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# Placing subway signs

## Pragmatical properties of signs at work

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### **Abstract**

Public spaces are made of lot of signs that take a great part in the construction of modern citizenship. Different kinds of exposed signs constitute essential means of equipment for the environments we are dwelling in and for individual persons. As some studies have stressed out the importance of emplacement and indexicality *per se*, we propose to switch the look and analyze the activity of workers in charge of signs placement. Ethnography of subway signs installation allows us to shed light on their invisible work that involves heterogeneous ways to treat signs. We assume that placement work enact different pragmatical properties for situated signs. According to circumstances, subway signs can be grasped as texts, indexes, landmarks, objects, part of a network and as a normative stake. For the signs performativity to be actualized, workers have to mobilize a composite knowledge that prioritize and articulate in situation these semiotics properties.

### **Keywords**

Subway signs, Ethnography, Placement Work, Pragmatics, Ecology

## Introduction

As Simmel has probably best put it, public spaces are made of lot of signs that take a great part in the construction of modern citizenship (Simmel, 1972, p. 324-349)<sup>1</sup>. With extremely various forms, visual objects inhabit our world. We live with them, and partly thanks to them if we think of all signs that allow to regulate the flow of traffic, or that inform us of our surroundings states.

Recently, some studies have pointed to the importance of all kind of exposed signs. As tools for visibility, they are a central component of contemporary public spaces and their “atmospheres” (Latour & Weibel, 2005), as well as of contemporary markets (Cochoy & Grandclément, 2005 ; Muniesa et al., 2007). Visual equipments are thus keystones in the performance processes of collectives and societies. As cognitive artifacts (Norman, 1990), they also equip everyday people which, thanks to them, are able to easily compare prices, to assess commodity qualities, to find their way, to be informed of fresh news or even to take part in public debates.

Studying signs from this angle clearly require wandering from traditional semiotics that generally interprets isolated signs. The work of R. Scollon and S.W. Scollon (2003) offers great resources for this move. In their basis of “geosemiotics” they make a plea for considering numerous environmental properties of signs. Doing so, they insist on two issues. The first one is indexicality, which roots all signs meaning. They suggest studying signs as “signs in place”, that is to say: the relationships that signs have with their surroundings. Second, they consider signs as support for action and investigate the different ways visual objects are supposed to afford various activity regimes. This last issue echoes another research line that recently reconsidered the singular aspects of writing performativity in shedding light on the role of materiality and of spatiality (Fraenkel, 2006).

However, geosemiotics program appears not totally satisfactory to us. While, from their first pages, R. Scollon and S.W. Scollon mention the role of organizations and workers acting behind the “signs in place”, they never study their activity. Their contribution is a real effort of signs recontextualization, but it is focused on the “emplacement” of signs themselves. Context here stops at the door of daily operations that *signs workers* handle. Yet, these operations play a great part in the setting of visual environments. Studying them can be useful to understand signs and visual communication from a pragmatist point of view: neither *per se*, nor by observing their uses, but by questioning the concrete conditions of their accomplishment. Our aim here is to invest this field and move the focus from “emplacement” to “placement”, conceived of as a full activity. To be in place, signs have to be placed. We will shed light on signs installation as a process requiring specific operations, skills and know-how. Therefore, we will assume that signs in place are the result of a largely overlooked “placement work”.

Such a perspective leads us to wander from another facet of geosemiotics agenda. One of the latter purposes is to elaborate a typology of geosemiotic systems. When one considers placement work, a completely different issue raises. During their activity, workers themselves mobilize ways of classifying and defining signs. They rely on “typifications” (Schutz, 1953), which simultaneously are products and frames of action. We want to point out such situated understanding of signs that go through the placement work. We will see that it provides a pluralistic definition of visual objects that rely on different ways of qualification for the same

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<sup>1</sup>. This research is part of a larger collective project entitled “Ecologies and Politics of Writing” and supported by the Agence Nationale de la Recherche, Grant n°NT05-1\_42082. The authors gratefully acknowledge the active cooperation of people from the Régie Autonome des Transports Parisiens (RATP) for their willingness to provide information, for their openness and for the time they devoted to the study.

sign. Therefore, our aim is not to take position in a theoretical debate about linguistic or spatial features of signs, but rather to understand how such questions are practically handled in situation. In doing so, we will try to draw an enriched vision of situated signs, grounded on an analysis of their pragmatical properties, that is the ways they are grasped and enacted by workers in charge of their placement.

This communication thus addresses two main issues:

- What operations and sequences of action the placement work does involve? What kind of devices and what skills are required?
- How do workers manage signs in concrete terms? Which local semiotic definitions do they rely on to accomplish their work?

To deal with these questions, we will focus on the case of subway signs, using the results of an ethnographical fieldwork within the Régie Autonome des Transports Parisiens (RATP).

## **Subway signs in Paris**

### ***The graphical side of transport services***

Subway spaces are particularly favorable to the exhibition of numerous signs. Within stations as well as within trains, a vast variety of graphical objects is exposed to the attention of riders: sales outlet and booth designations, list of ticket prices, timetables, network plans, rider guidelines, security norms, poster advertising, poems, tags and graffiti, stickers...

Among this profusion, some signs have a specific status: they are placed in the environment with the aim of helping riders in the course of their trip. Instead of being ornamental or promotional elements, these signs, which constitute "signage", compose essential equipment to the everyday life of transport service. They transform an architectural place, mostly made of corridors and rooms, into an accessible and "readable" circulation space for riders. Subway would be a large labyrinth without signs boards to name stations, to indicate platforms, and to point out ways and connections between lines. Thus, signage is a strategic matter for carriers. It deals with essential issues such as security, productivity and usability. It is also an essential feature of the experience of mobility in modern urban spaces. It provides landmarks in artificial places which would be particularly uneasy to inhabit without it.

Yet, the success of signage is not self-evident. Its efficiency does not depend on the sole composition of each board. On the one hand, all signs must be designed and placed by taking into account the coherence of their mutual relationships. On the other hand, the competition with other signs that spread all over subway spaces. Signage involves actually a combination of several skills and the organization of specific departments dedicated to its conception and production.

In the case of the RATP, signage became a central issue in the beginning of the 1990s. A team of specialists (designers, cartographers and architects) was founded to rethink the whole subway signs system. Surveys, field studies and experiments were conducted; they brought to an ambitious signage policy that led to a deep reengineering process (departments creations and reorganizations). A new signage norm emerged that encompassed the whole signs collection: boards material and size, fonts, colors codes, pictograms, layouts...

Today, the mundane work about signage essentially relies on two specific units: a signage innovation department in charge of its standardization and normalization, which is in relation with marketing and communication; and a department dedicated to signs production and maintenance. About thirty persons work daily in these departments. Five of them have the delicate task of placing signs in the subway environment. The elaboration of a brand-new signage policy has had two main consequences for them. First, they have to change all

obsolete boards of the subway system and to remove definitively some of them. Second, they have to place new boards in additional places in the sake of the new signage policy.

### ***Ethnography of signs placement***

To understand practical stakes of placement, we did situated observations of workers that daily put up Paris subway signage<sup>2</sup>. We followed them, working in pairs, during their rounds in subway stations. The purpose was to reconstitute the spectrum of their activities, to understand constraints they have to deal with in everyday work and to identify the key resources they use for the signage placement.

One could think that the placement of subway signs is a straightforward task that requires few knowledge and skills. After all, workers have only to stick with the signage policy rules and guidelines. Yet, their activity is far more complex. The placement of subway signs involves the coordination of several persons (the maintenance department hierarchy, stations superintendents and, in a way, riders themselves) and takes place in heterogeneous settings (platforms, corridors, stairs, station entrances...). It also implies a sound knowledge of signage matters, the handling of detailed technical documents and the manipulation of a variety of more or less complex devices (ladders, measuring tapes, drills, screwdrivers...). Far from a seamless daily routine, the placement work entails difficulties, adjustments, doubts and even risks.

We tried to gather this complexity as sharply as possible. Besides descriptive notes, we did systematic pictures in the workers actions course to give an account of their work conditions: activity ecology, main operations, gestures and tools. We also pay a particular attention on the vocabulary they mobilized during their hesitations and discussions about signs and their placement.

These investigations were helpful to identify the variety of situations in which workers daily act and to understand that their work involves heterogeneous ways to treat signs. Furthermore, such an ethnography allows us to emphasize lateral political issues. In modern societies, which set up "information" as a main component of citizenship, urban spaces are generally looked upon as functional and inhabitable for themselves. Passersby mobility and orientation should emerge naturally from architectural buildings, design objects and influx (auto)management. When it is not the case, the experience of disorientation leads to wasted-time or insecure feelings. Studying signs installation is not a mere ethnography of work: it provides an occasion to "surface the invisible work" (Star, 1999) that makes possible the visual environments permanency and efficiency. It is a way for us to shed another light on the materiality of information society and on the work that performs its infrastructures. Signs are essential to the everyday running of subway systems, airports and cities themselves. We assume that signs workers activities can be seen as a keystone of public places performance.

### ***The right sign in the right place***

The new RATP signage policy may have emerged in the 1990s, ten years after, the whole subway system is still not updated. There are so many signs boards within platforms, halls and corridors, that nobody knows exactly how many have to be replaced or removed, not counting all maintenance operations required to repair broken or worn boards. Applying signage policy is therefore a never-ending work.

From a general point of view, the placement of subway signs concretely starts with a document — the work order (WO) — written and sent by a station superintendent to the maintenance department. This document gives a short description of the problem: which

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<sup>2</sup> This study is part of a larger ethnographic fieldwork concerning Paris subway signage: conception and design, production and installation, repair and maintenance of signs in the environment. It is also based on interviews of different stakeholders and on the analysis of several documents such as guidelines and reports.

board is concerned, its location in the station, and the expected operations to restore the situation.

Each WO opens an iterative set of typical actions for workers. As they work in pairs and go through the city by van, they always start to organize the rounds of the day. They read all WOs to estimate the amount of work, they choose the right boards among these available in stock, carry them in the van, and then they optimize the rounds by identifying the locations of operations and filling WOs in a coherent way.

Nearby each subway station, workers start others set of actions. They park the van as close to the station entrance as they can, they read again the WO to specify their mission, and they go down to the station. Then, they look for the exact place of their task, they assess the situation and the tools it requires, and go back to take what they need in the van. Finally, they begin the installation process: choosing the place of a board, putting it up or putting it away, judging and discussing the best way to match to the current signage policy.

Central issues run through this activity: where does the sign must be put up? What is the right or wrong position? These issues are translated in a set of doubts and hesitations that end up with the effective installation. Confronted with such uncertainty workers treat signs in various ways. They have to juggle with heterogeneous semiotic features and to rely on what we term pragmatical properties of signs. Thus, we will see that each sign can be grasped as a text, an index, a landmark, a material object, part of a network, or as a normative stake. In each case, particular actions are engaged to test out the relevant properties and the placement efficiency. To give an account of this plurality, we will set apart two types of sign features: linguistic ones and ecological ones.

## **Linguistic features**

One can see subway signs as mainly linguistic equipments for riders. They provide “discursive settings” that frame people circulation (Denis & Pontille, 2008). During the placement work, such linguistic features are not transparent. As workers handle signs in various situations, they lean on extremely different properties.

### ***Sign as text***

The most obvious dimension that workers mobilize in grasping subway signs is the textual one. This is the case, for example, when they have to replace a board whose information is erroneous. In such situation, the focus of work is the discursive content of each board: signs are looked upon as intended to be read by riders. The right or wrong placement choices are guided by the need for board to be readable (it has to be clean, correctly spelt, and so forth) and relevant (information have to be up-to-date).

This textual dimension is an important feature of the placement work and does not stop at the linguistic content of boards themselves. Working Orders contain precisions about the board to be placed or replaced, and generally indicate its informational content. Partly abbreviated and coded, they are supposed to help workers to know which board and what place their intervention concerns.

Textual dimension of boards is therefore a powerful means of coordination in the actors’ network that takes part in the signs placement process. Nevertheless, what is indicated in the document can be not explicit enough, or can be only partly reliable to the complete content of the board, indeed false. Work becomes then more difficult.

Before entering the station, Robert and Herbert read the WO. It says “signage - missing board”. A deeper reading of comments allows Robert to specify the task to be done. It notably says: “two boards to be removed from the customer service booth window”. Information is indeed completely different: none board is missing, on the contrary they have to take off two. Once on the scene, Herbert and Robert look at present boards and consult each other. Herbert: “So, what do we have to take off, finally?”

Robert: "Two boards have to be removed, so... this one (pointing out a little red one on the window) and this one (a pink one on the wall, on the right)."

Herbert: "Are you sure? Because the WO says "after-sales service" and "customer service information line 4".

Text on boards and text on WO are not identical and Robert and Herbert are overcome by doubt. To afford such uncertainty they ask help to the greeter in customer service booth. The latter points out the boards that have to be taken away: the pink one on the wall and another, identical, on the window. Robert and Herbert remove the two boards (photo 1).



Photo 1. *Two pink boards removed*

Therefore, even if they seem transparent and easy to handle, textual properties of signs can lose some of their efficiency in situation. The reading of both boards and WO requires an alignment that is not always attained. Thus, it's not sufficient to focus on the readability of the text or to read board and documents that are associated with. Other features have to be mobilized to accomplish work, such as the verbal precisions from a greeter in the last example. The use of oral is sometimes essential to clarify and contextualize writing, especially within workplaces (Grosjean & Lacoste, 1998). But in most cases, this resort is not available. Workers have no other interlocutors. Such situations shed light on other useful features among which is spatiality. Placement has to do with space and mobilize linguistic features that are directly tied to proximal environment.

### ***Sign as index***

An important role of subway signs is to show their way to travelers. This indexical property is very useful in the work of the operators. Firstly, when mobilizing it, they can identify the part of the station where they have to put up a board. What the sign points to is as much a space for riders' movements than a workplace for operators.

Nathan and Stephan are on their way to replace a board in a very wide station. The board is one of these that have to be placed on top of entrance stairs. Looking for the right entrance, they turn around the square above the station. There are a lot of entrances and they stop the van each time to see if it has the same identification code than the one that figures on the WO. But after they went round the entire square and looked at six entrances, they still do not have found the good one. Stephan decides to go about it in another way. He goes at the back of the van and catches the board itself (photo 2).



Photo 2. *Checking out a board to deduce its location*

He reads its information and the ones on the WO in order to understand where they have to put up the board. First lines indicate that access is only for riders who already have tickets, which means that it is an entrance that brings directly to platforms, without encounter any booth. Below, it is specified that the nearest booth stands at the principal entrance of the inner square. Therefore, there are only two solutions left for finding the place: it should be one of the entrances on the left and on the right of the principal one on the inner square. Nathan parks the van in front of the first one and Stephan confirms: the board has to be placed right here.

In this case indexical properties of signs are clearly a resource. But in other occasions, it can bring more troubles. Part of the placement work consists actually in the elaboration of indexes themselves. This is what happens when a fresh site has to be indicated and brand-new boards have to be settled. Indexical properties of the future board are never self-evident, nor do they rest in the informational content or directional symbols such as arrows. Workers have to enact these indexical properties by choosing very precisely the board position. This choice requires the reconstruction of a physical link between the site that has to be pointed to and the future board location.

A new museum opened recently in the east of Paris. Its president has asked the RATP for its name to be indicated on exit boards within platforms and the hall of the nearest station. Paul is sent over there to identify the right place for these boards and to decide which street name will be associated with the museum's one.

In order to make his decision, he firstly stays outside the station and tries to identify the right exit. On his way to one of the three possible exits, he mobilizes several elements to confirm his choice. First, he looks for the museum building. Once it is at sight, he looks again at other exits. His choice seems to be made: one of the exit stands clearly farther and the other would required to cross a wide avenue.

Then he goes down to the station and walks backwards the way that will be indicated by the exit boards: from the hall to the platform. In doing so, he can identify the boards to be replaced by new ones that will include the museum name (photo 3).



Photo 3. *Exit boards to be replaced to include the museum name*

In a glimpse, and then through his own movements, Paul experiences the potential indexical properties of future boards. He tests out the deictic relation in covering the space between the indicated site and future indexes' location. But this first move is not sufficient for Paul's choice to be definitive. Many other signs in the way have an indexical vocation. He mobilizes them in order to strengthen his decision.

Within the station, Paul carefully reads the street names on existing boards. He pays particular attention to the ones that point to the exit he chose. The boards that will carry the name of the new museum must refer to only one street. To check this, he walks again as far the exit. Outside, another sign allows him to confirm that places for future boards and street name are the right one: the neighborhood map (photo 4). He reads it attentively, spots the museum on it and the junction where its exit is.

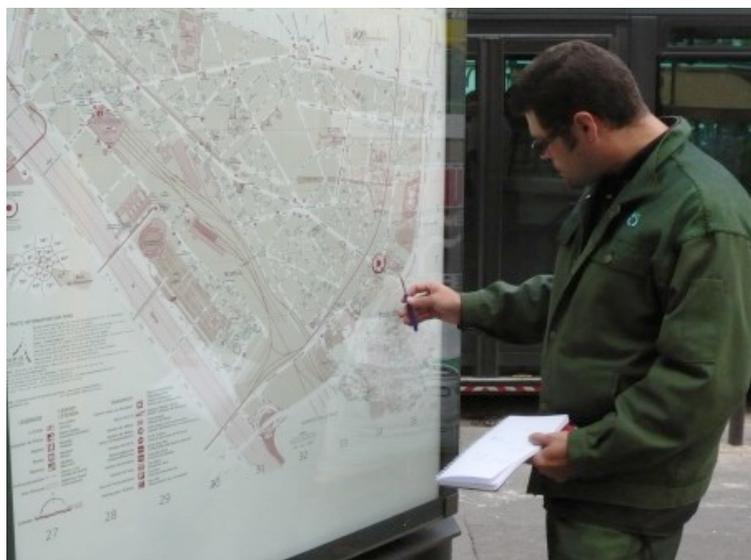


Photo 4. *Reading a neighborhood map to confirm a choice*

At last, he tries to read the street plaques on the other side of the avenue to be sure there is no possible confusion. Once all crosschecking done, he confirms in his notebook the location of each future board and the street name to be associated with the museum's one.

Thus, the other indexes offer important resources for corroborating placement choice. Yet this case clearly shows that they also constitute constraints. For the indexical properties of a

future board to be enacted, workers cannot ignore other available indicators. If they did so, they could create situations of cognitive conflicts, where indications on different signs are not adjusted to each other, if not plainly contradictory. It would produce nothing but confusion in riders' displacements.

Moreover, this example shows that taking into account such a variety of signs, and solving the difficulties it raises, is a highly embodied activity. It is by his own movements that Paul can successfully form a coherent system from a set of heterogeneous signs (various indexes of the station, the neighborhood map, street plaques...). By pacing up and down spaces, he lines up future boards with existing informational systems. He does it the same way users of Boa-Vista Topofil produce scientific data: by walking (Latour, 1993).

### ***Sign as landmark***

A third way to handle signs noticeably wanders from reading. It implies to identify the right position for a graphic object in showing concern about the action it is supposed to support. The "push" sticker that has to be stuck on certain doors is a typical example for such a situation. Not only it must be placed for riders to see it, but also its emplacement has to indicate where one has to put the hand to properly open the door (photo 5).



Photo 5. *Putting up a sticker*

The sign is here grasped as a landmark. Its ability to become a support for action is the crucial point in the placement work. The visibility of the sign counts then much more than its legible and understandable qualities. The sign has to be catchable in a glimpse in order to engage riders in an almost transparent perception/action process, in the same way cognitive supports do (Hutchins, 1995).

Mobilize this property is not too difficult for handy placed signs. It is more complex to assess the way farther boards support riders' movement.

Herbert and Leonard just finished to put up a board that indicates the name of the station on a platform wall. Leonard steps back, and looks at the result of their work. He glances at the entire platform, estimating its length, and says, doubtfully: "we should have provided two boards! The riders from the last car cannot see anything. If I was there I could definitely not see it [the

board].” The emplacement of the board they just affixed is not in cause. It is the need for an additional board that is questioned. In order to check this eventuality, they decide to wait for the next train. When it comes, they watch the riders’ faces and glances. Some of them are obviously looking for the name of the station. They do not immediately find the board. After this test, Herbert and Leonard agree to order another board for the end of the platform (photo 6).



Photo 6. A name station on a platform wall (riders point of view)

Visibility is not an intrinsic property for a board: a sign is never a landmark by itself. The issue of the above situation is the assessment of the board visibility and efficiency for the whole riders. For that, workers firstly take the place of riders that go out of the car and check with their own eyes the situated qualities of the sign board. In doing so, they accomplish an “embodied representation” of users, grounded on their riders ordinary competences (Barrey et al., 2000 ; Denis, 2008). After that, they take advantage of the presence of riders within their workplace to complete their judgment with an *in vivo* observation of their attitudes. This short inquiry allows them to confirm their first intuition: the board they just put up is not sufficient. Another landmark is needed at the end of the platform.

All these cases show that workers treat linguistic facet of signs in various ways. They mobilize a composite knowledge of how subway signs can provide meaning in environment. However, as previous ethnographic descriptions have suggested it, these signs are not only a matter of language.

### **Ecological features**

Subway signs are part of complex and heterogeneous surroundings that are taken into account during the placement work. This aspect sheds light on various ecological features that draw distinctive pragmatological properties of subway signs.

### ***Sign as material object***

A first look at subway signs during work processes allows understanding a very simple fact: these signs that can be considered as texts, indexes and/or landmarks are also objects. Installation is made by handling operatives: they have to carry sign boards, affix them on walls, put them down, and so forth (photo 7).



Photo 7. Carrying a board

Material features of each sign play therefore an important part in the placement work. It involves a lot of manual operations, tools, and skills.

Nathan and Stephan have to put up a new sign board to replace the older one that have fallen off the wall and broke. They first have to affix new metal holders they have drilled beforehand. Then they measure both board and holders, and write few marks on the wall. They use the tiles as a guide to make sure the new board will stand straight. For these operations they use two different drills, glue cement, a pen, a measuring tape, a screwdriver, plugs and screws (photos 8 and 9). Once the board is affix to the wall, Stephan carefully wipes it and says: "Here it is, a brand new sign" (photos 10 and 11).



Photo 8. Measuring



Photo 9. Drilling



*Photo 10. The new board, still dirty*



*Photo 11. Wiping*

In doing all these manual operations, workers do not pay any attention to the sign board linguistic content. All that matters is the efficiency of hanging, the straight alignment of the board and its cleanness<sup>3</sup>. Material properties of signs raise thus particular issues that we propose to term ecological: dealing with it requires a whole infrastructure of tools, devices, matters and energy supply. In that example, Nathan and Stephan had to pause for recharge the battery of the second drill. Such a deep interdependency is an important feature of the ecology of repair and maintenance activities (Graham & Thrift, 2007).

This kind of interdependence is also visible elsewhere. Other material difficulties workers have to deal with are tied with the way some of graphical objects are designed to be easily (or not) repaired and maintained. To put up or to put down a subway sign can actually be a real challenge.

Nathan and Stephan have to change a board in order to update its information. The amount of handling they have to do for this seemingly simple operation is surprising. 16 small screws have to be removed from the metal frame in order to put away the spoiled board (photo 12).

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<sup>3</sup> At first sight, these kind of manual operations seems to be specific to signs such as boards, notices, signposts, electronic displays. However, the production and the placement of most signs also entail handy skills and tools. For instance, the material property of a bailiff's written deed involves more than a pen and a sheet of paper for its production, as well as for its placement in front of the lienee's house door (Pontille, 2006).



Photo 12. *Removing screws*

Once it is done, they put up the new plaque very carefully: a false move could definitively damage it. Then they screw back the frame before hanging it up on the ceiling.

This last point shows another aspect of subway signs ecological features. Workers practices depend largely on designers and manufacturers that do not necessarily take their activity into account when they produce holders or frames. It forces them to adjust their situated practices, and much of the time to face up to compelling material properties.

In comparison with language ones, material properties show how much the signs placement process is a matter of handling work. It also sheds light on the complexity of such a work. But it would be exaggerated to think intellectual and manual works are clearly separated during activity. Ecological features of signs point to the exact opposite. Handling signs requires both manual skills and knowledge of how signs are connected with each other in each setting.

### ***A network of signs***

No subway sign is worth for itself: neither in halls, corridors, nor on platforms. Each board is designed and settled in relation with others. Therefore, it's extremely rare for workers to focus their attention on the sole sign they have to place. Instead, they are generally aware of the entire graphical environment that surrounds them. The network of signs that spreads through the spaces they work in represents a great local resource for immediately clear up most doubts.

Herbert and Leonard have to choose the emplacement for a future board at the end of a platform. Yet platform opens out two corridors that are indicated by two hanging boards. The choice of Leonard and Herbert comprises different issues: the future board has to be visible enough in spite of the architecture of the platform and it has to avoid confusion with the two other boards. Herbert makes a first proposition: they could place it on the central pillar between the two corridors. After a length of time, Leonard suggests another solution: the wall on the right. He thinks it is better to place the sign in the direction of riders' influx. So the latter could see the board by walking, and its information would be isolated from the two existing ones. Herbert approved this choice (photo 13).



Photo 13. *Choosing a future board position*

Keeping a close watch at other signs is not relevant only for the placement work. It is also a way to take initiatives for displacements, indeed removals, of certain boards.

Nathan has to replace a provisory board in a corner. After finding the sign in question, he hesitates, looking at both left and right corridors and the boards already there. The WO specifies he has to change the board indicating "Place de la Chapelle" for a new one because it's used. But after another look at the two boards that frame this one, he decides to remove it instead of placing a new one. He explains aloud: "This is a provisory board. It's at the right place but the two other at its left and right are new ones: they are the definitive signs, enamelled. So this one has no more reason to be here. I don't have to replace it". In saying this, he pulls off the provisory sign and throws it away (photo 14).



Photo 14. *Removing a provisory board*

These two cases show that a particular place in a subway station is more than just a micro-local occurrence of lonely symbols. Embracing an entire network of signs is generally required to make the right decision: to put up a board at the most appropriated place or to put away an irrelevant one. With one single glimpse, workers can have a complex view of the surroundings graphical ecology.

There's another way to take the multiplicity of present signs into account. Instead of remaining in place and watching around for all the boards at sight, it involves a more dynamic relation to the network of signs.

Nathan and Stephan are in a huge station. They try to find the location of a used board they have to replace. This station is made of three subway lines with a connection to a railroad station. There are many platforms, and corridors are countless. Stephan has the new board in hand and starts to read signs he encounters. He tries to find boards that are in relation with the one he holds. Nathan also looks for clues in the environment (photo 15).

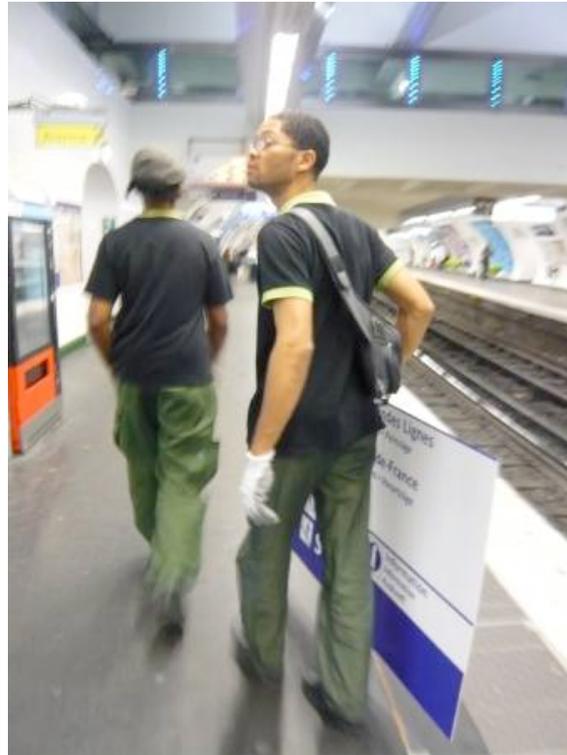


Photo 15. *Reading and watching signs all around*

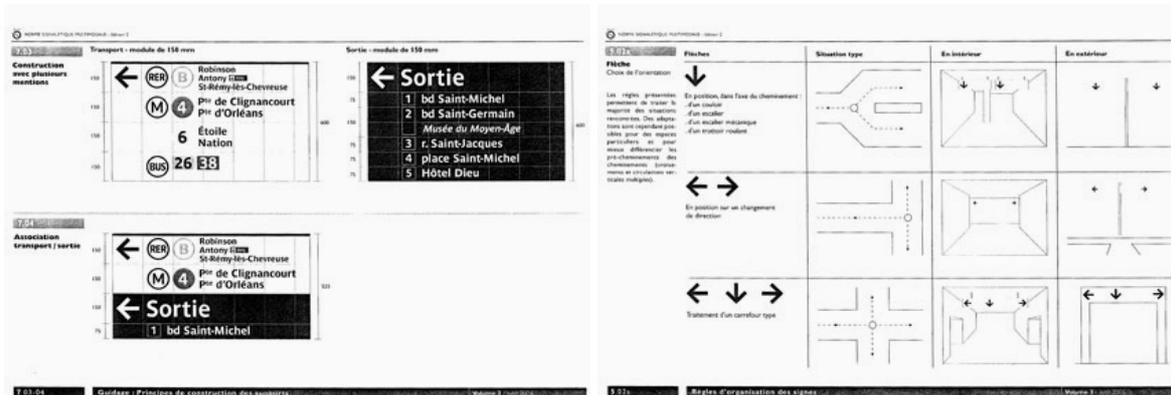
Stephan finds a track in a corridor. They go down to a platform where signs indicate the same directions than the one they have to put up. Stephan points out a particular one, that carries some information in common with the one he holds. He says: "we just have to follow the others and we will find where one is missing". After a while, Nathan finds the empty place: across the rails, he points to a board that is exactly the same as Stephan's one, with reversed arrows. The board to be changed must be set on the other side of this corridor. As they reach the place, Stephan confirms Nathan's intuition.

Networks of signs can be very complex. In large stations, all signs do not refer to each other and a glance is not enough to determine the position of the board to be placed. Since a lot of subway signs are made for riders' movements, workers themselves have sometimes to pace round platforms and corridors and follow the trail of signs. In such situations, graphical ecology has to be inhabited in the same conditions as riders. However, in this case, taking the riders position is not a way to put the efficiency of placement to the test, but to unfold the network of signs and spot missing links.

### ***Sign as a normative stake***

Contrary to what some of our descriptions may suggest, the placement work do not begin and finish with the situated action of handling workers on platforms, in halls or corridors. Firstly, as we saw, their missions are generally ordered by other persons who write the WO they receive via the information system. Moreover, an entire signage policy frames the installation of sign boards with an abundance of rules, standards and procedures.

This normative framing takes the form of different documents that support the daily work of signs placement. Of course, as years pass by, workers have memorized a lot of these norms. But in any case all of them could be known and routinely followed. Besides, norms and rules change constantly and documents are regularly updated. In the day-to-day activity, they provide important equipment for people who work in the maintenance department. Guidelines, manuals or memo boards are frequently consulted either to confirm a decision or to catch precisions about the way boards have to be “officially” placed (photos 16 and 17).



Photos 16 and 17. Excerpts of signage general guidelines

In these documents, signs appear embedded in a normative apparatus that produces extremely precise definitions of their size, form, colors, contents and place. They are at the center of a real “writing policy” (Foucault, 1977), which puts them in charge of different strategic functions such as security, circulation fluidity or corporate communication. From this perspective, norms are not only operative tools for placing signs in stations but also means for internally legitimating the entire signage policy. They are part of a wider ecology that includes the whole organization. Mobilizing rules and standards is a powerful resource in the multiple “translation” processes (Star & Griesemer, 1989) that underlies the relations between signage and technical departments.

## The articulation of sign properties

For our purposes we have successively isolated several features of sign. Each of them was illustrated by different micro-local empirical scenes, where workers deal with a specific pragmatical property of sign. Such a perspective is particularly helpful to shed light on the plurality of properties allocated to each sign in concrete situations. However, it does not reflect the entire process that encompasses the placement of subway signs. In most cases, the main issue for workers is actually to articulate various semiotic properties. Understanding this articulation process requires to follow workers in a longer course of their action. It is the purpose of this last section.

During our inquiry, a new prescription has emerged from the security department: emergency exits must now be indicated by a set of new signs. Herbert and Leonard are sent to a station after the security staff has pointed out different emplacements for these signs. They have to confirm or not these choices.

Before they go down to the station, they anticipate constraints of the situation. In doing so, they deal with two sign properties we previously discussed. First, emergency signs are part of a normative apparatus that cannot be ignored. They are entangled in a global policy that makes subway spaces as secure as possible. Second, such signs’ efficiency depends on its successful indexicality. If Leonard and Herbert do not approve the proposition of the security department, they have to find a new relevant place for these emergency indexes.

This initial articulation issue is only the most obvious part of a more complex process. Others sign properties emerge when Leonard and Herbert come in the entrance hall. The security department suggested sticking up the emergency sign on a large existing board (photo 18). Leonard straightaway invalidates this choice. The board content names two potential exits and several connections to subway and bus lines. It is the textual property that Leonard checks here: too much information on the same board will bring confusion.



Photo 18. *An existing board*

As Herbert and Leonard carry on thinking, things go more and more difficult. As we already showed, each sign, color and text content is strictly devoted to a particular place on a board in the sake of the RATP signage policy. The addition of emergency information may disrupt this graphical order. Moreover, the board that they talk about is intended to manage the normal flux, certainly not an emergency situation. The proposition of the security department raises a consistency issue: too much different information cannot cohabit. Leonard and Herbert know that the network of signs is only efficient if each sign is in the right location. It is merely on this condition that signs could be used as landmarks too.

How will they solve these dilemmas? What will they do to articulate the emergency policy, signage policy rules and environment constraints? Let's follow them through their decisions.

They start to look for different options by taking the place of riders. The purpose is clearly to assess the efficiency of signs as landmarks. They adopt different possible points of view in the corridor, they go all over the entrance hall and examine each aspect of the situation. They try to discover which position is the more salient for future boards. Each possibility is discussed before considering another one (photo 19).

For instance, in front of the revolving doors, Leonard suggests: "here riders can't see stairs that lead to exit. So we could put stickers on doors..." Herbert does not say anything, but he seems doubtful. Leonard continues: "...or we could put a sticker on the window of the customer service booth. It is not great, but that is a proper option".



Photo 19. *Discussing possible emplacements for future boards*

Thus, workers rely on riders' ordinary competences to judge where pertinent and visible information should be affixed. But, as the above excerpts show it, additional sign properties are mobilized. The materiality of signs is decisive here, notably when Leonard suggests to affix some stickers (instead of a board), as well as when he imagines the alternative solution afterwards.

Herbert and Leonard are back in front of the existing board. Leonard looks up: "the concrete ceiling can withstand another board hanging on a chain. It could be a solution. The board will be visible whatever circumstances since the light is sufficiently intense". But Herbert notices: "the gap between ceiling and riders head is too short. Some tall riders may hurt themselves". Leonard turns around, looks up again and adds right away: "and the board would be hidden by this video camera. Besides it may hide information inscribed in the existing board" (photo 20).



Photo 20. *The board, among other objects*

As soon as workers actualize the material property of signs, they have to take into account and articulate several other elements that are present in the environment. Neither a piece of information must weaken, disrupt or refute another one, nor a sticker or a board could hide an existing one. Furthermore, as the case points it, this ecological issue includes not only graphical objects but a whole set of various pieces such as lights, video camera or pillars.

This case shows how workers can find themselves in a particularly challenging situation. They sometimes try a lot of various options, assess and discuss potential means, and hesitate for a long time before coming to a final decision. Getting out of such a difficult situation is not obvious. In the case above, they finally opt for what they think to be the more acceptable choice: to put up stickers on revolving doors. Doing so, they practically prioritize linguistic and ecological features and enact a particular combination of semiotic properties.

## **Conclusion**

Operators that place subway signs are part of the wide assembly of invisible workers that daily perform the so-called “Information Society”. Their skills and know-how are crucial to the constitution of efficient graphical settings. We showed that they handle complex semiotic properties throughout their activity. For the signs to be placed in the right position, workers have to articulate these properties: identify the relevant ones, prioritize them and get them together. Thus, visual communication in public spaces does neither rely on signs *per se*, nor on their only emplacement. It is supported by a situated work that enacts signs performativity. Furthermore, this work is never done once and for all. It requires a constant activity of repair and maintenance.

Because they are designed for equipping riders’ actions, subway signs raise also political stakes. According to which kind of support they provide, they make a place for or dismiss whole classes of persons<sup>4</sup>. Some of the various semiotic properties that are mobilized in the placement work are part of such issues. They can be conceived of as bets on some cognitive dispositions (Denis& Pontille, 2008). Riders are engaged in to read texts, to reconstitute indexes, to identify landmarks, to recognize objects, or to follow a network of signs. Therefore the articulation of semiotic properties is not only a situated concern for handling workers: it is a matter of striking the right balance for the performance of both subway spaces and riders.

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<sup>4</sup> This is actually an ongoing regulation issue for the State and lobbies.

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