

the different metropolitan population centres and the city of Barcelona, which are well above those recorded for other localities.

As regards the modal distribution, over 45% of mobility in the metropolitan region is satisfied via non-motorised means; the remainder, involving motorised means is shared out between the 34% of journeys made on public transport and the 66% made in private vehicles. However, the analysis of modal behaviour patterns for journeys in the Barcelona region reveals different mobility models, which denote the marked territorial imbalances in the public transport network and the availability of services on a regular basis. Thus, the consequences of an infrastructure system mainly designed to serve the central city, with a basically radial projection and few connections of a transversal character, can be seen.

Despite this, consideration must be given to the differences between mobility on working days and on days off, particularly as regards the activities undertaken. In this sense, if 47% of journeys made on working days are for occupational reasons and 53% of the remainder are for personal reasons, at weekends these figures work out as a ratio of 7% to 93%, respectively.

Indeed, the reason why people need to make journeys greatly influences the timetabling profile of their mobility, the distances to be covered and the choice of means of transport to be used. In this way, journeys for occupational reasons usually cover longer distances, which use up a greater period of time and require the use of motor vehicles, whereas journeys for personal reasons tend to be related with proximity, the reduction of journey time and the use of non-motorised means (although the undertaking of more activities for leisure purposes far from the place of residence on days off is translated into a lengthening of the journeys involved and a greater use of private vehicles).

Nevertheless, despite the general mobility profiles, the nature of people's journeys is markedly influenced by the population segment to which they belong, whether in terms of sex, age or social and occupational circumstances. These are features that give rise to marked differences in the purposes and means of transport used to make journeys. Thus, while on working days men undertake 52% of journeys for occupational reasons, women, on the other hand, make 62% of their journeys for personal reasons. These represent differences that are maintained where the use of means of transport is concerned, with a majority use of private vehicles on the part of employed men, whereas women, children and elderly people usually make greater use of public transport and non-motorised means.

Notwithstanding this, one highly conditioning factor for mobility is having

a driving license and, especially, the availability of a private vehicle, a situation in which only one half of the population in the Regió Metropolitana de Barcelona finds itself. Therefore, the mobility model is shaped not only in accordance with territorial features and the existing availability of transport services and infrastructure, but also from the personal characteristics of each individual and social group.

- 1 This figure takes into account all the journeys recorded for the Regió Metropolitana de Barcelona, whether undertaken by residents or non-residents in the area. With the exception of those cases that do not state the contrary, the article throughout makes no analysis of the journeys undertaken by the non-resident population of the metropolitan area, because of the fact that this represents an insignificant percentage of the total number of movements recorded for the area —around 1.1% of the whole.
- 2 The population data correspond to 2006; the data for business activity correspond to 2002 and refer to the sum total of business entities according to their legal status: natural persons, public limited companies, limited liability companies, co-ownership companies, co-operatives and others: *Source: IDESCAT [on-line]. <<http://www.idescat.net>> [2008].*
- 3 Apart from the Regió Metropolitana de Barcelona, the other territorial areas taken into consideration in undertaking the study are the Comarques Gironines, Comarques Centrals, the Camp de Tarragona, the Terres de l'Ebre, the Terres de Ponent and the Alt Pirineu i Aran.
- 4 The central Barcelona conurbation is made up of the municipalities of Badalona, Barcelona, l'Hospitalet de Llobregat, Santa Coloma de Gramenet and Sant Adrià de Besòs.
- 5 Reference is made here to real time, which as well as taking into account the speed that the means of transport may reach, includes each and every one of the times and distances intervening in the trajectory (Miralles-Guasch, Carme. *Usos del temps i mobilitat*. Barcelona: Ajuntament de Barcelona, 2006, p. 44).

DAILY MOBILITY IN THE COMARQUES GIRONINES

Obdúlia Gutiérrez

1. The journeys of the people of the girona region

In the last few years, the Comarques Gironines has been one of the areas of Catalonia that has grown most in terms of population, moving from 567,552 inhabitants in 2001 to 673,351 in 2006, an increase of 18.6 % —more than 6 points above the average for Catalonia (12.16%). This population increase, together with the often quoted reasons for the increase in mobility of people in all areas of life and all age groups, has led to increasing mobility rates¹.

Until now, mobility for working and studying has been analysed using data extracted from censuses and residential and housing registers of the National Statistical Institute, which includes only journeys for work and study of people aged over 16. Although there is now a

good series running from 1981 (the first time the question about the workplace or place of study was introduced in Catalonia) to 2001, mobility analysis has been reduced to only a part of all journeys, and not even the largest part, as will be seen later.

The extension of the Survey of Daily Mobility 2006 to the whole of Catalonia makes it possible, for the first time for the Comarques Gironines, to have a very large sample which, as well as updating the information, extends the field of analysis and gives important details of the type of movement going on, how and where it is happening and the characteristics of the population making it. The lack of comparable information reduces the analysis to an initial description of the starting situation, in the hope that future editions of the Survey of Daily Mobility will also consider the Comarques Gironines and that it may have more elements of study making it possible to mark developments within the same region and compare them with other regions.

A first extrapolation from the sample for the Comarques Gironines indicates that 91.5% of its population (aged 4 or over) leaves the house every working day and makes some sort of journey. With an analysis population of 643,963, this represents a volume of more than 588,000 people making journeys. The non-mobile population is therefore only 54,981 people.

Considering that each person makes more than one journey a day, the total number of journeys rises to 2,049,407, which means an average of 3.48 journeys per mobile individual on working days, and 3.18 if the whole population aged over 4 is taken into account. This is a figure below the Catalan average (3.38), which is strongly marked by the high level of the mobility of the Regió Metropolitana.

These figures fall at weekends and on public holidays, with 76.9% making journeys. In absolute figures, we are talking about 1,447,875 journeys, a reduction of 29.3% compared to working days. Although the number of journeys reduces notably, the number of mobile individuals does not fall by so much, moving to 495,451, only 15.9% fewer than on working days. All this means, therefore, a reduction in the average journey/person/day, which is 2.92 for mobile individuals and 2.25 considering the entire population.

1.1. What motivates the journeys?

Mobility is differentiated into two broad categories: that motivated by occupation, which has for some time been known as essential daily mobility (to work or study); and a broader group, including all other reasons under the heading of personal mobility. The following table shows the distribution of the journeys of the people of the Girona region, depending on the various reasons.

Although it may seem so, as it is one of the daily movements with the greatest and most predictable degree of recurrence, occupational mobility is not the reason for the largest number of journeys (although the number of individuals moving is something else again) and it lies visibly below personal mobility, with 46.6% of journeys, also counting returns home from occupational journeys.

Meanwhile, personal mobility accounts for 53.4% of movements, distributed widely among the various reasons motivating them. Without taking into account returns home, however, the outstanding ones include mobility for shopping, particularly everyday shopping (7.1%), which almost equals that for study. Another important group is mobility for “leisure/going for a walk/visiting friends or family” which, taken as a whole, amounts to 10.7% of journeys on working days. Finally, the heading “accompanying people” also achieves a percentage worth highlighting —4.2% of flows— which would largely be related to the dependence of the school movements that occur.

But the time when personal mobility reaches its highest percentages is, of course, at weekends and on public holidays, with an overwhelming 89.8% of the total, compared to 10.2% for employment-related movements. On these days, going out for “leisure/going for a walk/visiting friends and family” accounts for 30% and shopping of any kind, amounts to 9.3%. In absolute figures this means, for example, that the volume of movements for leisure and fun or for going out for a walk double compared to working days.

Outward journeys for the various reasons largely return to the place of origin. This fact marks the pendulum effect of movements: returning home accounts for more than 47% of all journeys, both on working days and weekends/public holidays. In the case of personal reasons, returns represent 87.2% of journeys on working days and 91.5% at weekends and on public holidays. In the case of occupational reasons, they represent 89.3% and 92.6%, depending on the type of day. This indicates the high level of returns for all journeys that take place, with a rather greater incidence with those generated for occupational reasons and at weekends or on public holidays.

1.2. Where do journeys occur? Municipal and regional self-containment

That municipalities have ceased to be basic functional units where the main relationships of everyday life occur has been known and analysed for some time. However, the level of acceleration this phenomenon has undergone in the last decade, with all its causes and implications, is something else entirely. For the Comarques Gironines it can be

said that this is the first time information has been made available which, as has been said, allows quantification of this phenomenon beyond mobility for working or studying.

So, according to the Survey of Daily Mobility 2006, of the total journeys made by the population of the Girona region, 1,372,826 start and end in the same municipality, that is, are made without going outside the boundary.

If a criterion is included that the municipality of origin of the journey should coincide with that of residence, we obtain the level of municipal self-containment. This parameter, with its opposite, the level of openness, has been used as an indicator of inter-municipal relationships and of functional crossing of administrative boundaries. In the case of the Comarques Gironines, the average municipal self-containment on working days is 65.8%, while at weekends and on public holidays it falls to 55.7%, figures representing a considerable volume of inter-municipal relationship flows. This is a phenomenon that has not ceased to grow over the past few years as homes, workplaces and services spread out over the region².

Meanwhile, in absolute terms, for the entire Girona region almost as many journeys are made outside the municipality of residence on working days as at weekends and on public holidays: 701,767 and 640,883 respectively. A consequence of this fact would be similar pressure on the inter-urban road network regardless of the day of the week.

As for overall self-containment in the region, 96% of movements made on working days by the resident population take place within the Comarques Gironines, with small variations depending on whether it is occupational or personal mobility. Despite this, it must be noted that personal journeys have a greater tendency to be made within the region than those for working or studying. Therefore, only a small percentage of journeys made by residents of the Girona region —3.7%— are journeys for connection with another Catalan region and an almost symbolic percentage in relation to the total —0.3%— are movements made by the Girona population entirely outside the region. This aspect, concerning the relationships of the Comarques Gironines with other regions, is analysed further in a subsequent section.

1.3. How and when are these journeys made?

A key element in mobility analysis is knowing the means of transport the journeys are made on, as a main indicator of the patterns and behaviour of the population and the existing transport infrastructures. So, in the Comarques Gironines, 41.6% of journeys by local people on working days are made on

non-motorised modes, which basically means on foot or, almost insignificantly, by bicycle. This percentage can be considered low —the Catalan average is 45.1%— and even more so taking into account, as has been said before, that 65.8% of journeys (1,347,417) are made within the municipality of residence, which would lead one to think more of a non-motorised type of mobility, especially in small or medium-sized towns like those in the Girona region, where the possibility of walking or cycling journeys is more viable because of the distances to be covered. The problems generated by this fact —urban congestion, shortage of parking spaces, accident rates, and concern to reduce CO₂ emissions— mean that many towns and villages are gradually introducing specific mobility plans and measures to encourage non-motorised urban journeys which have been reducing.

As opposed to the journeys on foot or by bicycle there are the 58.4% of journeys made on motorised modes, with the absolutely overwhelming majority made in private transport, standing at 54%. Compared to this, public transport accounts for only 4.4%, when the Catalan average for the two types of transport is distributed as 40.6% and 14.3%. At weekends and on public holidays the values are even further from one another, and private transport accounts for almost 61% of all journeys by the people in the Girona region, while public transport is reduced to a tiny 2.2%.

In this sense, the data from the Survey of Daily Mobility of the Comarques Gironines, according to which 76.4% of the population of an age to have some kind of driving licence have one and 62.1% of the total population say they have their own vehicle, is significant. To this information can be added the average level of occupation of a car —1.2 people on working days and 1.35 at weekends and on public holidays— highlighting the low efficiency of the use of private vehicles.

It is clear that towns and villages have expanded and extended over the territory, with outskirts that have been established as simple extensions and other forms of low-density urban development, as well as industrial estates and all kinds of activities and services. Everyday actions —working, studying, shopping, having fun, doing errands— are carried out regardless of the place of residence and by making longer and longer journeys.

These movements are supported by an inter-urban and urban road network designed, as a priority, for cars. All this penalises non-motorised journeys, and it is clear that the vast majority of journeys no longer being made on foot are being captured by private vehicles. There are many studies showing that low-density urban development generates great problems for public transport, which is incapable of serving such widely spread

regions with dispersed population, something that generally also happens with public services, which always need a considerable critical mass in order to achieve efficiency.

As can be seen in the previous table, of the 90,151 journeys made on public services on working days, school transport is the most important, with 27.8% of the total. Urban buses contribute with 19.9% and inter-urban ones with 15.9%. Local and regional trains represent 18.9% and 3.3% respectively (clearly the group of journeys made by metro, tram and FGC —3.3% all together— correspond exclusively to journeys the people of Girona make outside the region).

But an assessment of the importance of mobility on public transport can be biased if the existing range is not also considered. And, from this point of view, the Comarques Gironines has a public transport network of urban and inter-urban buses and regional and local railways which is territorially uneven and which would find it difficult to meet daily mobility needs. So, the surveyed population of the Girona region declares that the main reason for using private transport is the lack of any alternative public transport to travel on. It is therefore unlikely that the greater cost of private transport for its users (the average monthly expenditure given is 96 euros for a car and 20 euros for public transport) or the lack of parking and congestion, could dissuade many drivers from using it.

Inter-urban public transport on the roads of the Comarques Gironines largely functions radially, based on two main centres —Girona and Figueres (which, in addition, are the only ones that are efficiently connected by rail, as the line to Blanes is almost insignificant). Based on this radial logic, only the urban system established between Palafrugell and Sant Feliu de Guixols has its own significant range of public transport.

But the main problem with public transport is rooted not so much in the existence of routes but basically in frequencies, making the majority of bus connections totally inefficient for the everyday journeys of most of the population. In this sense it will be necessary to wait for the next Survey of Daily Mobility in the Girona region to see the effect the creation of the Girona Area Public Transport Consortium could have, as it affects the area where there is the greatest concentration of journeys in the Comarques Gironines. The purpose of the Consortium, established in the summer of 2006, is to co-ordinate the public transport system for travellers in the area of influence closest to Girona, made up of a considerable number of municipalities in the counties of Gironès, Pla de l'Estany and la Selva. Its establishment has meant an improvement in routes and frequencies for existing urban and inter-urban routes and the implementation of some new

routes. The area has been divided into a central zone and six concentric zones, now covering a total of 46 municipalities. The body, however, is still working to draw up a common fare system and on co-ordination proposals concerning the integration of rail services into the collective public transport system.

Concerning urban transport, there are few towns with urban bus routes: Girona and the municipalities immediately surrounding it, as has been mentioned, plus Blanes, Lloret de Mar, Figueres, Olot, Sant Feliu de Guixols and Calonge. Other than the Girona metropolitan service, their effect on total mobility is rather insignificant.

Meanwhile, there are three railway lines affecting the Comarques Gironines: Barcelona-Puigcerdà and Barcelona-Portbou, which function with a regional or State/international logic, and the final part of the line running from Barcelona through Maresme to Maçanet-Massanes. Their function is largely to cover journeys connecting with other parts of the country, particularly the metropolitan area. The non-existence of local trains providing services means that the regional one performs a double function, although there are only four stations benefiting from a stop by the Catalunya Exprés, which is the most frequent type of train.

It is the railway which therefore provides much higher percentages of public transport use on journeys connecting with other regions. These relationship flows with other regions use public transport on 21.6% of journeys, compared to 3.7% on internal journeys, as can be seen in the following table. Clearly, the highest percentage —28.7% outside the region (in absolute figures that are irrelevant in relation to the total) basically corresponds to movements allowed by the entire Barcelona transport network.

The lack of available public transport contributes to the fact that 95.2% of journeys by people in the Girona region are characterised by being unimodal, that is, using a single means of transport, while only 3.9% are bimodal and 0.9% trimodal or more. And, within the multimodal journeys made in more than one stage, the most frequent are those combining private transport with a non-motorised mode.

On working days, occupational mobility makes most use of motorised modes, as can be seen on the following graphs. 63.1% of journeys to work or study are made in private transport and 6.2% on public transport, compared to 46% and 2.8% of personal journeys. So, more than half of journeys for personal reasons are made on foot.

It can be said that mobility for personal reason largely corresponds to a local logic —65.6% of non-motorised journeys are for personal reasons, while journeys for occupational reasons represent the longest

trips— it is basically the workplace that has undergone the greatest dissociation from the place of residence.

1.4. The time dimension of journeys

If we begin to analyse the time dimension, journeys on working days for everyday shopping —one of the personal reasons which, as we have seen, covers the largest number of trips— are those which are, on average, the shortest: 12.3 minutes. By contrast, access to health services (doctor/hospital) requires journeys that take longer, an average of 22.5 minutes. Going to work would be in an intermediate position, with an average journey of 15.9 minutes.

The average duration of journeys as a whole varies considerably depending on whether they are movements within the municipality of residence or whether the destination is another municipality. For inter-municipal movements, the average on working days is almost 25 minutes, while for intra-municipal movements this average is reduced by half —about 12 minutes. At weekends and on public holidays, the population allows itself longer journeys and the figures move to 31.5 and 15.7 minutes, depending on whether they are inter- or intra-municipal movements. The increase in inter-municipal flows clearly involves spending more time, a cost added to the other negative consequences of the phenomenon.

Another temporal consideration refers to the time band when the journeys start. On working days, flows for occupational reasons are those generating the sharpest peaks, which cause the most problems with the use of private transport. The following graphs show that 7 to 9 a.m. are the point of maximum concentration of occupational movements, coinciding with people going to work or study. This is when almost half the journeys made during the day for this reason occur (235,000 journeys). Between 2 and 4 p.m., but to a much lesser extent (108,000 journeys), is the other peak time for going to work or study. Returning home from the place of occupation is less concentrated and is extended throughout the afternoon, although there are peaks between 1 and 2 p.m. and 5 and 6 p.m.

For its part, journeys for personal reasons do not generate such sharp peaks. The start of these movements is later than occupational ones and marks a first maximum between 9 and 11 a.m. (with around 114,000 journeys). In the afternoon comes the most important time in terms of total volume of these flows, with a maximum of 5 and 7 p.m. (137,000 journeys). It can be said that returning home from personal journeys uses the least-occupied time bands and these are journeys that go on later, with a maximum between 7 and 9 p.m..

All occupational and personal outward and return journeys together mark the

band between 7 a.m. and 9 p.m., with concentrations always around or above 100,000 movements. 8 to 9 a.m., 1 to 2 p.m. and 5 to 6 p.m. are the times with the greatest volumes, especially last period in the afternoon, which goes on until 8 p.m. These are also the most significant and most problematic times for private vehicle usage.

It must be said, however, that this behaviour, viewed generally, is repeated throughout Catalonia, given the coincidence of working, school or commercial hours throughout the country.

1.5. Who makes the journeys?

The characteristics of the population that is moving, their gender, their age or their professional position, are other variables which, in principle should not show different behaviour in the Comarques Gironines than in the rest of Catalonia. However, compared to some regions there can be small variations depending, for example, on activity rates among the population.

All segments of the population, taking into account both mobile and non-mobile sectors, are above the average of 3 journeys a day, except for the population aged 65 and over —the population of pensioners and retired people. The other groups range between 3 and 3.49 journeys/day. As those with greatest mobility, we should highlight women aged 30-64 and children aged 4-15. But, viewed overall, the average number of journeys/day depending on sex does not vary very much between men and women: 3.16 and 3.20 respectively. Meanwhile, and depending on the professional situation, active employed people and students are those who, on average, make the most movements.

Men are those who move most for occupational reasons, and 53.1% of their journeys are for this reason. By contrast, 60% of women's movements are devoted to personal reasons, reaching 65.2% in the 30-64 age group, making clear the sex differences in activity rates and greater female devotion to tasks associated with children. Meanwhile, school or retirement age are those when occupational or personal reasons, respectively, are most important, regardless of sex, as happens with the professional situation in terms of the employed and unemployed.

The differences are really significant when it comes to analysing who uses one form of transport or another. Men use private transport on 60% of their journeys, while women do so on only 48.1%. In any of the age groups established, men outstrip women in use of this form of transport. By contrast, women travel more on non-motorised modes and on public transport. The only female age group outstripping the male average for the use of private vehicles is 16-20 (60.1% of

their movements). Women aged over 65 are those making most journeys on foot (78.8%) —the segment of the population which has had least access to driving licences and to their own vehicles. At the other extreme is the male group aged 30 to 64, which uses non-motorised means for only 28.6% of its journeys. The use of public transport has its highest percentages among schoolchildren and students, particularly those aged from 4-15 and also among women aged 16-29.

2. Journeys and regional relationships

The information analysed in this section refers, on one hand, to the volume and nature of journeys relating the Comarques Gironines with the other regions of Catalonia and, on the other, to movements made within the region itself at the level of breakdown permitted by the sample —the county.

The total number of journeys occurring in the region as a whole, regardless of the place of residence of the people making them, is 2,143,938 on working days —4.6% more than those made exclusively by residents of the Girona region. At weekends and on public holidays, the number of journeys falls to 1,764,649 —21.9% more than the total journeys of the Girona region population. In this case the difference is much greater, and is associated with the attraction of the region as a tourism and leisure area in Catalonia.

Of all the flows based in the Comarques Gironines, 7.6% are to connect with another region; that is, they start or end in a different region. This percentage rises to 17.6% at weekends and on public holidays for the reason mentioned above. But beyond these general figures, a more specific analysis of where these movements go and where they come from could be interesting, and this is carried out below.

2.1. The relationships between the Comarques Gironines and the rest of Catalonia

The regions with a major relationship with the Comarques Gironines are absolutely predictable based on the way modern Catalonia works. So, as can be seen in the following maps and table, the metropolitan area is by far the most important, with 90% of the external vehicle movements linked to the Girona region centred on it. Far below this come the Comarques Centrals, which, however, stand well above the other regions of Catalonia. Relationships with this area, encouraged by the transversal trunk road, are predicted to become more significant in the next few years, with the opening of the Bracons tunnel between Garrotxa and Osona.

The metropolitan region and Comarques Centrals are outstanding both on working days and at weekends/on public

holidays, but the number of journeys practically doubles for the latter. For the other regions, only in the few journeys connecting Girona with the Ponent region is mobility on working days greater than at weekends/on public holidays. The relationship of the Comarques Gironines with regions outside Catalonia must also be highlighted, although only a small number of journeys is involved, ranging between 3% and 5% of the total on working days and at weekends/on public holidays respectively, figures that are even higher than for some areas of the country itself and are probably explained by cross-border links, which are strong in some of the counties involved.

As for the reasons for these journeys, on working days notable differences can be seen by regions. Greater numbers of journeys for work-related reasons appear in the areas physically or functionally furthest from the Comarques Gironines, that is, Terres de l'Ebre and Ponent. On the other hand, there is a larger proportion of movements due to personal reasons, or with a great balance, in the areas nearest to or best connected with Girona.

Meanwhile, although the same figures can be seen at weekends and on public holidays, the difference between regions is considerably affected by the vast majority of journeys for personal reasons. Only in the Comarques Gironines themselves (9.7%) and in Comarques Centrals (7.4%) do work-related reasons still maintain any kind of importance, but never exceeding 10% of the total.

2.2. County flows

Most of the journeys made by the people of the Girona region are within the same county, both on working days and at weekends/on public holidays. Although on working days self-containment is always above 80%, and in many cases close to 90%, at weekends and on public holidays all counties exceed 70% (the radius of leisure movements seems to be greater). The greatest self-containment is observed in Alt Empordà —probably because of some very well-defined job markets and because of the importance of the agricultural economy, as well as because of the good leisure opportunities— and the least in Pla de l'Estany, a county closely linked to the city of Girona and its dynamics.

Another piece of data from this map that may be quite interesting is the difference in county self-containment between working days and weekends/public holidays. Self-containment is always lower for the latter, when people travel more, and, in this sense, the difference should be highlighted in Gironès, which perhaps corresponds to dynamics characteristic of metropolitan areas.

Municipal self-containment —that is, taking the municipality and not the county

as the self-containment sphere— is always, as might be expected, lower than the county figure. All values for working days are lower than 70%, with the exception of la Selva (71%). Meanwhile, at weekends and on public holidays, 60% self-containment is never exceeded except in Ripollès (61.6%), with the figure falling to 46% in Pla de l'Estany.

Taking into account all the journeys identified within the Comarques Gironines, whether or not by residents, it can also be seen that the vast majority of journeys are made within the boundaries of the region—always above 80% of the total movements on working days. However, the differences between them are qualitatively significant, making it possible to deduce the importance of a central urban area which is being consolidated between Gironès, Pla de l'Estany and la Selva and, because of this, their internal journeys are relatively few.

This analysis is strengthened if it is observed that connection displacements of the first two with other counties are also high in percentage terms. As for la Selva, more care needs to be taken with this comment, and the data highlights the dual nature of this county, with part of the plain and coast having solid links with the Regió Metropolitana de Barcelona and another part of the plain and interior linked, instead, to Girona. The first part of this statement also serves for Ripollès, which is outstanding for its significant percentage of journeys outside the Comarques Gironines, because of a well-known trend to follow the axis opened up by the Ter southwards.

The hypothesis of the urban area as a consolidated phenomenon is also valid if the importance of Gironès in all journeys from the seven counties is observed on the following graph, taking into account only inter-county journeys. Although the county represents little more than one in four of the first type of journey (26.3%)—a similar proportion to the importance of its population—it accounts for considerably more than a third of the second type (38.7%). The same happens with Pla de l'Estany, although a much smaller number of journeys is involved. In the other counties, either these percentages do not change very much or they change in the opposite direction to Gironès, falling considerably short of the percentage of inter-county journeys.

At weekends and on public holidays, the number of flows is considerably reduced, but the features do not change very much compared to working days. Although the average number of intra-county journeys—internal ones— falls, from 85% to 79.3%, the behaviour of the different counties remains quite similar. The urban area of Girona continues to emerge, as well as the links of la Selva and Ripollès to other regions. But in these two counties there is a subtle difference from working

days, which is that, among connection journeys, the ones linking with other Girona counties are now more important than those to or from other regions. In other words, the relative data seems to say that at weekends and on public holidays, the people of la Selva and Ripollès are those who have the greatest tendency to move around within the Girona region, while the other counties “take advantage” of these days to visit other regions.

The data in table 8, which crosses all counties with all counties, also consolidates the idea of the importance of the urban area of Girona. Without going into detail in the figures, what can broadly be seen is the significance of the relationship between the counties involved in the area and the importance of the occupational link ahead of the personal one. But the attraction exercised by Gironès over all counties is also made clear, and is always far greater than any relationship they may have with any other county.

Outside the Girona region, the main counties of origin of journeys to it are also absolutely predictable: as can be seen in table 9, the importance of the Regió Metropolitana de Barcelona and the logic of proximity cannot be avoided. Barcelonès, Maresme and Vallès Oriental confirm this. Only the flows from Vallès Occidental and Osona seem to partially alter this logic as the former, which is further away, gives rise to more journeys than the latter. Undoubtedly the differences in population and accessibility, which probably penalise Osona, give a reason for these figures.

2.3. County journeys and means of transport

Finally, a last perspective for analysis involves the means of transport used. From the graphs that can be seen below, the outstanding feature is the almost absolute predominance of private transport. Despite all this, there are important differences between counties, largely deriving from their urban and employment structure.

In the case of inter-county journeys and on working days, mobility is overwhelmingly private—above 80% everywhere—and non-motorised transport is, as might be expected, insignificant. Public transport only reaches significant figures in Alt Empordà and Gironès, where the importance of an urban centre with a major public transport network is clearest. Probably the decisive differential fact compared with other counties is the rail service and, because of this, the highest percentage use of public transport between two counties appears between Gironès and Alt Empordà.

But perhaps the most interesting information offered by these figures is the indication of the insufficiency of public

transport with a metropolitan logic. If this type of service was not unsatisfactory, it would be impossible to understand why the strong relationships between Gironès, Pla de l'Estany and la Selva do not give considerably higher percentages of mobility on public transport. Table 10 makes it possible to confirm this statement: movements between other counties have higher percentages for public transport use: Alt Empordà-Selva, Baix Empordà-Gironès (which have better public transport coverage and frequency), Gironès-Garrotxa,...

Meanwhile, as is to be expected, intra-county journeys show a much more balanced relationship between the different means of transport. Or, rather, non-motorised journeys—basically walking—take on greater importance. These are movements often within the same municipality, and walking or cycling therefore remain a possible, efficient way of getting about. In this case, the mode that is most insignificant is public transport, given that there are very few networks—and no rail network—that are county-based or correspond to a county logic.

On the other hand, at weekends and on public holidays, the most outstanding change is precisely the fall in non-motorised mobility, probably another indicator that intra-municipal weekend journeys are made with a greater radius. And, it would seem that in these cases public transport loses practically all its efficiency.

3. Conclusion

Extrapolation from the Survey of Daily Mobility 2006 sample has made it possible to quantify the total number of journeys made by the people of the Girona region, exceeding 2 million on working days and 1.4 million at weekends and on public holidays. An average of 3.18 journeys/person/day—below the Catalan average (3.38), which is strongly marked by the high mobility of the metropolitan region. But the number of journeys taking place in the Comarques Gironines is considerably greater if those made by non-residents are also counted. At weekends and on public holidays this means an increase of almost 22%, a fact explained by the attraction of the area for tourism and leisure throughout the country.

Personal mobility is what motivates the greatest number of journeys, but it is flows for occupational reasons that generate the sharpest and most problematic peaks because of their greater concentration at particular times of day and because of their greater use of private transport. As a whole, more than 58% of journeys on working days made by the people of the Girona region are made on motorised modes, with the car showing an absolute pre-eminence. Public transport achieves only 4.4% of the total,

10 points below the average for Catalonia. At weekends and on public holidays the values are still more extreme.

This pre-eminence of private transport to the detriment of journeys on foot and on public transport is a fact related to growing urban dispersion, very clear in the last decade in the Comarques Gironines, and to a public transport or urban and inter-urban buses, regional and local railways which is territorially uneven and which does not meet everyday mobility needs. Public transport only achieves more significant usage percentages in journeys to other regions.

The metropolitan region centralises 90% of external journeys linked to the Girona region. The second region with an outstanding role compared to the others is Comarques Centrals. Among these links, the number of journeys at weekends and on public holidays is particularly outstanding, doubling compared to working days.

Finally, a county analysis of flows makes clear the attraction exercised by Gironès on all counties in the region, and reflects the reach of a central urban area becoming established between Gironès, Pla de l'Estany and one end of la Selva. In relation to the latter county, flows reflect the dual nature of this area, with part of the plain and coast having solid links with the metropolitan region of Barcelona and another part of the plain and the interior linked directly to Girona. Ripollès would be the other county that escapes this direct attraction and also maintains a significant percentage of journeys outside the region, following the axis opened up by the Ter southwards.

Meanwhile, a significant piece of information offered by the data is the indication of the insufficiency of public transport with a metropolitan logic, given some very low percentages for use of this mode in an area with strong relationships. In inter-county journeys, mobility is basically private everywhere —above 80%. Only in Alt Empordà and Gironès does public transport achieve significant figures, probably because of the differential fact of the rail service, which also means that the highest percentage for public transport use between two counties occurs between Alt Empordà and Gironès.

DAILY MOBILITY IN CAMP DE TARRAGONA

Joan Alberich González

1. Camp de Tarragona: the territory and demographic processes

The first official record we have of this territory being referred to as Camp de Tarragona dates back to 1315, however it was not until 1995, when the Pla territorial general de Catalunya (DPTOP, 1995)¹ was approved, that it was legally recognised as one of the seven territorial areas of Catalonia, in turn the beginning of its further division into geo-political administrative regions.

The territory covered by the Camp de Tarragona comprises a total of six regions: three regions which make up the “Camp” in the strictest sense (Alt Camp, Baix Camp and Tarragonès), and the three bordering regions (Baix Penedès, Priorat and the Conca de Barberà —see figure 1). It covers a total of 2,997.7 km² (9.45% of the total territorial area comprising the autonomous Catalan territory), with a resident population, as of January 1st 2007, of 575,333 (8.0% of the total population of Catalonia).

Leaving aside more detailed analysis, which is not the focus of this study, the demographic evolution of the Camp de Tarragona can be seen in terms of two processes: one which we could call “quantitative” (population growth), and one of a “qualitative” nature (how towns and cities have developed and their functional integration within this territory).

From the quantitative perspective, one outstanding feature is the very significant population growth in recent years, making it the most dynamic of the seven territorial areas of Catalonia: if we take the year 2000 as a starting point, the population has grown by 30.1%, double the overall figure for Catalonia (15.1%), and significantly higher than its closest rival, the Girona regions, (24.9%). It is also worth noting that the population growth rate for the territory's metropolitan area is the lowest (only 12.1%).

These population growth figures for Camp de Tarragona reflect general demographic tendencies in Catalonia which, since the beginning of the 21st century, have been due to three complementary factors. First, the upturn in the birth rate after the lowest recorded rates at the end of the 20th century, above all due to the arrival of a sizeable generation from the baby boom who are now at the reproductive age. Secondly, the increase in migratory flows from outside the Spanish state, which has accounted for the considerable increase in foreign residents: in 2000 they represented 4.1% of the total population, but by 2007 this figure had risen to 16.1%. Third and finally, the decentralising tendency of population distribution moving

from the Metropolitan Area of Barcelona to the metropolitan belts and neighbouring municipalities.

But from my point of view, when analysing the mobility of the residents of Camp de Tarragona, what is even more interesting than this quantitative development in terms of population growth, is the qualitative perspective, which allows us to see a developing process of urban growth and cohesion. Camp de Tarragona is increasingly becoming a growing metropolitan area characterised by a high degree of interrelations between its municipalities resulting from mobility flows. These dynamics are sustained by the traditional urban triangle comprising the cities of Tarragona, Reus and Valls which favour polycentric urban structures; and the coastal tourist area, Costa Daurada, which generates the internal tourist-residence mobility characteristics of this area.

These are the findings of various studies on this region (González, 2003, 2004), including a recent doctoral thesis on the living spaces of the Catalan population and the functional spaces they generate, based in part on data from the 2001 census (Alberich, 2007). The way is now open to pursue more in-depth studies, and so this analysis of the territorial distribution of mobility flows is made from the perspective of functional interrelations between territories (see section 4).

2. Mobility in camp de Tarragona

In an attempt to broach the widest range of aspects related to mobility covered by this survey, the information presented in this section covers the following aspects: overview of the data, motives for making journeys, principal means of transport used, average time taken and which hours of the day, territorial distances travelled and, finally, the mobility differential according to the socio-demographic features of the population.

2.1. Overview

The 4+ resident population in the Camp de Tarragona in 2006 (527,531) made a total of 11,867,435 weekly journeys: a daily average of 1,849,355 on weekdays and 1,310,330 on weekends. Here, a journey is understood as the trajectory from home to a given destination for whatever reason, making use of one or a combination of transport means.

If one considers these figures bearing in mind the percentage of the population of Camp de Tarragona compared to Catalonia as a whole, a certain degree of “over-mobility” can be seen for inhabitants of this region: the figure for weekly journeys (8.0%) is slightly higher than Catalonia as a whole (7.7%)². This level of mobility (also found in the Metropolitan Area) can be explained from the perspective

1 “Low-cost” flights are certainly not a new phenomenon as they have an obvious precedent in the charter flights which began in the 1960s.

2 For the spreading of residences in cities and urban areas and on the economic and territorial structure of the Comarques Gironines, see Vicente i Gutiérrez (2004), Vicente (2003), Olives (2000) and the Girona Chamber of Commerce (2003).