

FRANCE

Your favorite restaurants, in less than 30 000 signs

BY JULIEN SIPRA

The 2010s saw the bloom and expansion of a digital economy thanks to a universe of countless platforms like Wikipedia, Amazon, Mechanical Turk, Leboncoin, Airbnb, Uber, BlaBlaCar, etc. These diverse companies grew as mediators between clients and workers for the “gig economy”, represented by an array of avatars, of which bike-delivery names like Deliveroo, Foodora or UberEats are but a few examples. They shoot through the city; a bustling cavalry of wheels and colors whinnying along our sidewalks, galloping through the streets and resting bridled in our parking spaces. The landscape is known, however the bodies are not. What does it actually mean to be a bike courier? Who does it, when, where, how? And what does it mean to be remote controlled by your phone, living at the rate of an algorithm? What do these applications actually apply? An investigation to find out more, reporting from the field, pedals underfoot and smartphone in hand; reporting from the other side of the platform. An investigation as performance...

It started like this: one Sunday evening during a freezing winter, I’m biking to my start zone to “meet up with the community of riders”, that is, after having already clicked a while ago on the button *‘apply now and you can start tomorrow’*. Tomorrow meaning 45 days later. 45 days to upload papers, confirm that I am not a minor and available 13 to 20 hours a week, that I own my own bicycle, that I can be self-employed, and that I made them very *happy with (my) proposed services*, having followed *the link below to take the two-part test: a 10-minute video and a quiz with 49 questions*, having attentively watched the *onboarding video* and prepared for the quiz, passed the test –my score was 41 out of 49 points—then registered for the next step, the *shift essay, where an experienced captain will take (me) under their wing and help (me) to discover (their) universe*, which I also passed, then signed a contract during my *boarding meeting*. 45 days spent wearing out my brakes. But whatever, tomorrow is tonight.

I set out on the route that will take me to my starting point. What am I doing astride this cold bike on a biting Sunday evening in January? Funny enough, I’m going to deliver one order in response to another; a commission I took up along with two other friends from university for the *Conseil national du numérique* (French Digital Council). There are 3 objectives:

1. Identify how individuals perceive, depict and express any difficulties related to digital calculations

2. Identify how algorithms calculate, represent and express individuals by creating collectives and social groupings
3. Determine ways of rendering visible the effects of these calculations in public space

In other words, I'm asked to respond to two questions that are each other's counterpart: "How are we calculated? How do we want to be calculated?"

From which point, one should be more precise, that is, situate and refine. Situate: Establish which space is occupied, define the territory. I think back to the personal bike-delivery service for meals prepared in restaurants proposed on platforms like Deliveroo, Foodora or UberEats. Refine: Reduce the scope of the problem, define the question. I decide to study the relationship established between the delivery person and the algorithm¹. My research, which I'm writing about here, will last 8 months, including 5 spent directly in touch with the algorithm as a courier for an average of 15 hours per week, equally distributed between two companies, Foodora and Deliveroo.

Homo in Machina

So this why tonight I find myself in the saddle. To experience an algorithm. Not only to live the finite and reproducible series of operations that allow you to attain a desired result, which is the first definition of an algorithm as a singular and stable object, but also to experience the many degrees of an algorithm, defined as a network of plural and unstable entities in the line of works by Laura Devendorf and Elizabeth Goodman² or Nick Seaver³. Theoretically, sure, but what does that mean on a practical level?

I find myself putting Donald Knuth's sentence into practice, fifty years after the fact: "An algorithm must be seen to be believed, and the best way to learn about an algorithm is to try it"⁴. To try it, undergo it, practice it, that's what this is about. I especially want to observe the relationship that I will build with the algorithm as well as the spectrum of emotions I will feel or express as I pass through it. Which is why I choose, in part, this ethnographic action, to conduct an experiment in an outdoor laboratory. If algorithms seem to be obscure black boxes⁵ on the outside, maybe, paradoxically, the best way to study them would be from the inside? Homo in machina. I want to experience the algorithm, input-process-output, become its data set, the object of its processing, the result that comes out. I want it to take me and calculate me. That is what I desire, and that is where I'm coming from when I arrive at my destination this January evening and begin my first deliveries.

I'm a few minutes early. Equipment check: smartphone, armband, backup battery, anti-theft lock, thermos pack, neon pink outfit, all apps installed. I'm just missing a patch kit, I hope I won't need one tonight, so far away from home. Especially since I also have no subway pass and no change for public transit if I need it; remember that for next time. I'm ready to work

my first shift. I launch the “riders-only” application, which is different than the one clients use to place their orders. I get geo-located and then I’m *online*. I can only do so because I’ve been located near my zone’s start point, which was defined by the platform and extends out to a 500m perimeter. I am connected. Soon the algorithm will formulate the first instructions and then send me rocketing through this unfamiliar neighborhood. I’m shivering from cold but feverish with excitement. Fervor and shaking. Vibration. A siren. I just got assigned an order. At this stage, the only information I get are restaurant coordinates. I look at the directions on the map, take a mental snapshot of the route, and memorize the address. I put my phone away in a place where nothing can happen to it, yet where it remains easily accessible should I need it to navigate the final meters. I hop on my bike, pedal hard to the restaurant, lock up the rocket, announce an order number to the vendor, get the client’s address, check the map, mental snapshot, hop on, arrive, lock up, verify the client’s identity, hand over the order, validate the delivery.

I’ve completed my very first order. It goes exactly like every other order to come: first step 1, to the restaurant, *PU*, pick-up, then step 2, *DO*, drop-off, over to the client, it’s the same whether through Foodora or Deliveroo, down to a few taps. Now I just need to get some shifts.

A battle of clicks

Whether you’re with Foodora, for whom I was delivering this first evening, or Deliveroo, you have to reserve your shifts. With Foodora, it’s a bit like racing greyhounds: every Thursday at 10:15 on the dot, the schedule for the following week comes out – spanning Monday to Sunday, subdivided into shifts of about two hours on average, that riders can access equally, without discrimination. Everyone, all simultaneously connected to the employee site *shyftplan*, is poised along the same starting line waiting for the gun to fire. The only rule: first come, first served. Useless to try to force the gates open prematurely by frantically pressing F5: they won’t open until it is time. 10:15, on the dot. The race begins. At 10:16, it’s already over. An entire week boils down to just one minute. Here it is in slow-motion: to reserve a shift, you first click on the number of the following week—since the current week is displayed on the interface by default—select a start zone from a drop-down menu that displays the 12 sectors in Paris as defined by Foodora, then pick one of the available shifts which gives a view of the entire week, confirm the reservation and then begin again to accumulate shifts and build up your work week, chopped up into so many puzzle pieces. In real time, it’s a frenzy from which the best emerge with bags full to the brim by a 60-hour week. And the same crazy race repeats the following week. In the meantime, the only consolation prize is picking up the occasional shift that has been dropped here or there.

It took me three tries before I successfully claimed any shifts. The first time, I got lost in the enigmatic ergonomics of the interface. The second time, I wasn’t fast enough, since that’s

what it's about, having a fast connection and clicking reflex. The third time, I managed to score a couple of hours in the wrong zone, far away. So by the fourth time, I successfully reserved about a dozen hours in the zone and the time frame that I was hoping for.

Since it's a real race to reserve shifts, racing the clock and the others, held at a rather inconvenient time of day in the middle of the week, you also prepare for it and experience it like a real race. At 10:15 on Thursdays, I have been in class since 9:30. So I developed a strategy: the night before, set an alarm and check my calendar for the week to come so that I reserve shifts that are compatible with my schedule; the day of, set an alarm for 10am, another at 10:10 and leave the room if I cannot muster the required concentration and discretion. Each person develops their own strategy based on rational and irrational elements that come from real-life experience, advice and legends you hear along the way: computer vs. smartphone, chrome or safari, they say Android is faster; close any programs that are still executing tasks; take as many shifts as possible, no matter where or when, worst-case scenario you exchange or drop them; better to use two screens at the same time; it seems that some people install plugins to refresh pages more quickly, or some people write scripts to automate their reservation. For my part, I open a private window in my browser, try to use the Wi-Fi in the school hall if possible or combine Wi-Fi and 4G on my phone, once the application became 100% mobile. It is possible that none of these strategies have any influence whatsoever. But whether they are true or effective is not really the question here, what matters is how this information, these rumors, provoke an increased emotional intensity related to this primordial phase. While waiting for the starting gun to fire, knowing you're up against competitors who may possibly have the decisive material, technological or strategic advantage, is a source of supplementary anxiety that adds to the fear of a bug, and above all, to the tension inherent to such an essential step, one that, each week, in just a few seconds, determines the fate of one-fourth of your monthly income. Time = money, that is the equation for the cyclist movement. Which accounts for the satisfaction I feel when I get the shifts that I want. And which maybe also accounts for the ritual of comparing the hours you won with others on rider message boards. A chance to show off, announce your total in all caps, ask questions, pick up some advice, and, while admiring the sprinters of click, up the ante for next week.

With Deliveroo, the reservation mechanism could also be compared to a race, but one with a handicap and three starting lines. The schedule is published weekly, on Monday, and riders are restricted in their access, discriminated on the basis of three statistics that are calculated bi-monthly:

1. *the rate of presence*: percentage of reserved time frames during which the rider was indeed connected
2. *the rate of late cancellations*: the percentage of reservations cancelled within less than 24 hours from the time frame in question
3. *participation during peak hours*, on a scale of 12; number of connections during the 6 peaks of the week (20-22h, Friday, Saturday and Sunday).

Based on these three data, and a way they are processed to which riders are not privy, Deliveroo staggers the reservations: first at 11am, the most high-performing riders can access the schedule, and therefore a maximum amount of available time slots, and reserve their shifts; then at 3pm, the peloton gain the same possibility; and finally at 5pm it's the gruppetto's turn. A different reservation system, with division and hierarchy amongst riders, but rather than having to win one race, there are three, with the same rule of first click, first served. Incidentally, I was surprised to find that rumor-spreading occupied a similar place in both systems, although for different reasons, but revealing a common heuristic movement, which inevitably turns our attention to the mysterious regulation behind this part of the algorithm. How do you make it to the leaders of the pack, *to be at 11am*? Depending on whom you talk to, they say it consists of only 10 to 20% of the riders with the best statistics. But what does "best" actually mean? Does Deliveroo calculate a score out of these three data? Using what formula? Are the criteria weighted? Which one counts the most? Most riders will say it's the third: participation during peak hours. Plus, riders speculate that, if all things are equal between two riders, then there must be a fourth, deciding factor, a more official one: the rate of accepted orders—the percentage of the number of accepted orders over the number of proposed orders—which is but a fleeting figure on our screens. And every new, and frequent case of a rider who finds themselves with less desirable hours, despite having better stats than another, offers their own conjecture: what if seniority plays a role? Or the average speed? No, it must be the number of orders that decides. Etc.

Tarmac, luxury and voluptuousness

And so, starting with the shift reservation phase, which is the correlate objective to allocating the quantity of work, the algorithm is already experienced differently depending on whether you work for one or the other platform. If you find it surprising that the algorithm, in my case the delivery algorithm, has this much reach, I think this surprise could be interpreted as a reflection of the thorny exercise in defining it and a clue as to the inherent difficulties of composing with such an object; at the limit of the subjective and therefore changing, perceptible by fragments but on the whole, ungraspable. You have one that purports to be democratic, putting each rider on the same starting line without considering past performance; and another that is meritocratic, positioning each person on a starting grid depending on their history. Which is neither neutral, nor insignificant. In fact, I always thought myself the equal of any other Foodora rider whereas I never felt myself to be of the same pedigree as the 11am Deliveroo riders and their showcase status, as if the calculated hierarchy introduced by the platform contaminated my social relationships. At this point in my investigation, I note this first perceived divergence between the two algorithms and predict that others will arise during the delivery runs. All I have left to do is to confirm this, and so I hop on to my bike.

From a distance, on a superficial level, delivering prepared foods by bike seems to be an inert procedure, one that could be split between the two steps that I described previously: picking up an order from the restaurant and then delivering to the client. But close up, through lived experience, it is a sensitive process. This is how I discovered what Frédéric Bonnet calls the cyclist's pleasure in perceiving the topography⁶. Although I knew that cycling through the city is one of the most "efficient, fast, ecological and economical ways of getting around", I was oblivious to how it also enables an occasion, "for those who love landscapes and the city, to unite the mechanics of effort with the celebration of a strangely poetic form of ground mathematics," and does so because cycling "offers an immediate perception of the context", of the transversal 'profile' of the territory. According to Bonnet, every second re-establishes a specific view of the landscape (levels, the composition of borders and sides, vistas, frames). The speed and direct contact with the environment are optimal for recognizing kinetic variations in the topography, and at the same time, this speed offers a continuous understanding of the 'altimetric variations of "profile in length" that is felt through the change in effort every time the wheel goes around. This kinetic perception of the landscape is a joy, as though the effective and sensorial experience of a place were combined with all the potentialities of drawing.' I was rediscovering Paris once again with new eyes, through an entire body ideally poised to experience in new ways. Like a seismograph, my arms, extending out to my handlebars, could read the irregularities of the street as an aching in my muscles, revealing the condition of the streets meter by meter. As the kilometers wore on, I acquired detailed knowledge of my delivery zones, which I explored like a pioneer, giving me a clear sense of satisfaction, almost pride. Transporter of speed, the fun of inventing routes or finding shortcuts, the masochistic pleasure of exertion, the intoxicating near-exclusive possession of the streets at night, the rapture of suddenly passing, by way of the carriage gate, as though I could open a secret passage with a confidential digital code, from the vulgarity of the streets to the refinement of the courtyard, the jealous vertigo of ascending into a turbulence of luxury, velvet, mirror, perfume and gilding, contributing to the sources of joy described by Bonnet. Opposite this, the anxiety of biking through traffic, the physical and moral exhaustion of being constantly alert, brushes with danger, fear of an accident, the panic of something breaking down, worrying that an order has been damaged, the pressure of the ticking clock, unpredictable income, stress of falling, pain of impact, and an ongoing battle with everything: time, machines, people, myself, the climate, but also the disdain shown to riders by certain restaurateurs who demand that they wait several meters away from the entrance in order to not inconvenience the clients, these are part of the negative associations.

No-go zones and no-zones à go-go

So I learned that the delivery algorithm was far from inert for the rider, on the contrary, it was a vector for and carrier of emotions. If the emotions mentioned so far have been common to both platforms, since they arise more from the practice of biking than from each

respective platform's procedures, I was about to discover that each algorithm contains and admits a host of emotions and their own repertory of attitudes. In other words, delivering for Foodora produces a sensory experience that is different than the one produced when delivering for Deliveroo. Furthermore, and this is one of the major observations in my research, this difference can be accounted for in the ways that each platform organizes the work, and so the algorithm involved is what prescribes a specific experience, one that for the most part, does not overlap between them. More precisely: Foodora pays their riders by the hour, whereas Deliveroo requires that riders piece their salaries together. In this structural difference lies the difference in experience.

I should say a few words now about these two systems, how they define their delivery zones and how they organize shifts. Foodora divides Paris into 12 start zones, and the entire city is a single delivery area. Theoretically it would be possible, and practically it has been proven, that your shift might end far from your starting point, since the algorithm does not restrict riders to delivering only within the range of their initial start zone. Once a first delivery has been made, I could pick up another order outside my zone and thus travel through a large region of Paris following a succession of orders; according to the rumor mill amongst riders, the principal, or only (?) criterion that determines whether an order is given to a rider is that person's distance to the restaurant. At any moment during these shifts, I could contact, using a special *WhatsApp* channel dedicated to this purpose, dispatchers in charge of managing and supervising the orders, and they could contact me. I would write to the dispatchers, a kind of human carpet underneath the algorithm, about a dozen in charge of Paris, to get some information (address details), instructions (client is absent) or for any other need (signal a mechanical problem, turn down an order). As for them, they contact me when they see an anomaly (delay, wrong direction, a step that wasn't validated).

Deliveroo also segments Paris into start zones, but each zone is a delivery area that you should not exit, unless it's for an exception. And so there is no *out of zone*, every rider having been assigned, for the duration of their shift, to one single zone that is well defined and respected by the algorithm. As for the possibility of human assistance, it exists, but its design dissuades users from actually using it: phone numbers rather than chat to speak with *Support Biker*, or else a chat function with a never-ending wait ("you are 139th in line") in order to speak with operators who are basically useless, since they're sitting in Madagascar, according to other riders, hardly familiar with Paris and just copy-pasting templates into the dialogue.

If these clashes seem trivial on paper, looking like mere organizational preferences, in practice they are influential and effective design decisions that prescribe and proscribe. And beyond them lies the question of how much negotiation power is given to the rider, their ability to play with the algorithm, to bend it to their advantage. Indeed, as I realized, being a rider for Foodora or for Deliveroo differs radically, and in part due to the plasticity of the script they use, the margin within the algorithmic machine that the rider has to manoeuvre.

Bandit races, rigged races

During the shifts when I'm wearing the pink shirt of Foodora, I ride steadily, calmed by the assurance that every meter-second is paid. I earn 7,5 € an hour plus an additional 2 € per completed order. Whether I ride as though my shift is just beginning or just about to end makes no difference, I can generally complete two, sometimes three orders an hour, which makes for a slim and rare difference of 2 €. In consequence, I rapidly opt to save my strength rather than make efforts for which there would unlikely be any compensation; especially since I realized early on that my salary depended much more on the platform's general activity than on how fast I could ride (weather, traffic, efficiency of the restaurants, etc.). Working a shift turned into a kind of game of competing with the algorithm to optimize my ratio of revenue-per-spent-calories; and I developed an entire arsenal of strategies with this in mind. For example, if I received an order when my shift was about to end, for instance in the next 10 or 15 minutes, I figured out ways to head back home while pretending to deliver, that is, amongst thousands of techniques, I accepted the order but rather than head to the restaurant, I headed back to my house and then, once in the neighborhood, I would ask the dispatch to assign the order to another rider by claiming I had a mechanical issue, or I would deliver as slowly as possible in order to work past my shift and win a few extra euros, that is, in particular, I would ride as defensively and by the books as possible, and validate the delivery a few minutes after having given it to the client. Another game that is well known to couriers and that I liked to play: *milk the fixed* (as in, fixed hours). Amongst us riders, milking our fixed hours means taking advantage of when things get slow, like afternoons for example, to run errands while on the clock, basically to get paid for nothing; which is only possible because we have a fixed hourly rate. My shining milk-the-fix moment was one sunny afternoon when I prepared an exhibition, a commission and took a nap. Aside from these anecdotes and personal ruses, however, one thing was clearly essential during my Foodora: to have fun. Of course I was delivering, and I was subjected to many parameters beyond my control, but I could go at my own rhythm and practically at my leisure. I rode to ride the algorithm, constantly seeking to optimize my fixed income, fill my hours with easy minutes, and this attitude, this degree of freedom in my movement, was only possible due to the delivery methods specifically put into place by Foodora (hourly wage; accessible and powerful dispatch), its algorithm.

Contrary to this, riding with a green Deliveroo shirt on my back was like trying to beat the clock. The drudgery of the asphalt, I would ride with my head sagging into the handlebars, every push of the pedal driving me to the edge of my nerves. If I didn't have an order, I would ride around, growing feverishly impatient; riders say the algorithm is kind to those who move. I would bike back and forth, eyes staring at my spokes as they counted backwards. As soon as there was a call, as riders say, my back would straighten and I'd hunt for the restaurant. I was clocking my delivery, from the point of departure until arrival. I took countless risks, especially since the Deliveroo zones are small and unsurpassable, and the-

refore more familiar. I hopped onto sidewalks, avoiding using the breaks, laid into the bell. I also found the optimal configuration for my equipment (screen visible while I ride, lock and bags left open) and tried to commit every route to memory. When I got to the restaurant, I first checked whether the order was ready before locking my bike, making it possible to leave straight away if it wasn't, without even having to get down from the bike beforehand. Every moment of waiting that calmly elapsed in pink induced anxiety in green. I also adopted a technique used by many couriers, which was to take a screenshot of the client's contact info after picking up their order at the restaurant and then validate the delivery before actually having dropped it off so that the algorithm registers you as available, that way you can use the ride over to the client's as a chance to receive a new order. Aside from this, I didn't look to negotiate with the algorithm. I tried to satisfy it as quickly as possible. I delivered with tenfold the intensity, stress and excitement, annihilating all patience and prudence. A rider on the run, I was euphoric whenever I could beat my orders-per-hour record, and ready to rage whenever I encountered a slow kitchen or elevator. Since every delivery earned me 5, 75 €, I never avoided one. Besides, my power to negotiate was quite weak, the system made it difficult to get something un-assigned, or at the cost of long and precious unpaid minutes, lost minutes. And since I suspected that on the sly, the Deliveroo algorithm was also taking into account our rate of accepting orders, I was afraid of being assigned less than others.

From algorithm to algorithym

This part of my research, which I have now finished telling, is rather confined in scope, in the sense that it shows a particular truth that applies to me, Deliveroo, Foodora, Paris, January to May 2018. It will never speak to, or it says little about, what it means to be a bike-delivery person as a sole source of income and, considering how quickly systems are updated, it may already be outdated⁷. Regardless, this investigation leads to two general conclusions. The first is that the algorithm, in terms of being a situated object, does not exist. One can never meet it, it is never in the place where it is located, and probably there is no one that can hold it and present it in its entirety. "The delivery algorithm" is an ignored entity that never appears, that is sometimes assimilated to the platform it serves, sometimes to the application that conceals it, and whose parameters, prerogatives, codes, needs, limits and mechanisms are uncertain. I often noted in my discussions with riders that some of them confine it to the instructions received during their shifts, while others also believe it includes the reservation function, and some can stretch it even further, all the way to the recruiting process, and still others believe it encompasses even more functions like geolocation and navigation, run by Google at the time. Hence my desire to extend the notion of an algorithm, and here is my second conclusion, corollary of the first and similar to the movement made by the researchers cited above. My proposition is to call it the passage from algorithm to algorithym, and for the sake of discussion, I'd like to propose a temporary definition for the latter: the conditions imposed by the algorithm, and the processes and effects of such on the entities that stand in

relation to it. Which I believe says what this research says: to connect to an algorithm is to be bound by an algorithm; to deal with algorithms is to take on the algorithm; to interest oneself in an algorithm is to care about the modes of this algorithhythmic life. And from this standpoint, it means to perceive the nuances between two similar algorithms, because, at least with regards to their objectives, they produce algorithhythms that are completely dissimilar.

Translation by Maya Dalinsky

1. This is not the only one I can think of but the only one that I will discuss here. Generally speaking, the survey carried out examines what contributes to the calculation of related parties, but is mainly concerned with delivery personnel, via the algorithm, who work for delivery platforms, throughout the entire delivery process; proceeding chronologically: the 'before' of data and conditions, the 'during' which are the operations, and the 'after' which means results and effects. I made the deliberate choice not to deal with the socio-economic issues raised by these precarious work models, the so-called "Uber economy" or gig-economy. This has already been done many times and in more legitimate form. Readers who are curious to know more can refer to the positions and reports by Collectif des livreurs autonomes de Paris (CLAP) and the cooperative platform Coopcycle, amis.
2. *The Algorithm Multiple, the Algorithm Material: Reconstructing Digital Creative Practice* - Elizabeth Goodman & Laura Devendorf
3. *Algorithms as culture: Some tactics for the ethnography of algorithmic systems* - Nick Seaver
4. *The Art of Computer Programming* - Donald Knuth
5. The metaphor has been on everyone's lips since the publication of *The Black Box Society. The Secret Algorithms That Control Money and Information* - Frank Pasquale
6. *Le cycliste topographe* - Frédéric Bonnet
7. Foodora announced on August 3, 2018, that it will no longer be operating in France, whereas Deliveroo is using, since June, a new wage system similar to that of UberEats, made up of a fixed part and a part that varies depending on the distance.