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## Daily mobility patterns of coworkers in non-metropolitan areas, a French case study

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## **Part 4. Coworker Mobility**

### **Chapter 11. Daily mobility patterns of coworkers in non-metropolitan areas, a French case study**

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#### **Summary**

The recent surge in coworking spaces outside urban centres calls us to question the assumed positive externalities of these places and especially their contribution to the transition towards more virtuous mobility practices. Daily mobility in low-density areas, heavily dependent on cars, is in fact a major issue in the ecological and social transition. The interest generated by coworking spaces outside of metropolitan areas, especially for public authorities, therefore entails more thorough documentation concerning their effects on mobility. By using both GPS tracking and in-depth interviews, we have been able to develop a typology of the daily mobility patterns of coworkers on the margin of metropolitan areas and therefore demonstrate the importance of rationales that integrate the territorial dimension and the embedding of social relations on the structuring of mobility.

#### **Key Words**

Mobility, coworking, metropolitan area, peri-urban, rural, GPS

#### **Introduction**

Coworking spaces outside metropolitan areas, in France and more broadly on a worldwide scale (Akhavan, Mariotti, and Rossi, 2021; Knapp and Sawy, 2021; Tomaz, Moriset, and Teller, 2022; Capdevila, 2021), have experienced constant growth for the past ten years (Lévy-Waitz, 2018; 2021), with a significant acceleration since the COVID-19 pandemic (Howell, 2022; Mariotti, Di Marino, and Bednář, 2023; Mariotti, Akhavan, and Rossi, 2021) and its effects on both the organisation of work (Tomaz, Moriset, and Teller, 2022) and the transformation of people's relationship with space (Choplin 2020; Leducq, 2021). This heightened interest in coworking spaces (Spreitzer, Bacevice, and Garrett, 2015; Krauss et al., 2019), especially those located on the periphery of major urban centres, calls us to question the assumed positive externalities of these places in France, which are widely acclaimed by public authorities (Lévy-Waitz 2021) as well as their contribution to social, economic and ecological transitions in a territorial system whose focus has shifted to low-density areas. Daily mobility in the French peripheral areas, lacking cohesion with urban agglomerations (Cailly 2003), heavily dependent on cars and whose populations therefore suffer rising energy prices more than elsewhere (Dodier, 2015; Jouffe and Belton-Chevallier, 2013), is a major issue in the ecological and social transition (Huyghe, Baptiste, and Carrière, 2013). Catering for the new aspirations of a population that wishes to develop on the periphery, both geographically and socially, by moving away from urban centres and seeking a new balance between professional and family life (Krauss et al., 2019), new collaborative work spaces, also known as coworking spaces or third places (Flipo and Lejoux, 2020), have been the focus of attention for several years from public authorities and scholars. The interest in these places, when they are mainly envisaged as new work places, originates from their assumed ability to drive a movement of economic revitalisation (Vogl and Akhavan, 2022) in sectors long sought-after by populations seeking a rural ideal but suffering from dependence on urban centres. In this dynamic of relocating economic activities in rural and suburban areas, which still has some untapped potential today, the French public authorities see a possible solution for one of the main difficulties of these low-density areas, namely, the daily mobility of their populations which is based essentially

on owning and being dependent on a personal vehicle (Huyghe, Baptiste, and Carrière, 2013). “The engagement of a community and its local, deep-rooted collective action” (Lévy-Waitz 2021, 3) which are meant to foster these new coworking spaces, are seen by decision makers as a motor for more sustainable mobility especially by reducing commuting to and from urban centres (Lejoux et al., 2019). For scholars however, the effects of coworking spaces on structuring the daily mobility of their users, and their participation in the overall reduction of mobility is not so obvious. These issues require closer examination of the daily mobility of coworkers in non-metropolitan areas. This is what we propose as part of this contribution, with a focus on a French case study.

To do this, we will present the results of a research conducted between 2018 and 2022<sup>1</sup>. Based on two complementary methodology tools, we were able to document coworker’s daily mobility. Firstly, we conducted a quantitative survey using an online questionnaire among users (n=226) of a large number of coworking spaces in France and, secondly, we conducted a mainly qualitative survey using GPS data loggers, which allowed us to record all the movements of a certain number of users (n=15) of two coworking spaces and also do some in-depth interviews. The results of these surveys allowed us to develop a typology of the mobility patterns of coworkers in relation to the integration of the territorial dimension and the embedding of social relations. Beyond the influence of the location of the coworking space on the structure of daily mobility, these results tend to suggest the importance of the biographical trajectories of individuals in changing practices (Cailly, Huyghe, and Oppenheim, 2020; Rau and Manton, 2016), as well as the impact of how the coworking space is integrated as part of a professional and personal life plan. While the quantitative survey confirms that reducing commuting is not the key motivation for going to a coworking spaces, which is what other studies have also highlighted (A’URBA, 2013; Bentayou et al., 2019; Flipo, 2021), the qualitative survey goes further by revealing the diversity of daily mobility practices. This result goes against the simplifying representations of the reduced or conversely the increased daily mobility of coworkers in the margin of metropolitan areas. Although it may seem paradoxical at first sight, the more or less intense daily mobility that we have observed seems to merge with the coworkers’ level of acceptance of a territorial development model focusing on the local dimension, which is catalysed by coworking spaces. These results thus confirm the role of daily mobility as a driver of links to the local community and highlights the diversity of daily mobility patterns of coworkers in the margin of metropolitan areas.

### **Coworking in the margin of metropolitan areas for a mobility transition?**

The phenomenon of coworking spaces, which appeared at the heart of global, creative and competitive metropolitan areas (Florida, 2004; Leducq, Demazière, and Coquel, 2019), has recently favored non-urban areas, particularly in the case of France, which is experiencing increased growth of these places in both rural and suburban low-density areas (Flipo, 2021; Leducq, Demazière, and Coquel, 2019). With 52% of third places outside the 22 French administrative metropolitan areas listed in the latest France Tiers-Lieux 2021 report (Lévy-Waitz, 2021) versus 42% in 2018 (Lévy-Waitz, 2018), the tropism of coworking spaces for low-urbanised areas is undeniable. Supported and accompanied in their creation and development by small towns, municipalities and inter-municipal cooperation, these places appear to local and national public authorities as important tools for a new form of rurality (Flipo, 2020). The national association France Tiers-Lieux sees these rural and suburban spaces as an environment conducive to the expression of these new forms of activity. “It is at the heart of peripheries, priority neighbourhoods, medium-sized towns, small towns and villages that the full potential of third places is expressed” (Lévy-Waitz, 2021: 4). This strong link between new rurality and the development of coworking spaces is also underscored by Flipo (2020). These spaces in rural areas meet both the need for proximity on an economic level and

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1 This research is part of the PERI#WORK programme: “Working in the margin? Coworking spaces as nodes of a new mobility system outside metropolitan areas”, funded by the French National Research Agency (ANR-18-CE22-0010-01).

at the same time enhance links to the local community that are characteristic of new representations of rurality. While these places develop easily in these areas, they nevertheless reflect a certain type of relationship with the rural space, one that is both elective and flexible, characteristic of a rural middle class, made up of executives and intermediate professions with significant cultural capital (Bruneau and Renahy, 2012; Paranthoën, 2013).

While questioning the socio-demographic trends observed for some time in low-density areas in France (Bontron, 2008; Pistre, 2011), the close link with metropolisation supporting this renewed interest in rural areas raises another issue, that of the daily mobility of coworkers located in these areas. Known for being a major reason for urban sprawl, population dissemination on the outskirts of major urban areas is also one of the main reasons for the growing number of miles travelled and the disturbances that this generates (Bassand, 1997; Bassand and Kaufmann, 2000).

In just a few years, the question of daily mobility has thus become one of the key issues in the metropolisation process. This issue has not escaped the attention of public authorities, who see the emergence of coworking spaces in low-density areas, and their assumed ability to retain workers locally, as a potential lever for the transition towards more sustainable mobility. Support by French public authorities for these new places, at all territorial levels (“new spaces, new links” programme by the French National Agency for the Cohesion of Territories, call for projects “workshops of territories”), owes a great deal to the assumption that these places are likely to contribute to relocating employment in rural and suburban areas, and thus to reduce commuting (ADEME, 2014; CGET, 2015). However, as highlighted by researchers, this assumption has little empirical foundation (Bentayou et al., 2019; Flipo, 2021). It is based on the apparently trivial but often unquestioned premise that the attendance of coworking spaces in rural and suburban areas may replace commuting trips between large urban centres and their peripheries with local commutes whose spatial extension would then be substantially inferior. However, this assumption is based on the results of studies focused on teleworking employees, who are not the main users of coworking spaces. The population using coworking spaces in low-density areas appears to be made up only partly of teleworking employees (Bentayou et al., 2019; Flipo, 2021) but mainly by individual self-employed entrepreneurs, as our surveys show (PERI#WORK, 2020). The use of a coworking space by these populations does not necessarily imply the replacement of mobility towards urban centres with more local commuting. On the contrary, joining these places may in some cases even trigger additional trips (A’URBA, 2013). Thus, “ultimately, coworking spaces may only make a modest or even marginal contribution to the issues of mobility” (Bentayou et al., 2019: 25).

The results of these initial investigations, which prompt us to temper the enthusiasm of public authorities, raise a certain number of questions. Before assessing the ability of these spaces to accompany coworkers towards a reduction in their travel, and more broadly, towards more sustainable practices (Lejoux et al., 2019), it is appropriate to ask: What are the daily mobility patterns of coworkers in low-density areas? What type of relationships with space are coworkers seeking and developing in these areas? And to what extent do these coworking spaces create nodes around which spatial practices can be organised?

### **Daily mobility from the individuals’ point of view**

To elucidate these questions on coworking spaces, we have deployed a survey protocol for the fine-grained documentation of mobility and social practices of coworkers in non-metropolitan areas. While most research on these questions is based on declarative data, collected within the framework of surveys using questionnaires or interviews, we opted for a real and exhaustive measurement of daily mobility, using GPS as we had done in a previous research on low-density areas (Baptiste, Feildel, and Huyghe, 2018; Feildel, 2014; Feildel and Martouzet, 2012). Global Positioning System is a powerful tool for mobility surveys, making it possible to access a particularly fine-grained description and understanding of the spatial and temporal framework of movements (Renso, Spaccapietra, and Zimányi, 2013). In this way, we monitored several groups of coworkers, by

equipping them with an individual GPS data logger, allowing us to precisely chart all their movements, through the collection of georeferenced data and their timestamp. This mechanism was implemented in a sample of 15 coworkers, users of coworking spaces located in low-density areas outside metropolitan areas in France. The recordings were taken over a 2-week period for each individual, in an asynchronous manner, between December 2019 and January 2022, excluding the periods of lockdown imposed by the French government as part of the fight against the COVID-19 pandemic. We decided to apply this protocol to users of two coworking spaces, which we chose in relation to the specific characteristics (location, length of existence, professional and sociological profiles of the coworkers, type of economic model) in order to obtain a diversity in the use of these places and the territorial dimension influencing the daily mobility of coworkers.

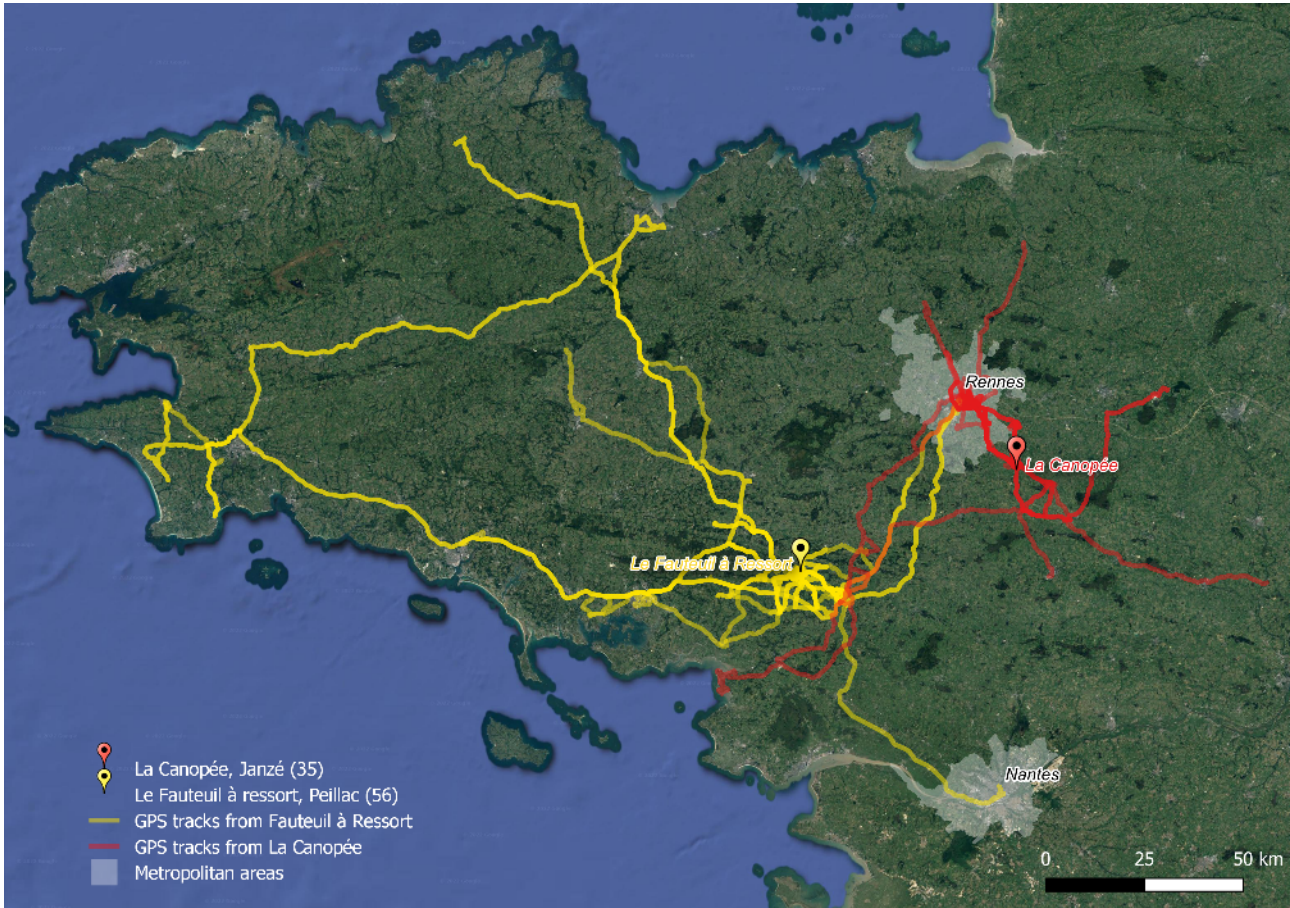
The two coworking spaces chosen for this survey were Le Fauteuil à Ressort, located in Peillac in the Morbihan department, and La Canopée, situated in Janzé in the Ille-et-Vilaine department (Map 1). These two municipalities, in the region of Brittany in France, have contrasting geographic and demographic profiles. Peillac is a small rural town that is losing inhabitants (1,897 inhab., 2019), which, in the typology of French country areas (Hilal et al., 2011) falls under the category of farming and industrial country areas under weaker urban influence. Janzé is a small town of relative importance (8,629 inhab., 2019) with a regularly growing population, and falls under the category of densified rural area on the periphery of towns with very strong residential growth and a dynamic economy. These differences in geographic and demographic profiles are explained mainly by the distance between these two municipalities and the metropolitan areas criss-crossing the western part of France that exercise their influence on these rural and suburban areas. Peillac is situated 8.7 mi from Redon (10,032 inhab., 2019), a small town in the south of the Ille-et-Vilaine department, and almost equidistant (29 mi) from the urban centres of Rennes (451,762 inhab., 2019) and Nantes (656,275 inhab., 2019). As for the town of Janzé, it is very clearly situated within the area of influence of the city of Rennes, barely 16 miles away.

The coworking spaces we focused on in these two municipalities are located in the village centre. They nevertheless differ in terms of length of existence, the type of economic model, the number and the professional and sociological profiles of coworkers. Le Fauteuil à Ressort in Peillac was founded in 2016 as an association created by a workers' collective. It stems from a community-based rationale, on the model of a shared, self-managed office (Flipo, 2020). In 2019-2020 this space had about twenty coworkers, hosted in the premises of a former hotel rented by the group and repurposed into shared offices during works managed by the founding members themselves. This coworking space is characterised by a strong collective will that initiated the creation and coordination of the place, as stated on its website, "[...] was born of the desire to exchange views on each other's professions and to work together". Workers who use this space are mainly self-employed workers, and they work in the arts, entertainment and recreation, information and communication, specialised, scientific and technical activities, but also craftsmanship and construction. Le Fauteuil à Ressort therefore differs from La Canopée in Janzé, insofar as the latter coworking space stems from a public initiative.

Open in 2020, La Canopée is a project promoted by La Roche aux Fées community of municipalities, which received aid from the European Union, the French State, the Regional Council of Brittany and the Ille-et-Vilaine department. In 2020, this coworking space, associated with a fab lab, welcomed about thirty coworkers on the first floor of the post office building, with 850 m<sup>2</sup> divided into open spaces, individual offices and meeting rooms. The professional and sociological profiles of the coworkers are more varied, with independent workers but also teleworking employees in the information and communication sectors, specialised, scientific and technical activities, business, administrative service activities, the arts and training.

From these two coworking spaces, we recruited 15 individuals for our survey, 9 coworkers from Le Fauteuil à Ressort and 6 coworkers from La Canopée, while ensuring the representativeness of the professional and sociological profiles of all the coworkers of each space. These 15 individuals were

equipped with a GPS data logger for two weeks, including weekends, over normal periods excluding school holidays and lockdowns. The GPS data loggers allowed us to collect all the positions of the individuals over a daily range of 14 hours, between 8 am and 10 pm, with a time frame of 3 seconds between each position. All the recordings allowed us to analyse over 2,000 hours of recordings, with an average of 10 days of exploitable GPS readings per individual, and more than 4850 miles in total, with an average of 330 miles travelled per individual for an average standard deviation of 150 miles across the 15 individuals (Map 1).



**Map 1: GPS tracks from La Canopée and Le Fauteuil à Ressort**

These data made it possible to precisely quantify the movements of the individuals. However, in view of the “new mobility paradigm” (Sheller and Urry, 2006; Urry, 2000; Hannam, Sheller, and Urry, 2006), our approach was not limited to this quantification. After being processed<sup>2</sup> and mapped, the individual GPS tracks were used as reactivation material (Feidel 2014) as part of more in-depth interviews, leading to the semantic enrichment of the GPS track (Chardonnel et al., 2021). The survey protocol was designed so as to use the cartographic representation of the GPS track as a conversation starter, bringing the individuals to question themselves on their daily mobility and the meaning they give to it (Bailleul and Feidel, 2011). The in-depth interview established a discursive outline of the individuals’ daily mobility in relation to their life (including the main places of residence, their location, their habits in terms of travel and the activities in the places concerned by mobility). It also highlighted the opportunities and the constraints felt by the individuals as being a burden on their current mobility, from both a spatial and a social aspect

<sup>2</sup> The processing of GPS tracks mainly consists of the manual or automated selection of relevant data by eliminating outliers, or erratic data points or itineraries.

(Canzler, Kaufmann, and Kesselring, 2008; Urry, 2000). This in-depth reactivation interview, which resembles a “cartographic elicitation” (Bailleul and Feildel, 2011; Baibarac, 2015), allowed individuals to independently put into perspective their daily trips in terms of the evolution of systems of constraints and habits, resources, skills, inclinations and values that structure their mobility (Cailly, Huyghe, and Oppenchain, 2020; Müggenburg, Busch-Geertsema, and Lanzendorf, 2015; Rau and Manton, 2016).

The material collected from the sample of 15 individuals was examined in the context of an online questionnaire which we had sent to a large panel of users of coworking spaces in France. This other survey (PERI#WORK, 2020) was conducted between April and July 2020. It reached a total of 226 coworkers in France (107 different coworking spaces), 72% of which were urban (154 respondents were users of an urban coworking space) and 28% outside metropolitan areas, with 20% being suburban (46 respondents) and 12% rural (26 respondents). They were mainly questioned on the effects of the COVID-19 pandemic on their professional practices, but also more broadly on their key motivations for attending a coworking space and their daily mobility before the coworking space was established.

### **Coworkers and daily mobility: working better to commute better**

The data from the online questionnaire (PERI#WORK, 2020) confirm what other research has highlighted (Bentayou et al., 2019), namely that the key motivations of users of coworking spaces are above all linked to the professional activity (social and professional interactions) and to the working environment (seeking a collective and a collaborative dimension). For coworkers located in urban centres and for those in suburban or rural settings<sup>3</sup>, reducing commuting emerges as a reason of little or even no importance (for 67% of coworkers in urban centres and 71% in low-density areas). The key motivation for attending coworking spaces for both of these populations is above all linked to their desire to benefit from a pleasant and convivial work environment (for 85% of coworkers in urban centres and 82% in suburban or rural areas). The second reason is to avoid being isolated (for 71% of coworkers in urban centres and 67% in suburban and rural areas). While the dynamic of coworking spaces today does not seem to be driven by the desire of coworkers to reduce their mobility, it is nevertheless appropriate to try to measure more finely the behavioural changes that these places are likely to foster. In this way, some 22% of coworkers in urban centres declare having changed their main transport modes for commuting to work. When the car represented 53% of the modal share before joining a coworking space, afterwards it represents 46%, to the benefit of public and soft transport. What may seem like a modest result is confirmed and even accentuated for coworking spaces in low-density areas, with an evolution of 14% in the transport modes of their coworkers, and a modal share of the car representing 70% before joining the coworking space to 69% after. While mobility does not seem to be a decisive dimension today in the use of a coworking space, in urban or suburban and rural areas, a definite influence of these places can nevertheless be seen on choices in terms of transport modes, with a difference between urban coworking spaces and those located in the margin of metropolitan areas. The effects of attending a coworking space on the daily mobility of users, and the contrasts that are emerging between urban, suburban and rural areas, leads us to question the expectations of public authorities that underlie and justify their support for the dynamic of these places in low-density areas. From this point of view, the developments observed in terms of daily mobility should be seen in the context of the role of virtual communications, traditionally envisaged as the key driver in reducing mobility according to the telework model. Indeed, while 56% of respondents to our survey intend to change their mobility practices by replacing commuting with remote work more often, this figure once again varies according to the location of the coworking space. For coworkers in urban spaces,

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3 The categorisation of the types of area where coworking spaces are established (urban, peri-urban and rural environments) was created according to the zoning of urban areas, based on the urban areas 2010 report by INSEE (French National Institute for Statistics and Economic Research) updated on 1 January 2020.

this propensity to replace physical commuting with remote work is around 61%, whereas for coworkers in suburban or rural areas it stands at 44%.

Broadly speaking, these results (PERI#WORK, 2020) lead us to better understand how the daily mobility patterns of coworkers in the margin of metropolitan areas are structured, and especially to better measure the differentiated impact of these coworking spaces according to location and reasons to join it. The main idea that emerges from these results is that coworkers in low-density areas have less options in organising their daily mobility. This raises new questions: what are the systems of constraints and specific opportunities likely to influence the structuring of the daily mobility of users of these spaces in low-density areas? To what extent is daily mobility around coworking spaces in suburban and rural environments influenced by the professional and personal life plan of the individuals?

### **Mobility around coworking spaces in the margin of metropolitan areas: the issue of proximity**

The data collected through the exhaustive measurement of the movements of a panel of the two coworking users confirm the figures obtained in response to the online questionnaire and more broadly to national surveys. The average distance travelled daily by our sample (all causes and modes combined) is 33 miles and the time spent commuting is 1 hour and 9 minutes. Out of the ten days on average of GPS recordings, the modal share of the car represents 67.1% (equivalent to 93.1% of all distances travelled), while the modal share of public transport is only 1.1% (for 5.5% of distances travelled). Similarly, the daily distances travelled by our sample in the distance bands analysed are roughly equivalent to the available national data (Ministère de la Transition Ecologique and INSEE, 2019). The coworking spaces in the margin of metropolitan areas therefore do not appear as potential drivers in the overall reduction in travel (in number of trips or by travel distance), especially by car. Nevertheless, neither do they seem to generate additional trips. But beyond these overall results, which help to confirm the limited effect of suburban and rural location on reducing the number of trips, some interesting trends have been observed at local level (Table 1). While the data collected from the individuals surveyed by GPS illustrate the dominance of the car as a transport mode in rural and suburban areas, they also highlight, in coworking space located in a low-density area, an over-representation of soft modes for short trips. This difference is particularly salient for trips of less than 1.2 miles (2 km) with a modal share (in number of trips) for walking at 28% (representing 1% of the distances covered) when this is around 18% at national level in rural areas (Ministère de la Transition Ecologique and INSEE, 2019). It was also observed that according to the type of environment concerned, whether rural or suburban, this contrast is even more accentuated (Table 1). In this respect, the coworkers at Le Fauteuil à Ressort use soft modes for almost 40% of their trips (of which 35.5% by foot and 4.5% by bicycle) while coworkers at La Canopée use these for just 13.3% (11% by foot and 2.4% by bicycle). This phenomenon reflects on the modal share of the car between the users of these different types of coworking spaces, with 58.7% of trips made by car for coworkers at Le Fauteuil à Ressort versus 86.3% for coworkers at La Canopée.

		Short distances				Together (short Distances)		Average distances				Together (short and average distances)	
		Up to and including 2 km		From over 2 km up to and including 5 km				From over 5 km up to and including 10 km		Distances over 10 km			
		FàR	LaC	FàR	LaC	FàR	LaC	FàR	LaC	FàR	LaC	FàR	LaC
Soft modes		63.4%	30.4%	3.1%	10.7%	<b>54.4%</b>	<b>25.8%</b>	2.7%	5.3%	0%	1.7%	<b>39.9%</b>	<b>13.3%</b>
	Walking	56.2%	25%	3.1%	10.7%	<b>48.2%</b>	<b>21.7%</b>	2.7%	5.3%	0%	0.9%	<b>35.5%</b>	<b>11%</b>
	Cycling	7.2%	5.4%	0%	0%	<b>6.1%</b>	<b>4.2%</b>	0%	0%	0%	0.9%	<b>4.5%</b>	<b>2.4%</b>
Car		36.3%	69.6%	93.8%	89.3%	<b>44.9%</b>	<b>74.2%</b>	97.3%	94.7%	95.8%	97.4%	<b>58.7%</b>	<b>86.3%</b>
Public transport		0.3%	0%	3.1%	0%	<b>0.7%</b>	<b>0%</b>	0%	0%	4.2%	0.9%	<b>1.4%</b>	<b>0.4%</b>
	Urban transport	0.3%	0%	3.1%	0%	<b>0.7%</b>	<b>0%</b>	0%	0%	0%	0%	<b>0.5%</b>	<b>0%</b>
	Train	0.0%	0%	0%	0%	<b>0%</b>	<b>0%</b>	0%	0%	4.2%	0.9%	<b>0.9%</b>	<b>0.4%</b>
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



**Table 1: Breakdown of the modal share (in number of trips) of coworkers at Le Fauteuil à Ressort (FàR) and La Canopée (LaC)**

While the relatively small size of our sample must not be underestimated when interpreting these data, they nonetheless seem to reflect an interesting phenomenon that is worth highlighting. The mobility around these coworking spaces seems to differ according to the type of environment in which they are located. The differences previously mentioned in terms of modal share in number of trips in fact suggest increased investment in spaces in close proximity to the most isolated coworking spaces. Furthermore, the absence of any significant difference in terms of distances travelled by modes between the two sub-samples surveyed confirms this. While this phenomenon is partly due to the structure of each territory, especially its remoteness from the urban centre and access to locally available public transport (by train and bus), it should also be compared with the distance when working from home, and above all the differentiated trajectories of coworkers. Indeed, Le Fauteuil à Ressort and La Canopée do not stem from the same dynamics in the emergence and operational processes, which reflects on the professional and sociological profiles of their users, on the reasons for joining the coworking space and on their mobility patterns.

### **The key motivation for attending coworking spaces in rural areas**

The in-depth interviews with coworkers allowed us to uncover processes of territorial identification linked to the rationales of embedding differentiated social relations. In Peillac, coworkers at Le Fauteuil à Ressort have unique profiles, characteristic of a portion of users of coworking spaces in rural settings, made up of active residents recently arrived from major neighbouring agglomerations (Flipo, 2020). For a certain number of these users, joining the coworking space is part of a process of spatial, social and professional transition, through which they show a desire to take distance in relation to the metropolitan areas and their former professional activities. This transitional rationale, including on a psychological level (Liefoghe, 2018), can be found in the organisation of mobility and the discursive patterns produced by some of these individuals.

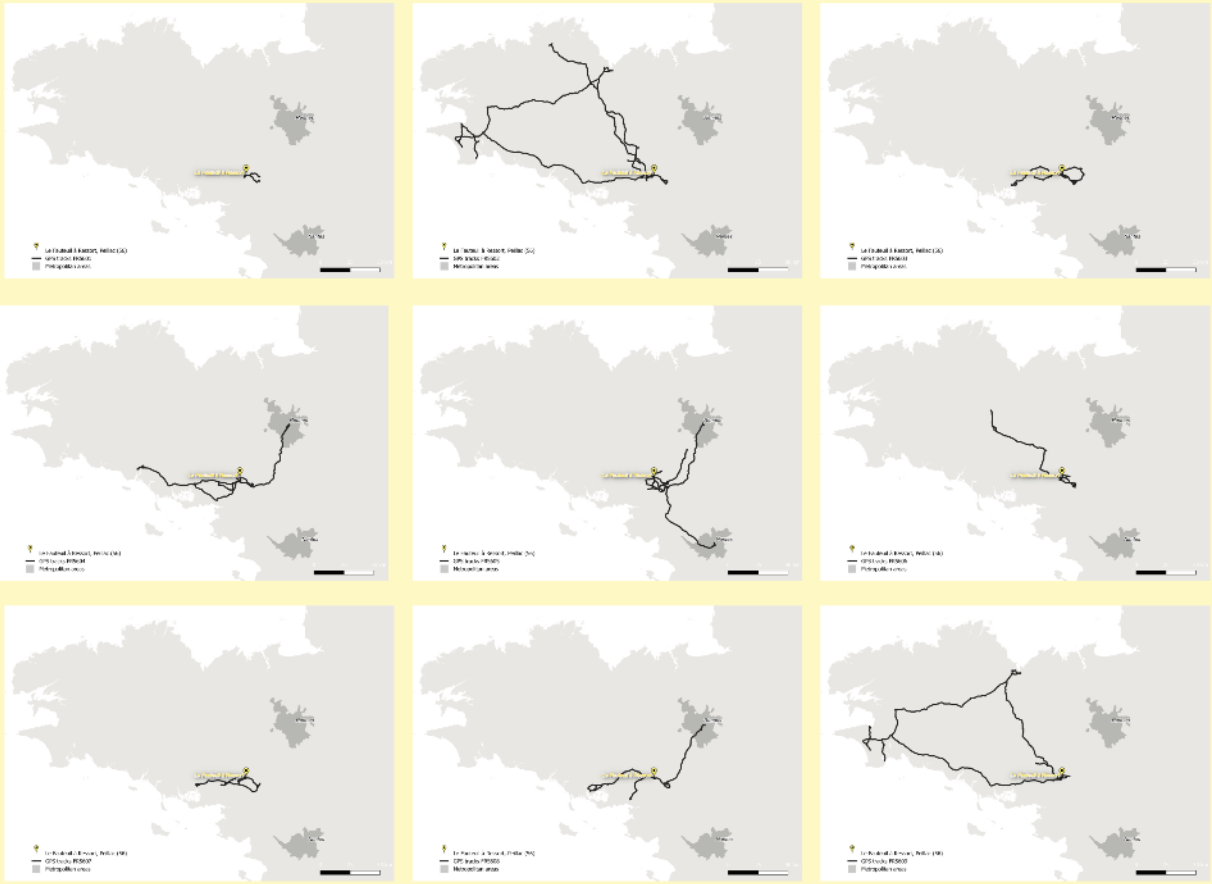
For these users, their vocational retraining plan, mirrored by the use of a coworking space, corresponds to a desire to break with the urban centre. For these individuals, the metropolitan area is synonymous with mobility considered as both time-consuming and unsustainable, from a social, economic and ecological perspective. The ecological dimension in a broad sense also including the relationship with nature, food supply, energy consumption in homes, and the rationalisation of travel, is a key motivation for joining a coworking space in a rural environment. From this viewpoint, the different coworking spaces in low-density areas seem to clearly stand out from each other, between those closest to metropolitan areas, situated in suburban areas, and those most remote, situated in rural areas.

The motivation of coworkers in rural places also corresponds to another set of values linked to lifestyle, the organisation of family life, and the quest for meaning through a professional activity. The daily trips of the individuals surveyed at Le Fauteuil à Ressort bear witness to this desire for roots in the local community, from a spatial level, with a shift to the local dimension through the coworking space and the place of residence. Local integration relies on the coworking space, through the social relations between the coworkers. They not only find a common professional interest on which they can exchange views and cooperate, but also shared values far exceeding the limited framework of professional activity. In this case, the group of individuals and the social dynamic created by the coworking space, which is comparable to what other researchers call “concrete utopias at local level” (Flipo, 2020; Rouvière, 2016) when speaking of the new generation of rural inhabitants, are important drivers for development of the local territories. These processes do not however exclude greater mobility as illustrated by the GPS recordings (Map 1).

### **Daily mobility patterns of coworkers: differentiation according to the type of coworking spaces**

Mobility and especially that geared towards urban areas, remains a key condition of professional activity for a very large majority of coworkers in low-density areas, including the most isolated ones. However, a difference in the variability of the daily mobility patterns of coworkers in rural areas has been observed, in relation to coworking spaces that are closer to metropolitan areas, which show more homogenous mobility patterns that are more systematically geared towards major metropolitan areas. By analysing the GPS tracks of coworkers (Figure 1), it was possible to identify patterns and to build a typology of the forms of territorial cohesion, according to the extent to which coworkers daily mobility was more or less polarised by metropolitan areas.

### GPS tracks of coworkers at Le Fauteuil à Ressort in Peillac (56)



### GPS tracks of coworkers at La Canopée in Janzé (35)



### **Figure 1: GPS tracks of coworkers at Le Fauteuil à Ressort in Peillac (56) and La Canopée in Janzé (35)**

In this respect, we have identified at least five daily mobility patterns of coworkers in low-density areas (Figure 2). The first pattern, which can be called “local recentred”, illustrates limited mobility that is refocused on the area close to the coworking space. This diagram is dominant in the rural coworking spaces that are farthest from metropolitan areas (Fauteuil à Ressort), whereas this is absent in users of suburban coworking spaces relatively close to major urban centres (La Canopée). The local dimension, which is characteristic of this first diagram, is spelled out in two other ideal-typical configurations, according to the extent to which the daily mobility of the users appears as more or less polarised or even multipolarised. The second pattern, “local multipolarised”, sketches a dense network of daily mobility around the coworking space but still contained within a local space, while the third pattern, “local polarised”, gears mobility towards a hub, essentially metropolitan. These two patterns are generally common to users of rural and suburban coworking spaces, and are those which we have observed most frequently. Lastly, two final patterns have been identified, which are called “global” as opposed to local, and for which mobility occurs at a spatial level going beyond the local level. The fourth pattern, “global multipolarised”, represents intense daily mobility occurring in multiple places beyond the local space, whereas the fifth pattern, “global polarised” or “metropolitan” presents intense daily mobility centred on the metropolitan area. This fifth and last pattern is observed in our sample exclusively among users of the coworking space located in the area closest to metropolitan centres (La Canopée).

### **Figure 2: Typology of the daily mobility patterns of coworkers in low density areas**

Greater variability in the mobility patterns of users of coworking spaces located in the most isolated low-density areas is discernible particularly at inter-individual level, in relation to the professional activity of the users, but also for an individual in relation to the time and periods of activity. The in-depth interviews with coworkers helped to clarify the rationales underlying this greater or lesser variability, and more generally, the different types of relationship with daily mobility on which they are based. Above all, what emerges from this analysis is a point that is common to all the coworkers surveyed. Whether users of a rural or suburban coworking space, mobility and especially by car appears for them as a necessity that is characteristic of a lifestyle associated with low-density areas (Feildel and Martouzet, 2012). Daily mobility by car, which is synonymous with flexibility and openness to the world, is rarely called into question by these users, even when an alternative transport mode is available. This is generally the case on the suburban peripheries that are closest to metropolitan areas, and especially in Janzé with a train connection (regional express train) and seven trains operating every day to the metropolitan centre of Rennes. Here again, nevertheless, there is a difference between the users surveyed in coworking spaces which are the closest to metropolitan areas, and those in the most remote spaces. In this respect, for the former, the use of a private car, especially for trips polarised by the metropolitan area, generally appears to be taken for granted, and any possible reconsideration is only envisaged in light of the criteria of efficacy and rapidity. For coworkers situated in the more isolated areas, daily mobility in general and by car especially, although considered inevitable, is more systematically called into question by putting into context all the dimensions of living (accommodation, food, consumption, leisure, etc.) and more particularly of work.

On these two points, rationalisation and compensation can be observed, which bring individuals to envisage and implement new balances between necessary mobility and willful connections with the local community. Rationales of compensation take place in terms of habitat, with the growing of a vegetable garden for example, but also the investment in renovating an old dwelling or using a green and local electricity provider. In this first category, the knowledge acquired by other members

of a coworking space appears as a non-negligible resource in order to share opportunities and know-how. Concerning rationalisation, these may emerge as part of the professional activity, by drawing from the social and professional relations forged within the coworking space, which then facilitates finding and implementing shared mobility solutions, particularly in terms of carpooling. Certain professional projects in which coworkers are led to collaborate, especially due to the proximity of their fields of activity, quite naturally give rise to shared trips. However, other forms of daily mobility not necessarily linked to a professional activity also benefit from the networking of users, thanks to the coworking space, and to their commitment to common values. While this rationalisation remains difficult to quantify, it is visible on the GPS recordings as well as in coworkers' discourse, especially from the most isolated coworking spaces. In these spaces, we can see quite clearly the "strength of weak ties" (Granovetter, 1973), i.e. the effect of the embeddedness of social relations, and the role of coworking spaces in creating a "sense of community" (Garrett, Spreitzer, and Bacevice, 2017; Spinuzzi et al., 2019).

## **Conclusion**

While reducing mobility does not clearly appear to coworkers as a key motivation for joining a coworking space, the fact remains that these spaces have an impact on the structure of their daily mobility. However, this influence seems differentiated according to the type of locality in which they are established or from which they emerge. Furthermore, the conditions for the contribution of these coworking spaces to the daily mobility patterns are not just linked to the level of spatial remoteness from metropolitan areas, facilities or the availability of transport, but more fundamentally on the ability of these places to create real nodes in a non-metropolitan mobility system that is refocused on the local dimension.

Unlike other surveys based mainly on declarative data, we were able to objectively measure the movements of users of coworking spaces located in low-density areas. The results obtained from a relatively small sample of coworkers show that these spaces do not lead to an overall reduction in mobility with regard to national surveys, neither do they increase it. These initial results, which need to be confirmed by additional surveys, nevertheless go against simplifying representations and discourse, and encourage scholars and public authorities to take a closer look to better understand the conditions to the daily mobility patterns. In this respect, through the phenomenon of the over-representation of soft modes in trips around coworking spaces the farthest from major urban centres, we were able to identify a deeper dynamic. This dynamic, based on professional activity and the embeddedness of social relations, draws from the coworking and enhances the nearby space. This dynamic depends not only on the locality in which the coworking space is established, but seems to be linked more broadly to the sociological and professional profiles of the coworkers, to the reasons for attending the coworking space, and to the intensity of social relations that this space is likely to create. Daily mobility seems to depend on the level of adherence to a territorial development model centred on local links, which is catalysed by the coworking space. According to the type of locality and of coworking space, the implementation of more virtuous mobility practices seems to depend less on infrastructure policies than on identifying, encouraging and supporting local initiatives.

What remain only lines of inquiry at this stage, however pleads for the need to extend the understanding how coworking spaces contribute to various transitions, social, professional and ecological, in a systemic perspective. Through the emerging phenomena of rationalisation and compensation, it is more broadly the contribution of coworking spaces to more sustainable ways of living in low-density areas, including all the dimensions of living and not just mobility practices, that should be considered. In addition, the contrasts identified between suburban and rural areas argue for a differentiated approach of public support policies to coworking spaces.

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