in.

Table 3. Distribution of children by family situation in France, and proportion of children living in several households, by family situation

| Situation of children's parents in the dwelling | Unweighted sample size | Using raw weights |  | Using corrected weights |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Distribution (\%) | $\begin{gathered} \text { \% } \\ \text { two- } \\ \text { home } \end{gathered}$ | Proportion counted twice (\%) | Distribution | \% twohome |
| Both parents, one dwelling | 4,729 | 77.7 | 0.5 | 0.0 | 79.8 | 0.5 |
| Both parents, two dwellings | 87 | 1.4 | 47.3 | 27.1 | 1.1 | 32.6 |
| One-parent family, mother | 680 | 10.4 | 11.9 | 5.5 | 10.1 | 7.1 |
| Stepfamily, mother | 279 | 4.6 | 17.3 | 7.2 | 4.4 | 11.3 |
| One-parent family, father | 146 | 2.3 | 68.7 | 49.3 | 1.6 | 53.1 |
| Stepfamily, father | 149 | 2.4 | 54.5 | 28.7 | 1.9 | 41.2 |
| No parent | 77 | 1.3 | 33.7 | 18.4 | 1.2 | 21.3 |
| All children | 6,147 | 100 | 6.4 | 2.7 | 100 | 3.8 |

Source: INSEE, French EU-SILC 2004.

[^5]The first column presents the unweighted sample size: it has to be kept in mind, given that all uncommon family situations are represented by a small number of children, and an even smaller sample of households. Estimates have a high variance because siblings living in the same household have correlated family situations.
The second column shows the distribution of 100 children aged $0-17$ by family situation and number of dwellings used by the parents: $1.4 \%$ of French children live with both parents in two dwellings or more. They are good candidates for double-counting as well as for artifact one-parent families, according to surveys (or censuses) if one parent is counted in one dwelling, the other in the other dwelling. Fifteen percent of children live with their mother only, more often in a one-parent family than with a stepfather; $4.7 \%$ live with their father only, with an equal share of lone father families and stepfamilies (father and stepmother); finally, $1.3 \%$ live with neither of his/her parents in the household.

These family situations are those observed in the dwelling where the survey took place. The third column shows the proportion of children living in two dwellings (two-home children). According to French EU-SILC data with the standard weights, $6.4 \%$ of children live in more than one dwelling; this situation is rare for children living with both parents $(0.5 \%)$, but more frequent if the parents have two dwellings or if they are separated ( $25 \%$ ). Children living with their mother only do not often live in two dwellings (14\%), while it is the case of a majority of children living with their father ( $61 \%$ ).
These estimates are strongly biased by the fact that children living in two dwellings are overrepresented in the sample, because they can be interviewed in two different places. It is not the case for children who are also living in a collective dwelling: they are counted only once in the survey, because collective dwellings are not included in the sample. Double counting occurs when the second dwelling is a private dwelling. In the sample, $6.4 \%$ of children have two homes, but $5.3 \%$ only are counted twice, accounting for $2.7 \%$ of children in the population. Double counting is most frequent for children living with their father only (49\%), and is also the case when they live with their father and a stepmother $(29 \%)$, with both parents who have two dwellings ( $27 \%$ ) or with no parent in the dwelling ( $18 \%$ ), as shown in Table 3, column 4 . When the weight of each child is divided by the total number of family dwellings where $\mathrm{s} / \mathrm{he}$ is usually living, the proportion of children living in several dwellings moves to $3.8 \%$, instead of $6.4 \%$ with the raw weights (Table 3, column 6). The corrected proportion is lower mainly for children whose parents are separated: $8 \%$ of children living with their mother, and $47 \%$ of those living with their father, are living in two dwellings, according to the correctly weighted sample. As the second dwelling of most children who live with both parents and also live elsewhere, is a collective dwelling, the proportion of those living in two dwellings $(0.5 \%)$ is not affected by this new weighting procedure. The proportion of children living with both parents and also elsewhere does not change.

Comparing the distributions derived from raw and from corrected weights, the main difference concerns the proportion of children living with their father: $3.5 \%$ (instead of 4.7\%) live with their father only, with an almost equal share of lone fathers and fathers living with a new partner ( $1.6 \%$ and $1.9 \%$ ).
A comparison can be made with the French 2004 employment survey (ES). It shows that the French EU-SILC corrected distribution is closer to the ES than the raw EU-SILC estimate (Table 4). Moreover, the proportion of children living with one parent only is even lower in the ES than in EU-SILC with the corrected weights. The differences between ES and EUSILC may thus not at all be attributed to the fact that the ES survey counts some children twice. In fact, the proportion of children whose parents are separated seems to be underestimated in the ES, despite the absence of explicit control for multi-residence of
children. On the contrary, the ES variable on the presence in the dwelling is making reference to a 'permanently living in the dwelling', which could lead some children to be omitted if they live 'only partially' in the dwelling.

Table 4. Distribution of children by family situation in France, with a comparison between French EU-SILC and Employment survey (ES)

| Situation of parents <br> in the dwelling | Raw <br> Distribution <br> in EU-SILC | Corrected <br> Distribution <br> in EU-SILC | Distribution <br> In <br> ES |
| :--- | ---: | ---: | ---: |
| Both parents | 79.1 | 80.9 | 81.8 |
| One-parent family, mother | 10.4 | 10.1 | 10.8 |
| Stepfamily, mother | 4.6 | 4.4 | 4.1 |
| One-parent family, father | 2.3 | 1.6 | 1.3 |
| Stepfamily, father | 2.4 | 1.9 | 1.3 |
| Living with no parent | 1.3 | 1.2 | 0.7 |
| All children | 100 | $\mathbf{1 0 0}$ | $\mathbf{1 0 0 . 0}$ |
| One parent | 19.6 | 17.9 | 17.5 |
| Two parents | 7.1 | 80.9 | 81.8 |
| No parent | 1.3 | 1.2 | 0.7 |

Source: INSEE, French EU-SILC 2004, and Employment Survey 2004

In Australia, the proportion of children living in two or more dwellings is much lower. Only $6 \%$ of children living with their mother only, and $20 \%$ of children living with their father only, are also living in another household (Table 5). Among children living with both parents, if one or both parents live in two dwellings, $11 \%$ of children are also living in two dwellings. For these children, the second dwelling is more often a boarding school and less often another parental home. For children living with one biological parent only, the second dwelling is very often the other parent's dwelling. Among those living with no biological parent in the current dwelling and having another dwelling, a quarter have a parent in the other dwelling.

Table 5. Distribution of children by family situation in Australia, and proportion of children living in several households, by family situation

| Situation of children's <br> parents in the dwelling | unweighted <br> sample size | Using raw weights <br> $\%$ <br> \% two- <br> home |  |
| :--- | ---: | ---: | ---: |
| Both parents, one dwelling | 4056 | 70.2 | 0.3 |
| Both parents, two dwellings | 71 | 1.3 | 11.1 |
| One-parent family, mother | 851 | 16,5 | 5,7 |
| Stepfamily, mother | 392 | 6.8 | , 7.8 |
| One-parent family, father | 105 | 2,2 | 20,4 |
| Stepfamily, father | 55 | 0,8 | 14.1 |
| Living with no parents | 129 | 2.2 | 8,4 |
| All children | 5659 | 100,0 | 2,6 |

Source: Melbourne Institute, HILDA survey, 2001.

As double-counting does not occur for children at boarding schools, it is likely that the figures would not change much if we were to control for double-counting. We cannot check this
result, as we may not estimate the probability of children living in two private dwelling to be considered as 'usually' living in both dwellings, and thus to be counted twice. Would we assume that the proportion of children living in two homes which are counted twice in the HILDA survey is the same than in France, the proportion of children living in two households would be estimated at $2.3 \%$, instead of $2.6 \%$. This assumption is very unlikely, but it shows a minimum estimate
The HILDA survey also includes information on the relations between the children whose parents are separated and their absent parent. Using the same dataset (the first wave of the HILDA survey), Smyth and Parkinson (2003) describe the contacts that children who usually live with their mother have with their non-resident father. For the sake of simplicity, they exclude children having a non-resident mother and a resident father, as well as children with a 'split' residence. They found that $47 \%$ of non-resident fathers have children staying overnight (at least once a month), while $17 \%$ see their children only during the day and $36 \%$ report no face-to-face contact. These figures are related to the youngest non resident child only. When all parents (mother and father) are included, this means that $28 \%$ of children with a natural parent living elsewhere never stay overnight with this parent. The proportion is $56 \%$ when children who have no contact at all with their other parent are included (Smyth and Ferro 2002). Repartnering of the resident parent may have two adverse effects. It has a negative effect on the contacts between children and their non resident parent (Smyth et Ferro 2002) and it is also a reason for children to move out to alternative living arrangement ( Qu 2004). When multi-residence is concerned, older children change more often their living arrangements ( Qu 2004 ) and the split of siblings between parents can lead to more fluidity between parents' households. Using the survey on children's living arrangements after parental separation, Qu (2004) shows that $19 \%$ of mothers and $22 \%$ of fathers with two or more children report that their children changed their living arrangement after separation and in most cases children were split between parents. The distance between households and the income of the non resident parent are also two variables that influence the contacts between parents and children (Smyth, Caruana and Ferro 2004). These figures show that the boundary between multi-residence and frequent visits to the non-resident parents is not simple. More precise distinctions could also be made, such as the difference between 'two-home children' and 'two-household children', the former term implying joint physical custody, while the latter only refers to the fact of having two beds to sleep in two separate households (Callister and Birks 2004).

## c. Weighting and post-stratification

As most surveys are post-stratified by several control variables, bias due to errors on sampling probabilities may be diluted if the variables used for the post-stratification are correlated with multi-residence. As the numbers of individuals are constrained by the post-stratification, biases are only present on structures and subtotals, e.g. the number of children will remain unbiased but the proportion of children living with one parent may be biased.

The most common rule in surveys and censuses, based on the time spent in each dwelling, may lead to many errors. The number of errors is likely to increase, because of the increasing frequency of multi-residence. Furthermore, in the French annual census surveys, the usual instruction 'one form, no more and no less, for each individual' does not hold anymore, as a person interviewed in a dwelling and living also elsewhere has around a $92 \%$ chance that the other dwelling will not be included in the sample during the same year, making doublecounting invisible: $\mathrm{s} /$ he will fill in only one form, but her/his probability of inclusion is twice the estimate.

## III - How to take multi-residence into account

Dividing the weight of adults and children by their number of dwellings corresponds to dividing themselves between their different dwellings. This may lead to a false description not only of the family situation of children and adults, but as a consequence it may be inconsistent for households and family situations.

## a. Dwellings, households and individuals

The concepts of household size, household structure, etc. may dramatically change if individuals can be counted as living in more than one dwelling. Dividing the weights of individuals between their dwellings is only a second-best solution.
Let us take two examples for children, based on cases 1 and 4 in part I.d) above. First, a child living half the time with her/his father and a stepmother, half with her/his mother. The mother's household can be counted either as a single-parent family or a one-person household; the father's household as a step-family or a childless couple. All combinations are possible. Second example, a child living with her/his mother, the father living partly in the household and partly on his own. The mother's household may be counted as a single-parent family or a couple with one child; the father's household as an empty dwelling or a oneperson household. Here again, all combinations are possible.
A perfect solution to this problem would consist in taking all the dwellings of each individual into account. This solution is very difficult to obtain, especially in censuses where simple rules must apply. If individuals may belong to different households, the equivalence between dwellings and households disappears, and belonging to the same household or living in the same dwelling is no longer an equivalence relation between individuals. The relations are reflexive, and symmetric, but no longer transitive: If an individual A (partially) lives with B, and if B lives with C, it no longer follows that A lives with C. Dwellings and Households are thus no longer a means to partition the population.
In surveys, the path from a sample of dwellings to a sample of households and samples of individuals also becomes more complicated when individuals live in several dwellings.

## b. Multi-residence as a specific category

Using the French EU-SILC survey, let us describe explicitly these new situations of multiresidence. We restrict the observation to children, whose situations are simpler than those of adults, allowing for imputation. Only limited information is collected in the French EU-SILC survey on the family situation in the second dwelling (a question, similar to the one used in the HILDA survey, has been introduced in the second wave of the French EU-SILC panel, about the presence of 'the other parent' in the second dwelling of children living with one parent only). We could assume that children living with only one parent and living also in another dwelling are in fact living with their other parent in this other dwelling. But it is possible to get a better estimate under the following assumption. We can consider that children do not live with their parents in a collective dwelling, and that the conjugal situations of both parents are independent, if they do not live together. We can also assume that the probability of inclusion of a child is the same in all her/his family dwellings, and nil in a collective dwelling. Thus, it is possible to distribute the family situations of children in their second dwelling, conditional upon the actual family situation in the first dwelling, from the distribution of family situations of all children in the first dwelling. This hypothesis of independence of parents' couple status, if they are separated, is debatable, but it is useful for presenting an order of magnitude of complex family situations.

In practice, imputation was made as following:

- for children living with both parents no imputation was needed: there is no parent in the other dwelling;
- for children living with no parent ( $0.9 \%$ ) the assumption was made that the other dwelling, if any, included both parents;
- for children living with one parent only, the family situation in the other dwelling was imputed (living with the other parent in a single-parent family; living with the other parent in a stepfamily; living with no parent in a collective dwelling) under the assumption that the second dwelling was hosting the other parent if it was a family dwelling, and that the conjugal status of the other parent is distributed as in Table 3).

From these hypotheses, we can guess the family situation of the children in their second dwelling. The main results are presented in table 6 . Among all children, $96.5 \%$ are living only in one family situation, $2.2 \%$ are sharing their time between their two separated parents, and $1.3 \%$ live in two dwellings, without any parent in one of them. Most children (81.1\%) are living with both parents, at least for a part of their time; $15.8 \%$ are living with their mother only, $4.3 \%$ with their father only, and $2.2 \%$ belong simultaneously to these two categories, because they share their time between both parents.

When both parents are living together, having two dwellings is rare among children: $0.7 \%$ of all children also live without them in another dwelling ( $0.5 \%$ were interviewed in the parental home, $0.2 \%$ in the other dwelling), and $0.3 \%$ live with them in their other dwelling (see Table 3).

Table 6. Distribution of children by number of dwellings and family situation in France

| Number of different households | Family situation of children in their first dwelling (where the French EUSILC survey takes place) |  |  |
| :---: | :---: | :---: | :---: |
|  | All children | Children living with one parent | Children living in two dwellings |
| One household (parents have one or two dwellings) | 96.5 | 84.3 | 8.0 |
| Two households (one with the father, one with the mother) | 2.2 | 12.2 | 57.5 |
| Two households (one or both with no parent) | 1.3 | 3.6 | 34.5 |
| All children | 100.0 | 100.0 | 100.0 |
| Household situation of children and parents combined in the first dwelling (1) where the survey took place and in the second dwelling where applicable (2) | All children | Children living with one parent | Children living in two dwellings |
| 1 or 2) Children living with both parents, 2) with no parent* | 81.1 |  | 25.7 |
| 1) In a one-parent family with the mother, 2) with no parent* | 9.5 | 53.1 | 4.3 |
| 1) In a step-family with the mother, 2) with no parent* | 4.1 | 22.8 | 4.8 |
| 1) and 2) Sharing time between both parents | 2.2 | 12.2 | 57.5 |
| 1) In a one-parent family, with the father, 2) with no parent* | 0.8 | 4.4 | 1.6 |
| 1) In a step-family with the father, 2) with no parent* | 1.3 | 7.5 | 6.2 |
| 1 ) and 2) Living with none of the parents* | 0.9 |  |  |
| All children | 100.0 | 100.0 | 100.0 |

*: or without a second dwelling
Source: INSEE, French EU-SILC 2004.

Among children living with one parent only in their first dwelling (second column), $12.2 \%$ are sharing their time between the two parental dwellings. $3.6 \%$ are living in another 'usual' dwelling with no parent (a collective dwelling by definition of the imputation). The most common situation is of course to live with the mother in a one-parent family ( $53 \%$ ). Note that children living with their father only ( $2.1 \%$ of all children, $11.9 \%$ of children with separated parents) are as numerous as children sharing their time between the two dwellings of their separated parents ( $2.2 \%$ of all children, $12.2 \%$ of children with separated parents). Among children living with their father and not with their mother, half of them are in fact also living with their mother in another dwelling.

The situation of shared time between separated parents accounts for $58 \%$ of all children living in two dwellings. The other common situation is living with both parents in one dwelling, with no parent in the other.

These results are very much in line with a recent work by Chardon (2007), who found between $1.3 \%$ and $2.1 \%$ of French children aged $0-14$ sharing their time between their two parents, depending on the double-counting hypothesis, from a merged dataset of 7,436 children from three surveys run by the INSEE in 2006 and 2007.
These estimates are also in line with previous surveys on two-home children conducted by INED on much smaller samples, with children's weights taking multi-residence into account (Table 7). With the recent increase in legal decisions on shared custody, the number of children living in two homes has increased. If children living in two dwellings are counted twice (multi-residence not controlled for), the proportion of children whose parents are separated is upward biased, and the increase between 1986 and 2004 is exaggerated $(+4.7 \%$ instead of $+3.5 \%$ ). Of course, the proportion of children sharing their time between both parents is nearly doubled.

Table 7. Proportion of children with separated parents in 1986, 1994 and 2004 in France and, among them, proportion sharing their time between parental dwellings

| Proportion of | Survey year |  |  |  |
| :--- | ---: | ---: | ---: | ---: |
| children living... | 1986 | 1994 | 2004 | Increase |
| - with their father only | 1.7 | 0.9 | 2.1 | +0.4 |
| - with their mother only | 11.7 | 14.0 | 13.6 | +1.9 |
| - sharing between parents | 0.9 | 1.3 | 2.2 | +1.3 |
| - Total with separated parents | 14.4 | 16.1 | 17.9 | +3.5 |
| - Erroneous total (with double counts) | 15.0 | 17.1 | 19.7 | +4.7 |

Note: the erroneous totals for 1986 and 1994 have been estimated from the exact total and the bias in 2004.

Sources: INED, ESF 1986 (Leridon, Villeneuve-Gokalp 1994), INED, ESFE 1994, INSEE, French EU-SILC 2004

## Conclusion

Several results may be highlighted from this work. First, there may be an emerging phenomenon of two-home adults and children, which is much more visible in France than in Australia.

In France, some 4 to $6 \%$ of adults live in more than one 'usual' dwelling, the estimate depending on the hypotheses made on the eligibility of the second dwelling of two-home adults. Among children, the prevalence is easier to estimate, as all dwellings are eligible. According to French EU-SILC survey, there are $3.8 \%=480,000$ two-home children among 12.4 million children aged less than 18 in France. The most frequent situation before age 18 concerns children whose parents are separated: 270,000 share their time between their two separated parents $(2.2 \%$ of all children). It is likely that in 'routine' surveys without any question about another dwelling, separated parents both tend to register their two-home children as member of their household, thus leading to double-counts for these children and an overestimation of the proportion of children with separated parents: many one-parent families or stepfamilies are only on a 'part-time' basis, if the children from a previous union spend some time with the other parent. Census and surveys that do not take two-dwelling situations into account may overestimate one-parent families for another reason: parents may live as a couple but are not identified as such, if they are registered in different dwellings (both dwellings being in fact used by the couple or by one of the partners). Identifying twohome children may also be useful per se, not only in order to avoid double-counting, as their family situation is very specific and its prevalence is increasing.

At older ages there are other reasons for living in several dwellings. For adults, we can consider: those living apart together but spending some nights together; those living usually in another dwelling in addition to the 'family home', for some reason (health, work, other constraint); retirees visiting and staying with their children and relatives for so long that they may consider having several 'usual' homes, and who may also spend a few months each year in a retirement home or in a holiday home.

The future SILC waves will allow us to study the entries and exits from these situations of multi-residence (Ardilly, Labarthe and Lorgnet 2007). It is likely that some of these situations are temporary, and knowledge of their dynamics will enable us to characterize them more accurately. Multi-residence is much less frequent in Australia than in France. The HILDA survey also provides a mean to follow these situations of multi-residence from one year to the next (Watson 2008).

Surveys and censuses include two-home people in very different ways. In order to avoid double-counting in a survey or a census based on dwellings, it is necessary to know whether the respondents had a chance to be interviewed in another dwelling. This is difficult in practice, but may be of crucial importance for the new French rotating census, as doublecounting is not identified by the individuals themselves, if their two dwellings do not belong to the same annual census wave.

More generally, concepts such as household composition, household size, may dramatically change if individuals no longer live in just one dwelling. For instance the proportions of person living alone in all their dwellings or in one of their dwellings are becoming more and more different.

For all these reasons, INED and INSEE will prepare a methodological survey on families and dwellings, using a large sample linked to the census in the next years, maybe 2011, in line with the study of Family history conducted with the 1999 General population census (Cassan, Héran, Toulemon 2000).

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[^1]:    ${ }^{1}$ CEIES stands for Comité consultatif européen de l'information statistique dans les domaines économique et social; in English: ‘The European Advisory Committee on Statistical Information in the Economic and Social Spheres'. See http://circa.europa.eu/Public/irc/dsis/ceies/library for details on the CEIES and its online publications.

[^2]:    ${ }^{2}$ In the Hilda survey, for children under 24 years of age, another approach of multi-residence and of potential double-counting may be estimated using the responding person questionnaire and the question on non-resident and resident children the person have. Any person aged $15+$ is a responding person. For non-resident children, the respondent is asked where and with who the child usually live (with the other parent, with other relatives, as fostered or adopted children, independently...); for resident children we know whether the child has another natural or adoptive parent living elsewhere. For the purpose of this paper we only use the data coming from the household form.

[^3]:    ${ }^{3}$ The value of this variable led to strange results, the mean time spent in the household being too small to be consistent. We need to further check this information in order to accurately take it into account. In practice we considered that all individuals living in two private dwellings could be present in two household lists, irrespective of the time spent in each dwelling or of the answer given on "possibility of reaching somebody in this household", the respondents being unaware of the durations of the fieldwork. .

[^4]:    ${ }^{4}$ The reference to the 'usual' dwelling, if defined as living at least $50 \%$ of the time may lead to exclude from the sample the person living $50 \%$ of the time in two different dwellings. Shared custody is still quite low in Australia ( $6 \%$ of separate parents share custody - Smyth et Weston,2004) and it is most likely that parents are more inclined to over represent the share of time their children spend in their own household so if any the 'missing persons should be negligible.
    ${ }^{5}$ This estimate is not very accurate because the secondary dwellings are allocated to households and not to individuals; nevertheless it proves that less than one third of secondary dwellings of adults are included in the survey. Of course we do not know whose second dwellings are eligible in practice.

[^5]:    ${ }^{6}$ The French EU-SILC survey includes questions about the number of persons living in the other household. It is thus possible to estimate the proportion of people 'living alone' and to specify, for those who live in more than one dwelling, in how many dwellings they are living alone. But as we focus our work on children, we consider this to be out of the scope of this paper.

