Display or displace?
On the history of urban pedestrian logistics (Toulouse, XXth-XXIst centuries). [1]

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Since transportation devices and systems are at the heart of modernity, they received of course considerable attention. There are countless books, articles and reports on the history of boats, trains, cars, trucks, airplanes and on the related infrastructures: harbors, train stations, roads, airports and cities. These references are so numerous that identifying and quoting a small selection of them would be too arbitrary and risky. But the focus on the technologized means of transportation may well have neglected some of its more traditional and mundane aspects which have not disappeared for all that. In particular, while still relying on an increasing array of technologies of transportation, people never stopped walking and using their body to carry various things. It is even possible that instead of being replaced by the new sorts of vehicles, human logistics rather rose as fast as motorized transportation. It is this issue of "pedestrian logistics" that we would like to address.

At the core of this issue lies a striking paradox: on the one hand, the practice of displacing goods on foot is universal—it can be seen everywhere in the public space; it is pervasive in all the collections of films and pictures showing commercial and urban scenes. But on the other hand, the same practice is not displayed: this issue of consumer logistics is neglected not only in the literature—despite a few works conducted in marketing (Granzin & Bahn, 1988) or economic sociology (Grandclément, 2006; Cochoy, 2009)—but also in the world itself: people do their shopping without really caring about how and with what kind of device they do it, without realizing that they work themselves as transportation tools. We would like to reflect on this paradox: our intent is thus to display the under-displayed consumer logistics, so to say. In so doing, we would like to show that the joint use of bodies and containers (what displaces) played a great role in the birth and transformation of our contemporary consumer society (what is displayed).

We will address this topic in exploring how the way of carrying goods in the city center evolved over time, what kind of containers were involved, who carried them and how; how the external infrastructure and devices such as city organization and motorized transportation systems impacted pedestrian logistics; what kind of transfer occurred or not between pedestrian and motorized transportation, and so on. We will conduct our study from the case of Toulouse, a large city located in the South-West of France, from the late XIXth century to present. The chosen methodology combines archaeology, ethnography and statistics. We have selected three key sites of the city center of this town—a main street, a

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central square and a major crossroad—which have been repetitively photographed at different times in history. This selection is aimed at drawing comparisons over four distinctive periods: the beginning of the XXth century, the interwar period, the 1950s-1960s, and present. Our analysis rests on a systematic coding of our photographs. More precisely, for each period and site, we both quantify what we observe (number and gender of people, number and type of bags, number of cars, bikes, etc.), and we also conduct a qualitative ethnographic analysis of what may be observed and how it evolved.

This method illuminates dramatic but also discrete changes, such as the surprising proliferation of pedestrians' bags while motorized types of transportation nevertheless rose themselves. It shows that bags also shifted from anonymous opaque containers to heavily branded and advertised vehicles, etc. All in all, we see how consumer logistics evolved along a dramatic reconfiguration of the display of urban and commercial infrastructures.[2]

I. Conducting an ethnographic/statistical archaeology of a photographic archive

Our project is to account for observable changes in the way people carry things in the city, the devices they use, who is performing the transport, in what proportion, how the frames and equipment of the city and the presence of other means of transportation affect this type of behavior, etc. But such a project raises a serious challenge: is it really possible to account for past mundane behavior, for gestures that have disappeared for long, for the flow of pedestrian and their containers? Historians are used to rely on written archives and collections. But such data face two limitations: first, they look at the problem indirectly, from far away, both in terms of distance (for instance, city archives describe policies and infrastructures rather than people) and time: in coming after the action almost by definition, written documents can only reflect about social action in a cold and remote way. This is true for administrative and notary archives of course, but it is also true for newspapers and even personal testimonies. Second, in most cases and over the long period, various written documents can rarely cover the flow of practices in a continuous and systematic way. Apart from the field of accounting and economic calculation, the chances are little to find systematic statistical series focusing on the flow of ordinary life and gestures.

In order to overcome this problem, we propose to rest on different types of archives and methods. Instead of focusing (only) on texts, accounts, reports, official documents like in classic historical work, we suggest relying (also) on photographs—i.e. the only type of document (with films and audio recording), that has the power to record life as it unfolds, with all its flesh, spontaneity, materiality and humanity. More precisely, our idea was to find a photographical archive of the city life of Toulouse that we could study not as historians, but rather as archaeologists. Let us present this orientation further. As we argued elsewhere (Cochoy, 2009), developing an "archaeology of present times" may be of prominent importance for a better understanding of recent human history. Paradoxically, the greatest weakness of archeology—being deprived of any access to written and meaningful documents—has always been its best chance: since they cannot access the testimonies and the "reasons" of the actors themselves, archeologists are forced to look for explanations elsewhere, in the mute and indirect traces of life concealed in material artifacts. Far from

being a stopgap solution, this method helps to account for several aspects that are often lost in the other types of archives, such as the traces of simple gestures, the contribution of material artifacts, and so on. The paradox is that archaeology is even more fruitful today than yesterday: since we now have access to both documentary and archaeological data, we can conduct a symmetrical historiography; along the basic assumptions of actor network-theory (Callon, 1989; Latour, 2005): we can account for the contribution of both human and non-human entities to historical processes and transformations.

In our case, we needed an archive that could serve as the basis for a systematic analysis of pedestrian logistics over time. In order to set up such an archive, we merged four different databases: we collected the pictures of two major photographers: Eugene Trutat (1840-1910), who photographed Toulouse in the late XIXth century and in the beginning of the XXth, and Jean Dieuzaide (1921-2003), who photographed various aspects of the same city after World War II. In order to cover the interwar period, we relied on the Labouche collection, a huge database of postcards. Finally, we documented the present state of Toulouse in taking our own photographs of the major sites we had previously selected from the other archives.
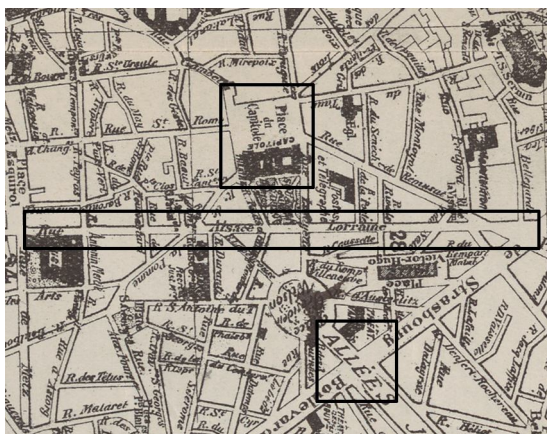

Fig. 1. Rue Alsace-Lorraine, Place du Capitole and Carrefour Lafayette (1921)[3]

Our analysis rests on a selection of three major sites: the avenue Alsace-Lorraine, a large Haussmanian street which crosses the center of Toulouse from West to East, the Place du Capitole, which is the central square of Toulouse and the site of its City Hall, and the Carrefour Lafayette, which is both a square and a crossroad, a place for leisure (cafés, spectacles) and walk in the city. The three sites, while being very different the ones from the others in terms of architecture, infrastructure and social uses, are quite close in terms of distance (see Fig. 5) and key components of the city center.[4] Our selection rests upon our main research interest (i.e. studying the interplay between pedestrian logistics and downtown infrastructures), and more contingent research constraints. On the one hand, our intent was to focus on varied central places, but places that crossed varied periods so that they may be studied in a longitudinal way. But on the other hand, we also needed to select sites that had been repetitively and sufficiently photographed, so that we may conduct systematic and comparative analysis. In this respect, we have been quite lucky, since these external constraints nevertheless led us to a selection that matched our previous research requirements almost perfectly.

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3. © Conseil général de la Haute-Garonne, Archives départementales, 20 FI 331.

4. We will reflect further on the identities and differences of these sites later in this article.

Fig. 2. Rue Alsace-Lorraine : before WW1, WW1-WW2, 1950-1970, 2011[5]

Nevertheless, the use of second-hand photographs is highly questionable. Indeed, photography is inherently attached, by definition, to a highly singular, personal and "focused" viewpoint, both literally and figuratively. As a consequence, risks are high that the personal intention of the photographer biases the researcher's will to account for urban behavior at large, without any preference for such or such point of view, person or attitude.[6] But in our case, if the photographer's focus existed, it rather adopted an orientation which indirectly served our research goals. Contrarily to sociologists indeed, who are mostly preoccupied with human actors only, our pictures, and especially the postcards, are first and foremost interested with stones, perspectives and architecture: they privilege large frames and wide angles, in order to show the magnificence of the city, so that in these pictures human beings appear almost as a background effect, and even as an undesired "noise." This was our best chance, from a double point of view. First, since we precisely focus on these blind spots the photographer doesn't really care about, we may observe subjects which have been captured in a neutral way, without any particular intention.[7] Second and reversely, since our focus is on the interaction between the people and the city at large, the photographers' preference for panoramic views of the city, often from a bird-eye's perspective, particularly joined our purpose to see as many people as possible from the most appropriate point of view, i.e. a point of view from where people do not hide too much each other.[8]

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5. Top left: © Conseil général de la Haute-Garonne, Archives départementales, Labouche fund,26 FI 31555 130; Top right: © Conseil général de la Haute-Garonne, Archives départementales, Labouche fund,26 FI 31555 817; bottom left: © Conseil général de la Haute-Garonne, Archives départementales, Labouche fund,26 FI 31555 130;26 FI 31555 944; bottom right: © Roland Canu.

6. For an interesting account about the potential of "documentary" photography but also the problems it raises, see Newhall, 1993.

7. We decided to avoid the rare pictures where some characters seemed to have been the purpose of the picture (for instance when they formed an horizontal line oriented toward the lens), or where some pedestrians seemed to stop and look intentionally to the camera.

8. That's why we greatly preferred the postcards of the Labouche Cie than the other photographers' pictures: of course, the latter are incredibly better from an aesthetic point of view, but it is precisely

In order to account for these pictures we strongly advocate for the conjoint use of two methods: ethnographic and statistical archaeology. When dealing with mundane behavior, the analyst has the choice between two different routes. The first is that of a detailed and qualitative observation. This approach is rarely fruitful when applied to contemporary fields, since the ordinary and obvious character of what is observed makes it very hard to decide what is important and meaningful. In order to overcome this problem, we suggested elsewhere the use of a second route: that of statistical ethnography (or statistical archaeology in the present case). Indeed, collecting and aggregating dispersed and intrinsically insignificant observations is a powerful way to trace hidden facts and to obtain emerging effects and patterns (Cochoy, 2008; Calvignac & Cochoy, 2011). But as soon as historical archives are concerned, these two routes prove to have an equal interest and even to illuminate each other. On the one hand, the time-lag and the evolutions inherent to historical investigations ease the identification of the details that might be stressed and interpreted. But on the other hand, the statistical approach does not lose its relevancy for all that: rather, it helps measuring the relative importance of the observed facts for a given period, and most importantly tracing their evolution. Moreover, both methods support each other. Statistical observation requires the design of observation grids in order to record what can be observed, like special attitudes, particular objects, etc. But documenting these grids leads the researcher to look at his material in a systematic and very precise way: it forces him to pay attention to each person, and to do it with an equal scrutiny. This results not only in accurately filling the grid, but also in making additional "side," qualitative and meaningful observations. For instance, when coding a large picture of the rue Alsace-Lorraine, we noticed two men waving their hats: this observation wonderfully illustrates both the capacity of photography to involuntarily capture the essence of life and, in this particular case, the pervasiveness of knowing each other in earlier urban civility. It is precisely along this double procedure that we fulfilled our project.

Fig. 3. From statistics to ethnography[9]

Our main effort was of course to design an observation grid[10] liable to account for pedestrian logistics and its evolution. More exactly, and given our double focus on pedestrians and the

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because of this very reason we had to discard several of them! In particular, we had paradoxically to remove the pictures that were too much focused on people. Their close focus, from the street level, was another of their main drawbacks.

9. © Conseil général de la Haute-Garonne, Archives départementales, Labouche fund,26 FI 31555 TP 003040 0001.

city itself, we designed two different grids aimed at coding the same series of pictures in two different ways: one grid was designed to measure the observable traffic of each site; the other was oriented at describing the pedestrians.

After an extensive "reading" of our collection of photographs, we were in a position to identify the variables that could be systematically observed for each grid. In the first one, the coding unit was the photographs themselves. For each one of them, we noted the name of the site and then focused on the type (cars, bicycles, public transportation…), position (moving or parked) and number of vehicles, as well as on the number of persons that could be observed on each photograph of a given site.[11] In that case, we counted the "visible heads" in restricting our count to pedestrians only: people on trams, cars or bicycles were excluded since we considered them as part of the vehicles. Our purpose was to rely on this information to later document the evolution of the different means of transportation and their respective proportions… pedestrians included!

The second grid was aimed at coding pedestrians, or more exactly what we call a "cluster," that is: an assemblage made of a person but also the containers and/or the objects she carries (of course there exist clusters made of just a person when nothing is carried). Contrarily to the previous grid, the coding unit here is not the photograph, but the person. We do not code everyone in the picture, but just the persons who show at least a visible hand.[12] This criteria helps describing what people carry or not, while coping with the necessarily hidden face of bodies in still bi-dimensional representations. Of course, this leads to underestimate the real loads, but since this bias remains the same across time and space, it does not affect the robustness of the observed differences and evolutions. We also excluded some particular cases from our count like professionals (policemen, people close to the shops with aprons, and so on), the people who were sitting or walking with a bicycle. Each person meeting our criteria is identified with the number of the photograph she belongs to and a distinct number added into it with Photoshop,[13] and then described in the grid. We noted his or her gender and age (adult or child, according to height and aspect), and her pace: as surprising as it may seem, it is very easy to estimate the pace (immobile, slow, fast, or running[14]) of

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10. What we call an observiaire: i.e. a kind of questionnaire filled through observation rather than interviews (Cochoy, 2008).

11. In this case, we traced a "horizon line" in the background of the scene to separate the front zone where our items were all observable, and the rear zone, where some of them (often the pedestrians) were often blurred and thus impossible to record. We did not code anything beyond this limit in order not to bias the proportions between the different elements.

12. By visible hand, we mean a hand whose occupation can be clearly described; it does not mean that the hand is necessarily visible (see a hand which is in a pocket, a hand which cannot be seen but obviously holds the sunshade over the person's head or a hand which is hidden behind the person's body but which necessarily carries the suitcase that juts out from it).

13 A distinct advantage of the numbering of people is to help going back from the statistical data to the original cases, and so to couple statistical and qualitative analysis.

14. When people were waiting without moving to cross the street or queuing to take the tram or bus we did not code them as "immobile" but rather documented the category of pace as "irrelevant" (in order to avoid the bias of "forced" immobility); we also described the pace as "unknown" when it was impossible to describe it (especially for women whose feet were hidden by long robes which hampered the estimation of their pace. For this reason, the category of pace, especially for the earlier periods, reflects mostly male speed and cannot be used for gendered cross-tabulations.

photographed person in referring to both the angle between her legs and the inclination of her body! Then, we described the other components of the cluster: its accessories (for instance, the presence of a hat or not), what it carries (the type of container and/or the type of objects) and how (in the hand, with or without handles, with a strap straight or slung across, on the arm or under arm, etc.).

The selected sites and the persons who circulate within their frame have been coded along their names (rue Alsace-Lorraine, Place du Capitole and Carrefour Lafayette) and the four periods of reference: before World War I, interwar period, the 50s-60s, and 2011. Despite appearances, these periods do not only refer to large historical events like the wars but to local noticeable changes, like the electrification of the tram between the war or the abandonment of the latter for buses after World War II. In order to avoid any overrepresentation of one of the three sites or one of the four periods,[15] we decided to build a stratified sample with an equal representation of each one of them.[16] For each period and site, 50 persons have been coded. Since we have three sites and four periods, the general sample describes 600 clusters. We would have liked to code more people for a better statistical significance of course, but for the Place du Capitole in the interwar period we had only enough photographs to reach the 50 persons quota, so that we had to stop with this latter figure. This compromise is coherent with the archaeological approach, which asks to be rigorous but also to make sense of the available data.

Another problem with the statistical approach when applied to historical material is that of coding. There is a strong contradiction between statistics, which implicitly suppose the existence of invariant entities that might be counted over time, and the flow of history, which on the contrary often means change and innovation. When designing uniform categories to describe facts across history, the researcher faces two risks: the first is to forget some very particular elements which quickly disappear; the second is, on the contrary, to favor anachronism in depicting the past through categories borrowed from the present. In order to cope with this dilemma we adopted two solutions. Sometimes, we took the risk of anachronism, precisely to show that some devices emerged only recently, like backpacks. Sometimes, we chose on the contrary to rely on broader categories which help compromise between historical changes and permanent features: for instance we used the "car" category to go beyond the difference between carriages and automobiles. In that case, the idea was to account for "powered" vehicles, whether they are moved by horses or engines. Our criterion for deciding which of these opposite solutions should be adopted was our focus on pedestrian logistics: on the one hand, we do not confuse a backpack with a larger container category since here innovation matters; on the other hand, cars belong to a broader set of alternatives to human logistics we do not precisely focus on.

In order to document the more qualitative, peripheral and/or ephemeral aspects which statistics cannot always capture or account for, we relied on the qualitative reading of our photographs, but also on secondary sources. More precisely, we gathered a series of books

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15. We are aware of course that people's density may vary in different parts of a city, but in our case it seems that it was not the case: in our three different sites the affluence has always been quite comparable (the three sites are located in the city center and they are rather close the ones from the others, hence homogenizing the flow of pedestrian circulation).

16. This issue of representativeness did not matter for the observations focused on the traffic of people and vehicles for each site, since in that case we are only focused on ratios (types of vehicles per head). These ratios are calculated for each period and site. As a consequence, the number of observations behind these ratios may vary.

(Taillefer, 2002; Bordes, 2005; Rey-Delqué, 2006) and articles (Bordes, 2010; Ripoll, 2010; Delvit, 2010; Pailler, 2010) which help getting a better knowledge about our photographs, our methods, and also the city. We collected complementary archives, such as city maps and official archives from the city of Toulouse.[17] However, with this kind of data, our intention was in no way to take the city as a mere "décor" or "frame" that necessarily would "receive" or "shape" the observed phenomena (respectively). We refuse the easy road of relying on "*ad hoc*" sources and commentaries to complement our more general observations, for instance in saying that they "illustrate" or "confirm" them. What we propose is a twofold and symmetrical approach. Our focus is on the flow and practice of pedestrian logistic. This flow occurs at the crossroad of human and technical configuration on the one hand, and city frames, services and alternative means of transportation on the other hand. Instead of using one of these elements to account for the other, our purpose is rather to show that the flow of pedestrian logistics inherently stems from and produces the constant reconfiguration of people and the city. On the one hand, a flow always runs within frames or pipes, like roads or sidewalks in our case. But on the other hand the flow of pedestrian logistics cannot be reduced to these framing effects, since instead of just flowing, it constantly reshapes itself, innovates, brings new elements into the general move, and thus contributes to reconfigure the very frames or pipes it is supposed to follow. Our concern is thus not to account for a flow and to explain it by the context which is supposed to shape it, but on the contrary to explore the subtle dynamic of channeling and leaking which occur from this flow.

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17. With a special mention for a report written by the Toulouse school of Architecture and dedicated to the construction of the squares Wilson and Jean-Jaures from 1178 to 1987.

II. Displaying what people displace and how: what we dug out from our statistical/photographical excavation

Fig. 4. En haut : le carrefour et les allées Lafayette 1903-2011
En bas : la place du Capitole. 1911-2011[18]

On the left hand side, the city of Toulouse in the early 19th century; on the right hand side, the same city in the 20th: these images of two famous toulousian sites (Lafayette and Capitole) give an overview of a century of urban life transformations. For instance, it is easy to see how the delimitation and demarcation of sidewalks and roads were strengthened to impose differentiated circulatory principles; as time passed, any ambiguity about the reserved zones for motor vehicles and pedestrians has been removed. The process ended up with a channeling of flows which is as progressive as spectacular: while in the early 20th century almost as many pedestrians strolled on the street (44%) than on the sidewalks (56%), the compliance with the rules is now almost absolute (100% of the observed persons remain on the sidewalk).[19]

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18. Top left: © Conseil général de la Haute-Garonne, Archives départementales, Labouche fund,26 FI 31555 71 1; Top right: © Roland Canu; bottom left: © Conseil général de la Haute-Garonne, Archives départementales, Labouche fund, 0002626 FI 31555 335; bottom right: © Roland Canu.

19. Albeit the fact that two areas among three became pedestrian or semi-pedestrian.
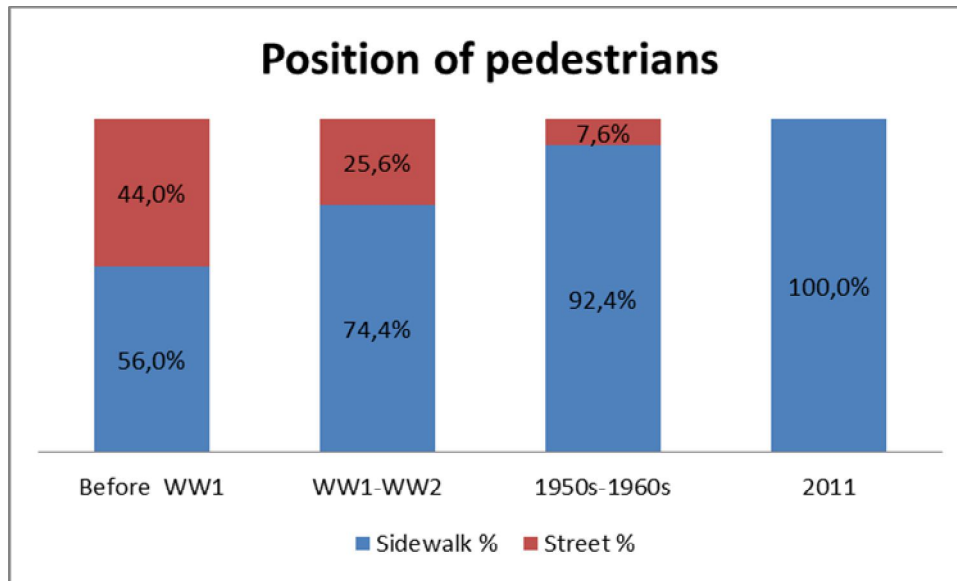
Fig. 5. Position of pedestrians[20]

Therefore, by choosing to study urban flow and logistics, we encounter a first problem: where and what should we look at in these photos? In order to understand the pace of the city, how people and things moved and how these movements developed, we cannot sacrifice any of these areas but we must, on the contrary, account for their cohabitation and articulation. We intuitively oriented our first focus on the streets of downtown since they trace the movement of dedicated lanes for vehicular units (Goffman, 1973) whose primary intention is precisely to travel from point A to point B. Of course, pedestrians do not walk on the street, except occasionally. But before being themselves vehicular units moving on the sidewalks with their own envelope or shell (*ibid.*), they had to use these pipes and respect the flows which fill them. Thus, if we want to understand pedestrians' logistics in the urban environment, we have to examine closely the traffic flow and the larger frames that shape it.

The types of vehicles are numerous and took various forms along history (public or private, motorized or not, with two or four wheels). Having identified four generic categories of vehicles (public transportation, cars, bikes, bikes/scooters), we measured the importance of each of them since the beginning of the 20th century by comparing—for each period and each site—the number of each type of vehicle to the number of pedestrians present in the pictures.

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20. A pedestrian is said "walking on the street" only if she walks parallel to the sidewalk. We thus leave aside people who cross the street in order to reflect clearly the "spillover" of the space reserved for pedestrians on the rest of the road which is a priori dedicated to other vehicular units.

- Vehicles/heads -
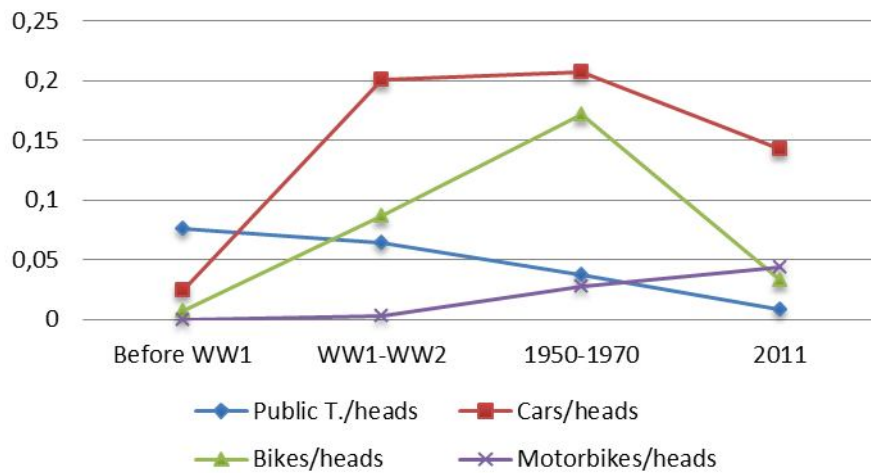
Graphique 1

Before World War I, the most visible vehicles in the city are the public transportation ones. Despite being late in comparison with other major French cities that were already furnished from the beginning of the 19th century (Taillefer, 2002), Toulouse was equipped in 1863 with three lines of horse-drawn streetcars linking different areas of the city. The introduction of two additional innovations in the turn of the century (rails in 1887 and electric trams in 1906) established the importance of public transportation in downtown traffic. Among the sites selected for this study, it is no surprise that throughout the first half of the century the Capitole was the main area for those vehicles: two of the three tram lines stopped there and the square also welcomed kiosks with ticket inspectors' office and waiting rooms for the passengers. The apparent decline of public transportation which occurred later, especially after World War II (0.064 vehicle/person between the two wars vs. only 0.037 vehicle/person between 1950 and 1970), can be referred to two distinct periods: first, it reflected a loss of interest from the public (Bordes, 2005) probably associated with the irresistible rise of the automobile (see the removal of trams in 1957). More recently the construction of a first (1993) and second (2007) subway line plays differently. The perceived continuous regression of public transportation (0.0088 vehicle/person in 2011) is largely misleading since it has just been transferred under the ground or at the periphery of the now pedestrianized city center.

This diagram then shows how, from the inter-war period, cars invaded city roads. This mode of transportation became so successful and popular that it became necessary to develop traffic regulation which proceeds from two conflicting urban policies: it was first needed to enable the development of these flows in widening roads, in deploying a signage that could punctuate the coordination of opposing paths, or in building a number of parking lots (outdoor or underground: the Place du Capitole, after hosting vehicles on its surface, made them later migrate underneath, over five floors in its basement).Then, as the care for drivers declined in favor of new ideas in favor of sustainable cities, the protection of the urban heritage, and the circulation and wellbeing of pedestrians, cars were gradually squeezed out of downtown. Car access to this part of the city is now limited with a particular concern aimed at avoiding any transit traffic through the hyper-center. It resulted in a dynamic of pedestrianization that spread in the urban space from two points—Capitole and Alsace—along two axes (the Taur-Saint-Rome streets, and the Filatiers-Alsace Lorraine streets). The

spatial logic of pedestrian areas at work in Toulouse helps to explain the peculiar results observed on the site of the Carrefour Lafayette.

- Cars/heads -
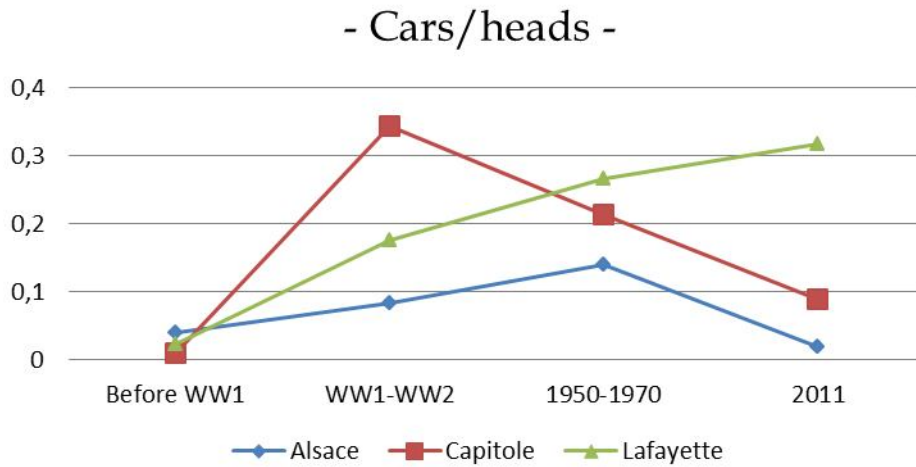
Graphique 2

The Lafayette crossroad contrasts sharply with the general trend, since here the number of cars continues to rise. The Lafayette Alleys, which were for long considered by residents as a place for walks and celebrations, have then been sacrificed in order to favor the relationship between the city and its periphery. The disappearance of the central mall in favor of a four-lane road since the 1960s (see photo 1) shows the importance of this route to interface Toulouse and its surroundings. As soon as their initial construction in the 18th century, the lanes were thought of as the crossings of the city's historic walls and as an opening towards the countryside. Now the movement seems balanced and even reversed, since the Alleys are primarily "penetrating axis" in the city, thus allowing a direct access from the suburbs to the heart of Toulouse.

When reading Figure 1, the main surprise finally stems from the changing presence of bicycles in the urban traffic. These vehicles spread during the first part of the 20th century (before WW1, WW1-WW2) and even reached a level almost comparable to that of automobiles (0.17 cycle/person vs. 0.2 car/person). This earlier period strongly contrasts with the brutal and intriguing decline of the same vehicles in the recent period. On the one hand, the rearrangement of the infrastructure of the city favors them—with the introduction of cycle routes (228 km) and the implementation of bike rental stations (253); the city center accessibility to cars has declined sharply (see above); the sustainability ideology and discourse has spread over. But yet, on the other hand, and despite all these evolutions which should have favored their development, bicycles are still deserting the hyper-center in the early 21th century: it even seems that their presence has declined to almost the level they had when they were first introduced in the late nineteenth century, far from the peak they met after World War II, at a time which was yet marked by the triumph and dominance of the automobile. Of course, the reduction of the number of bicycles in the city center is balanced by the increased number of motorized two-wheelers: these latter vehicles are now more numerous than bikes (0.0443 motorbikes/pedestrian vs. 0.0335 bikes/pedestrian). Indeed, as the city of Toulouse and its suburbs expanded, it became faster and less cumbersome for suburban citizens to choose motorized two wheels vehicles. But other means of locomotion are taking over in the city center, especially the subway. In other words, it is probably the new dimensions of the city that probably explain the withdrawal of bikes from the downtown area: while residents of the center and the immediate surroundings would prefer

the subway, those who are located beyond rather opt for motor vehicles which facilitate commuting, especially when loaded.

Different vehicles share the same space in the city center, with a variety of areas reserved for pedestrians, including of course the sidewalks. Sidewalks differ with roads in terms of the intentions which animate the underlying observable movements: individuals do not only undertake a journey and focus on their move, but they also potentially perform other purposes, whether relational, recreational or commercial. Sidewalks also differ along the nature of the vehicular units that circulate them, who are mainly pedestrians, with their own "shell" (Goffman, 1973), pace and logistics. For a century now, the density of pedestrians which is visible in the city center has grown dramatically: the average of pedestrians per photo, depending on the period, goes from 40% (Before WW1) to 100% (2011). This intensification of human flows can be related to two changes. The first change is a mechanic and demographic one: Toulouse is a south-western city which witnesses a very strong growth of its population: it went from nearly 150 000 inhabitants in 1900 to nearly 450 000 nowadays, and above all, a late growth of its suburbs from the 1970s.[21] The second change is urban and ecological: it may be read in the delineation of pedestrian areas in the city center and in the construction of 7 900 meters of pedestrian streets.

To this first quantitative statement, we may add a qualitative one: indeed, there are more pedestrians on the downtown streets in 2011 than in 1900, but these pedestrians are also and above all very different. These differences result from several historical shifts which we would now account for in focusing on three characteristics of individuals: their gender, their pace and, of course, their logistics.

- Male/female -
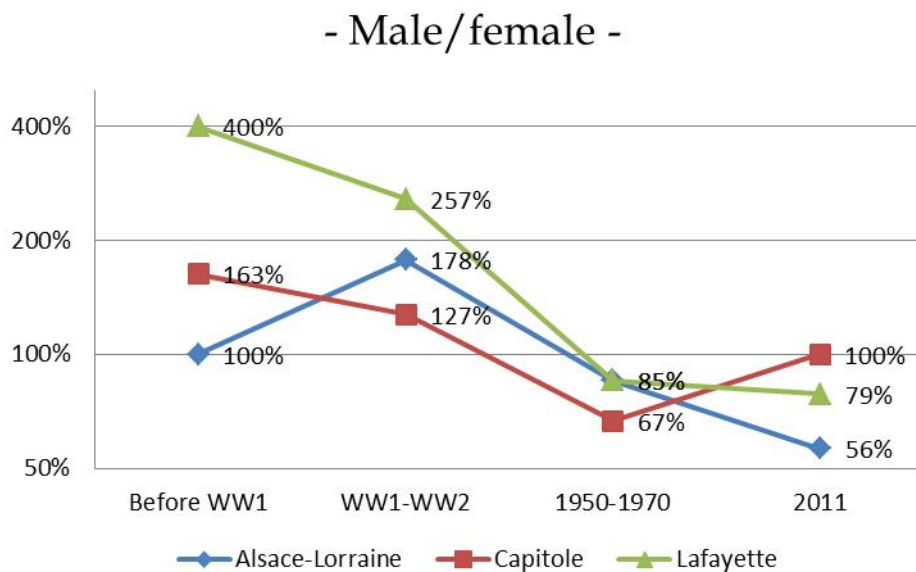
Graphique 3

When looking at how the sex ratio evolved on each site (on a logarithmic scale), one notices a clear division between the periods of before and after World War II. In the first half of the 20th century, and despite the specific changes which affected the three sites we studied, men were dominating the urban space by a very large majority. For instance, in the first period (Before World War I), the Lafayette site was visited by a male population four times larger

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21. The Toulouse metropolitan area has, in 2008, 863 756 inhabitants (source: INSEE).

than its female counterpart (400%)! This overrepresentation of men may be linked to the leisure and festive nature of the activities which were typical of this place.[22] The Capitole confirms this trend to a lesser extent, probably because of the presence (albeit intermittent) of a market that was attended by housewives and "sold all the vegetable crops from the outskirts of Toulouse: melons, peas, asparagus, eggplant, onions, carrots [...]" (Loho-Hoarau, 2006). After World War II, the gender distribution of the population was reversed along a more general movement of feminization. By the 1950s, the number of women in the urban space was greater than the number of men, regardless of the site. In order to explain the male/female parity on the Capitole site in 2011 (100%) we can refer to the general movement of gender equalization, and more locally we can highlight the romantic connotations of a tourist site which is now very popular with families and couples. Here, everyone is equally invited to experience one of the main symbols of the city and/or to have a drink on one of its many nice terraces.
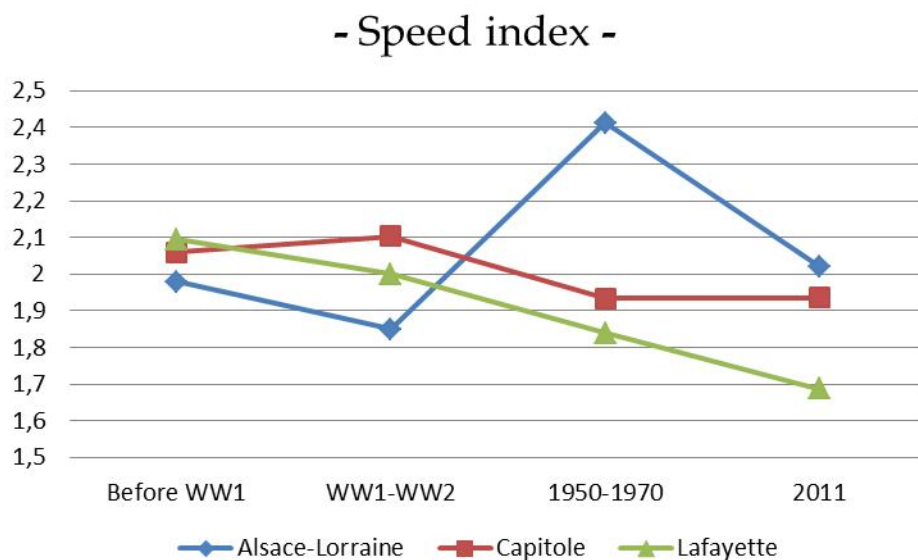
Graphique 4

Distinguishing pedestrians from the early [20th] century and the early 21th century also invites us to question the pace they adopt to get around the city. In order characterize this rate we have introduced a global speed index. This speed index, based on the pace of each pedestrian, helps calculating an average speed attached to each site.[23]

The chart above shows how this pace is both conditioned by the time factor but also by the space criterion. Indeed, the three sites seem to have their own specific pace. The Alsace-

22. "At the end of the (19th) century was built the theater of varieties which hosts opera, comic opera, operettas, comedies and dramas. With the proximity of the circus located on the boulevards, great cafés like the great coffee of Americans, Sion, the Alleys were at the end of the century the "à la mode" rendezvous of Toulouse. This place experienced life courses and was inspired by Catalonia *Ramblas*, as the very heart of the nightlife and festivals of the city" (Rapport, École d'architecture de Toulouse, *L'édification de la place Wilson et des Allées Jean-Jaurès de 1178 à 1987*, p. 145).

23. This index is calculated using the following formula: (immobile pedestrians * 1 + slow pedestrians * 2 + fast pedestrians * 3 + running pedestrians * 4) / divided by the total number of observed pedestrians. This index oscillates between two theoretical limits: one—no one moves—and 4—everyone runs.

Lorraine site, which yet seems to be the slowest place during the first two periods, becomes the space where pedestrians walk the fastest after the World War II. Two explanations can be provided: the first one is morphological, and refers to the physical boundary of the street that frames the moves of pedestrians. The walls impose a tunnel-like vision that guides and channels the flow of people, orders a direction and simplifies flows. The second hypothesis suggests considering the construction of streets and walks in the city center and the place of the various sites in this ecology of moves. If the Capitole-Lafayette crossroad provides points of rendezvous where individuals can meet (or leave) each other, the rue Alsace-Lorraine is rather a point of passage, an axis which is inserted between two signs.[24] The slower rate observed in 2011 on the same site may be less paradoxical than it seems once attached to the transient effect of road works. The latter currently force pedestrians to avoid obstacles and deal with a higher population density on the rue Alsace-Lorraine, and above all, more permanently, to cope with the double "stickiness" of the premises: on the one hand, the pedestrian area and the proliferation of shops attract the attention of shoppers. As a consequence, it tends as well to multiply their number as to curb the race of the others. On the other hand, the combination of this slowing effect of windows and attendance tends to spread the viscosity of the slowed down people on the rest of the crowd.

Beyond the specifics of a particular site, an overall and counter-intuitive trend seems to emerge: the pace of downtown pedestrians slows after World War II. This trend is illustrated in the ideal-typical site conditions of the Lafayette site. Here and unlike what occurred on the other sites, the external circulation conditions remained relatively consistent overt time. How can we explain such a slowdown? First, we may introduce external factors specific to the backbone of the city such as the development of pedestrian areas, the densification of the population or the proliferation of salient signals in urban ecology (Denis & Pontille, 2010) that pedestrians cannot but refer to. Second, we may mention the growth of consumption places in the city center: among pedestrians, some people show attention to windows given their focus on market goods and their openness to market surprise, distraction and "captation"/seduction devices (Bonnin, 2002; Cochoy, 2007).

Additional loads attached to individuals as vehicular units provide a final element of explanation. In the early 21th century, downtown pedestrians did not come, move, nor leave alone. Behind the expansion of these units we do not point at groups of individuals only (family, friends). We especially refer to individuals who, alone or accompanied, carry with them objects and/or bags. If the former are intended to be consumed (on site or later and elsewhere), and if the latter are rather used to assist travel with loads, both engage and realize at the same time a logistic that changed radically over the past century.

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24. The direction of the rue Alsace Lorraine, in the late 19th century (from 1870), also refers to this imperative. This is a schematic crossroad with two major axes: Rue de Metz and Rue Alsace Lorraine, which help to travel directly across the city (Taillefer, 2002).

- % pers. with at least one bag and/or one object (accessories excluded) -
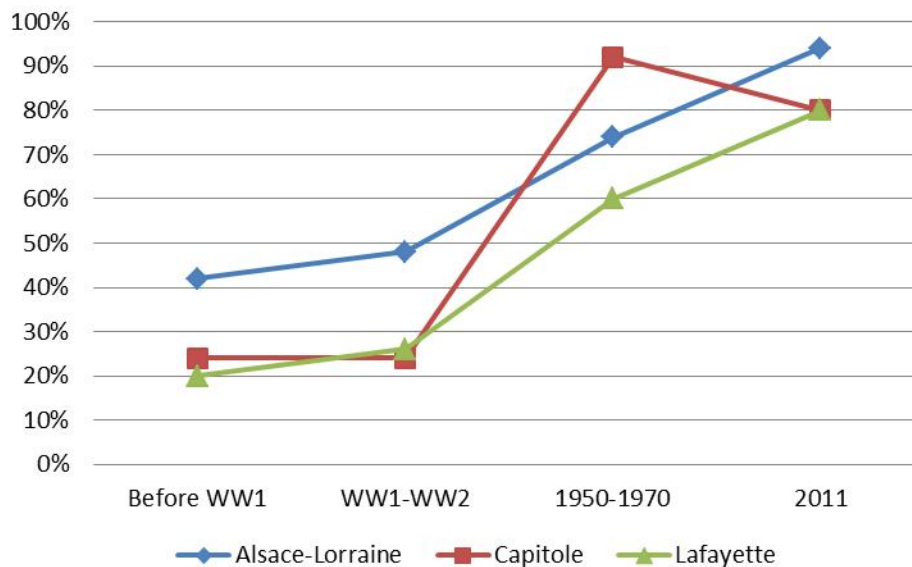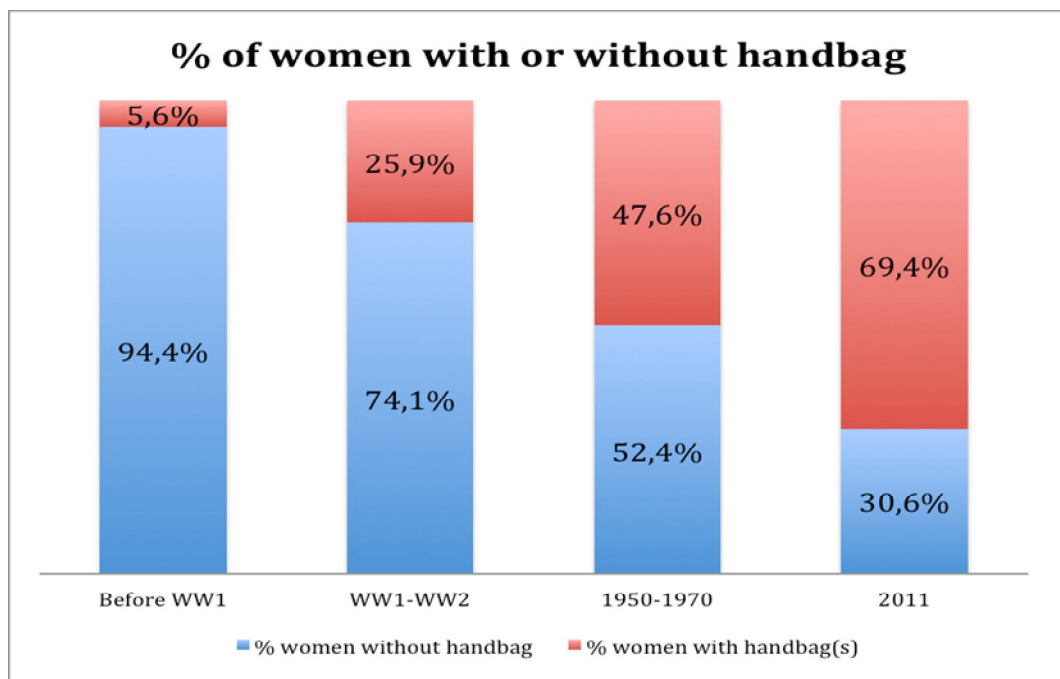

Graphique 5

The curves of this fifth graph show how, regardless of the site we study, the proportion of individuals among pedestrians who carry at least one bag and/or one object[25] increased continuously since the early 20th century. If 20 to 42% of pedestrians carried a load before World War I, the proportion rose from 80 to 92% in 2011. Why did such a load become endemic to the movement of pedestrians in urban centers? For at least two reasons: the specifics of the city center and the specifics of modern mobility. On the one hand, the urban environment appears to be a space that organizes and promotes practices, including consumption, that claim for the use of personal items that must be carried around (finance one's purchases and transport, adjust one's view to inspect the goods). In addition, the urban environment is a place of consumption that promotes the acquisition of new objects along one's journey: pedestrians often travel empty on the outward trip, and weighed after shopping. On the other hand, modern mobility, regardless of the places where it occurs, commits pedestrians to equip themselves so that not to violate heavy social norms: for instance, a majority of them can't go without technical artifacts that allow them to organize their availability and accessibility. The transport of these artifacts helps to justify, even in the case men, the regular use of bags. These containers allow people concentrating the load and sharing the storage of personal items. Other factors are the more general increase in the purchasing power, the development of the consumer society, not to mention a parallel movement of equalization of social conditions. The first two phenomena combine to multiply the number of bags and items carried. As far at the third is concerned, it led to the decline of the population of servants who were shopping on behalf of their masters in the early hours of the day, hence the lesser load of the persons seen in the streets at other times, and conversely the increase of the next generations of pedestrians. In our study, this development was only denied ironically, with the as fleeting as exceptional appearance of a patron with a servant and her basket:

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25. With the exception of accessories: canes and umbrellas, including consideration deserve special attention.

Fig. 6. Rue Alsace-Lorraine, 1909.[26]

These trends are reinforced by the innovations that cross the garment leather sectors. These innovations legitimate, in the same movement, the systematic use of bags and the wearing of often narrow and curved clothes were it is difficult to store anything. The historical review of the accessories favored by pedestrians in the city center confirms the advent of the personal bag over the century, particularly among women who almost exclusively wear this accessory.

Graphique 6

At the same time, the most typical accessories of the pre-War period, including hats and other headgear (90% of pedestrians) or canes and sunshades (17% of pedestrians), have completely disappeared from the urban space.
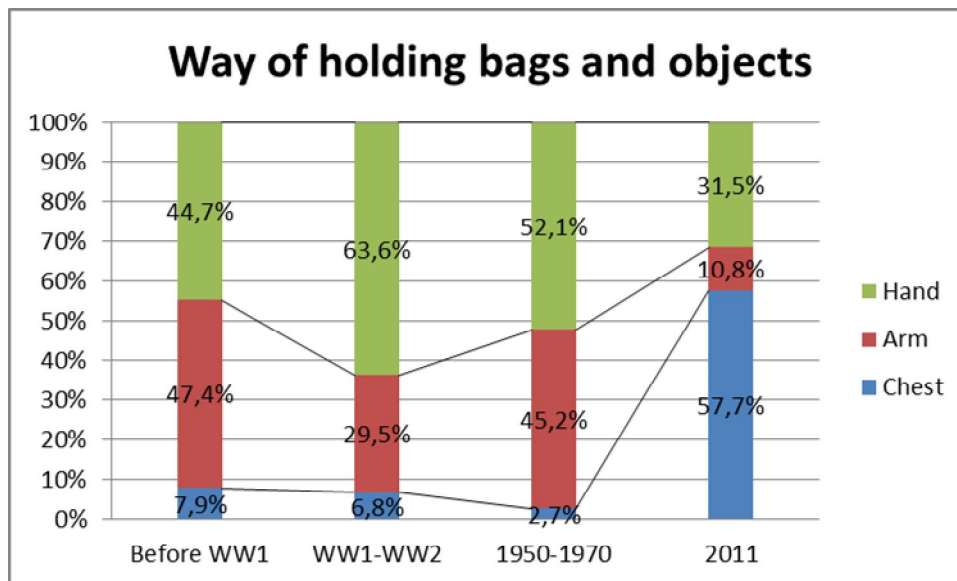
Graphique 7

To sum it up: urban transport engages a kind of logistics which itself results in an increase in the "shell" of pedestrians. This additional burden (associated with the presence of bags and now with massive objects in the pedestrian flows in the city center) is divided not only between the two hands of the individual, but also between other areas of the body, even the most unlikely: at the beginning of the 20th century, it was not uncommon to see women carrying bulky and heavy loads on their head.

Fig. 8. Head transportation[27]

If Figure 7 sacrifices the most under-represented body parts in our sample, it yet helps identifying some interesting changes in the load distribution between the three main areas of the body: hands, arms, and the upper body of pedestrians (shoulders and backs). During the

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27 . Left: Eugène Trutat, T083 ; Middle: © Conseil général de la Haute-Garonne, Archives départementales, Labouche Fund, 26 FI 31555 70; Right: Eugène Trutat, T252.

first period, we can see how hands and arms are involved to carry items and bags (45% of them are carried by hand and 46% with/under the arms). Until the 1980s, hands were also usually preferred for the transport of this surplus by pedestrians (over 50% for both periods WW1-WW2 and 1950-1970). After a serious decline during the interwar period, arms became a regular site for the transport of objects and especially bags (45%). Indeed, the latter are now less *under* the arm than *on* the arm, a body attitude largely driven by fashion and elegance of a dated code (see the marketing of the Coco Chanel 2.55 bag in 1955).

During the first three periods, shoulders and torso were used only on very rare occasions as transportation means (less than 10% of the cases). Therefore, the shift that occurred between the 1950-1970 period and the beginning of the 21st century in the ways to hold bags and objects was all the more brutal and stunning: the setting of hands at rest or in relative freedom (30%) and especially of the arms (10%) is concomitant with the regular use of the shoulders and torso (almost 60% of the items/bags are now carried on this area of the body). The introduction of shoulder bags and backpacks plays of course the leading role here. Even if these devices were available for a long time,[28] their use by pedestrians was very limited during the postwar boom. It was not until the 1980s that fashion captured these accessories and legitimated them as inevitable urban containers. [29] The backpack, given the developments we identified, has certain logistical and circulatory *a priori* advantages—in addition to free the hands—that illuminate its current success: they favor an unplanned management of objects (both in terms of number and weight), the management of other pedestrians (density of flows, risks associated with friction and collisions), and finally the management of urban infrastructure ill-suited to "shells" which go beyond the individual bodies (backpacks helps taking an escalator, step into a shop, sneaking into a dense crowd).

What can we learn from these stories of pedestrian flows, transport and logistics in the city center? Our response differs from what could be learned from the general history of transportation. With our archaeological approach, we have indeed tried to sacrifice neither the transportation means that makes transport history (cars, public transport, bicycles), nor those that are most often on the side, where it is difficult to watch, particularly since the technological innovations that underlie them are more discrete and innocuous (pedestrians and their containers). Our methodology allows for such a study since no images are focused on vehicles themselves—the majority of images are, as we have seen, instead focusing on famous monuments, scenes of daily life, markets. Therefore, because they do not decide which vehicular units counts or doesn't count, these images helps seizing the plurality of traffic flows and the variety of vehicles that shape the urban life in Toulouse. In addition, by placing these images under a both quantitative and qualitative scrutiny, it was possible to identify major historical trends and the *a priori* insignificant movements and devices that underlie them.

We have seen how the equipment of the city and city dwellers are reflected in the movement of people and things (and reversely). The pedestrianization of streets, the removal of cars and public transportation at the turn of the 20th and 21st centuries—only from the surface of

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28. Shoulder bags are used by women since World War II; backpacks were developed in the 1930s with the Lafuma model.

29. Hervé Chapelier particular contributed to obscure the mountain origin of backpacks in order to shift them into a city accessory that was first very popular with pupils and students from affluent backgrounds (http://www.herve-chapelier.com/histoire.asp).

the city—and even more the surprising and sharp decline of bicycles, parallel the densification of pedestrian flows in these same areas. More and more numerous, and so more and more visible, pedestrians also proved to be more and more equipped. The figure of the pedestrian now refers as well to the individual who travels on foot, as to the one who travels on foot *and* loaded.

Some objects, among the oldest, ironically participate to the comfort of these moves (eg, accessories such as canes, hats or sunshades). Others were gradually added to the classic range of the artifacts needed for urban traffic and activity. Circulating in the city center attaches those objects to pedestrians in two ways. On the one hand, it imposes a personal transportation of the personal items that are necessary for urban life. On the other hand, the urban space is configured to promote the transfer of objects, including commercial ones, and so entice/answer the temptation to buy new ones. This material graft between pedestrian and objects is backed by a triple historical development that affects the kind of individuals (feminization), their pace (slow movement) and the deployment of a logistics with personal and shopping bags. The use of the latter reflects the recent opportunity offered to pedestrian not to care anymore about planning her purchases and to abandon herself to her instant desires while getting at the same time the tools she needs to fulfill them. The movement of pedestrians thus engages not only logistics but also an early emerging/spontaneous logistics that is embedded into the ergonomics of the city and its commercial places.

Once pedestrians and their containers have been taken into account, it becomes possible to observe, on the margins of the most visible aspects of traffic flows, other more obscure transformations associated with them. Among pedestrians, it is the displacement of the load on the body, helped by the introduction of new types of containers, which illustrates these developments: the most striking example is the handbag, worn most often on the shoulder in the 21st century. Other similar noticeable movements are branded shopping bags, or even the replacement of sunshades with cellphones in shopper's hands:
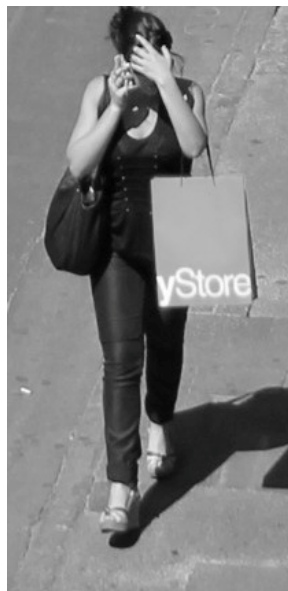

Fig. 9. Handbag, shopping bag, cell-phone…[30]

Travels in the city center thus give rise to hand and bag games that posit pedestrian logistics at the crossroad of transformations in the urban infrastructure, technical innovations in

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30. © Roland Canu.

container technology and finally a genuine experience that encourage the emergence of new uses. These stories of urban mobility are certainly playing in a minor mode, but they ultimately prove to be an exciting addition to the great history of transportation.

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