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Funny bikes: a symmetrical study of urban space, vehicular units and mobility through the voyeuristic spokesperson of a video lens

DANIEL NORMARK, FRANCK COCHOY and JOHAN HAGBERG

This paper presents methodological considerations from a comparative, symmetrical video analysis of cyclist practices in Gothenburg and Toulouse. Video recording pays as much attention to the properties of bicycles as to the characteristics of people; it takes into account the pragmatic and situated dimension and, thus, allows a generalised symmetry. From there, visual methods enable us to submit the collected material to a double treatment of a quantitative analysis of observed bicycles and a qualitative ethnomethodological analysis of bike rental sequences. To better understand the logic and challenges of our method, we present it alongside an analogy with a famous film equivalent – the strategy used by the film-maker Michael Haneke in his heuristic film(s), Funny Games. Despite objectives and content that are obviously completely at odds to one another, the Funny Games film(s) and our own videos share at least five interesting features: twin films, static shots, photomontage, silent films, and rewinding.

INTRODUCTION

In the wake of sustainability, urban mobility and its reliance on the car poses one of the greatest challenges of our time (Urry 2004). In this context, the practice of cycling is currently presented as the mode of mobility that can transform cities into a more sustainable lifestyle. Consequently, we see an increase in studies of bicycle practices (Oldenziel et al. 2016) as well as political incentives, at least on the city level, to encourage bicycle use (Rastogi 2011; Jones 2005; Martens 2007). Inspired by a growing interest within mobility studies on ‘street-level’ mobility – the practices as they unfold – we propose to make a contribution through a methodological reflection on the use of video cameras to unfold the specific performances of the bicycle in situ. We present our methodology, and the challenges we experienced, developed in our investigation of the reconciliation between sustainability objectives and logistical constraints from an international comparison on bicycle logistics practices between Toulouse and Gothenburg (Cochoy et al. 2019; Normark et al. 2018). In the spirit of generalised symmetry, the fruitfulness of a balanced attention to humans (cyclists) and objects (bicycles, accessories, and transported loads) allows us to avoid the double reductionism of sociologism and technologism (Latour 1996), which fosters an examination concerning how social factors and technical factors combine to shift behaviour (cyclist logistics). Both in regard to our empirical example and our methodological challenges, this provides a reflexive starting point to discuss the ways we, as researchers, can approach the understanding of urban mobility from a street-level perspective.

Visual Methods in Mobilities Studies

In mobility studies (Urry 2000, 2007), or what later has been labelled the mobilities turn or the new mobilities paradigm (Sheller and Urry 2006, 2016; Hannam, ...
Sheller, and Urry 2006), a growing corpus has used visual methods to pursue their investigations. The camera, introduced already in the 1970s (with Whyte and Underhill 2009[1988] as one of the most famous pioneers), has been particularly important in empirical works within this research context (see Bücher and Urry 2009; Laurier 2014, in regard of empirical examples, on cyclists see Jones 2005; Lloyd 2016; McIlvenny 2014; Spinney 2010, Spinney 2011). Quite often, these studies replicate and expand the classical understanding of sensing the city through motion (the classical example is from de Certeau 1984 about walking the city; Laurier 1995; Thrift 2004 on driving in the city, and for cycling see; Jones 2005; Spinney 2010). Thus, they contribute to a long tradition from both the Chicago school (Davies 1959) and architects (especially Lynch 1976; Appleyard, Lynch & Myer [1964]) of understanding the world by moving around. Hence:

[b]y immersing themselves in the fleeting, multi-sensory, distributed, mobile and multiple, yet local, practical and ordered making of social and material realities, researchers gain an understanding of movement not as governed by rules, but as methodologically generative. (Bücher and Urry 2009, 103-104)

Like Bücher and Urry, we focus on realities in the making rather than rules and ambitions. These studies provide an overlooked aspect of the embodied and sensuous aspects of everyday life (Pink 2004, 2009). There is an ambitious effort within the mobilities turn to amend limitations in social science by creating new methods that can highlight the sensory, emotional, kinaesthetic, and symbolical aspects of mobility (Spinney 2011, 2015; Lloyd 2016), instead of the traditional fixations with the rational. Several of these studies also include objects in the material world, which include and extend the senses. However, as Merriman (2014) points out, there has been a shift in the discussion on mobile methodologies from approaches for studying mobility to methods on the move (Bücher, Urry, and Witchger 2011). As Law explained (2004), similar to Merriman, these novel mobile methods do have the strength of highlighting previously overlooked aspects, but only with the cost of creating new weaknesses and disregarding features of the phenomena.

Instead of focusing on methods that enable researchers to move with their phenomena, we will return to the Whyte approach of static cameras as a technique to observe mobility, and velomobility, in particular. We especially hope to re-work conventional methods, such as questionnaires and observations (Merriman 2014, 168), through quantitative and qualitative comparative ethnography by using cameras. This simultaneously places the micro-macro chasm into question (D’Andrea, Ciolfi, and Gray 2011) while also addressing the call for quantitative methods within mobilities studies (Manderschield 2014, 213).

As much as objects are part of the emotions of humans (Katz 1999), so are humans, engines, and response systems within the machine-systems of, for example, two-wheeled vehicles. The visual means can also be used to understand the mechanical and systematic approaches to everyday life, such as the details and indicators involved in the mechanics and ethnomethods of making the world accountable (referred to as pre-cognition in Laurier [2004, 2011]). In the following, we present methodological considerations of a comparative survey based on the simultaneous video recording of the bike traffic, observed by two cameras during the same two days in two cities (one in Gothenburg and the other in Toulouse), and focused on two technically identical bike rental stations.

The concern is to ‘frame’ a comparative and localised anthropology not only of rentable bicycles, but also of everything that passes around. Video recordings focus on the properties of bicycles as much as the characteristics of people, and take into account the pragmatic and situated dimensions of the involved behaviour. After the execution of a more detailed presentation of the chosen methodology, the theoretical basis for our decisions, and the challenges of the methods, we successively present the quantitative and qualitative aspects that the video allows us to study. The voyeuristic spokesperson of a video lens enables us to submit the collected material to a double treatment. We are able to conduct a quantitative observation of all the observed bicycles. It seeks to identify the specific characteristics of the populations of cyclists, bicycles, and their loads, and how possible determinants – be they cultural or technical, preceding or situated – shape the observed differences. Furthermore, this first survey evidences significant differences in the use of rental bicycles in both cities (Cochoy et al. 2019). By zooming on this mode of transportation through a qualitative ethnographic analysis of bicycle rental sequences, we are able to study the dynamic of bike rental processes and how the technical system of the rental station is able to channel, standardise, and reconfigure behaviours as well as the involved entities (Normark et al. 2018). We become able to outline both the interest of our investigational device and the results that such a
The interdependency of humans and non-humans (e.g. machines) has been a vivid topic for debate ever since the seminal article published by Rosenblueth, Wiener, and Bigelow about the teleology of systems in (1943). Whether they are in regards to guns, cameras, bicycles, or other systems, most contributions tend to fall into one of the various camps of double reductionism of sociologism and technologism (Latour 1996).

Generalised symmetry, as it was presented in the 1980s (Callon 1986a, 1986b; Latour 1988, 1992a), was an approach to avoid a priori replacement of explanans with explanandum. It was labelled as symmetric because the same methods, questions, and explanations should be used regardless of the outcome (e.g. true/false, logical/illogical). This symmetry principle was initially termed by Barnes & Bloor as a critique of Robert Merton and his focus on Nazis and Soviet science. Bloor argued that, if we were willing to accept social explanations for derailed science, then social explanations should be viable also for successful science. The same methods and explanations should be used when studying both failed science and the creation of established facts.

What ANT researchers proposed was an expansion of the use of a similar language and the same form of explanations to all kinds of agents of representation. The dichotomy between nature/culture or technical/social were also outcomes and not explanations, and should be treated with the same approach of symmetry. This embodiment of facts is not limited to facts of nature – due to the vast network of associations interrelated with the object or human that acts (the actor/actant). Technologies from advanced physical inscription devices to road traffic signs embody representations and relationships. Thus, they argued that the symmetry needed to be extended. The generalised symmetry implied a shift in objective, object of study, and methodology. ANT engages with actants and refers to them in a similar fashion as the spokespersons do.

Following the generalised symmetry postulate, Mike Michael (2000) introduced co(a)gency as terminology that tries to acknowledge the interdependency between humans and non-humans. Co(a)gency is used as a conceptual tool that guides the reader to simultaneously think about ‘on the one hand, distributed, exploded agency and on the other, concentrated, imploded, agency’ (Michael 2000, 42; see also Cohoy 2008; Cochoy and Calvignac 2016; Sayles 2014). While we assume a distributed agency or co-agency, we simultaneously (or rather, ambiguously) need to deal with the assemblage cogency, ‘that is, its convincing power and unitariness’ (Michael 2000, 42).

The human-and-non-human co(a)gent reconfigures the abilities and inabilities of the assemblages: the sum of the parts is separate from the parts themselves. Looking at the assemblage also enables us to study the accomplishments without ascribing or taking for granted a human ascendency. However, even though the co(a)gent is pluralistic, it can simultaneously be dubiously singularised, compressed, and united. The strength (or power) of an co(a)gent is radically different from the strength of the distributed parts that the co(a)gent consists of. As Tim Dant remarks regarding the driver–car co(a)gent:

Neither the human driver nor the car acting apart could bring about the types of action that the assemblage can; it is the particular ways in which their capabilities are brought together that bring about the impact of the automobile on modern societies (Dant 2004, 62).

Furthermore, as these co(a)gents are alternating between being kept together and broken apart, we alternate between judgments on the co(a)gent and judgments on the humans – purifying human action. For example, following the media descriptions of road rage, Mike Michael (2000) showed how the human-non-human co(a)gent is purified into human, even though the hybrid remains implicitly acknowledged. Emotions and responsibility are, thus, appointed to humans and, subsequently, ‘their cultures’, while the cars are deemed innocent of the raging emotions occur. This process of modernist purification is far from innocent, and even though our focus is not road rage, we see that the purification of co(a)gents play a pivotal role in how we address issues of sustainability.

Another important term for us is the introduction of the spokesperson. In an early contribution, Callon (1986a) described the spokesperson as a translator. The seminal article (Callon 1986b) about the scallops of St. Brieuc Bay has often been used as an example in which the scallops (i.e. non-humans) are given agency. However, in his example, the important translators are the three scientists that speak on behalf of the scallops. Similarly, Latour highlights the importance scientists play for Nature as a spokesperson (Latour 1987).
Hence, there is also attentiveness to the identification of spokespersons within ANT. Since ANT focuses on performative – rather than ostensive – stability, it must be explained. In this process, spokespersons are vital (Latour 1987) in, at least, three ways.

First, the translator as a spokesperson is empirically important because it identifies the starting point for the empirical investigation.⁵

The translator expresses … [the ones they speak for] desirers, their secret thoughts, their interests, their mechanisms of operation… [They] determines the identity of these elements and regulates their behaviour and evolution (Callon 1986a, 25).

Herein lies an often-identified critique of ANT that the theory merely replicates the status quo. By identifying spokespersons who previously were powerful inventors, such as Pasteur, this critique misses the shift in the power of agency, even though the same actors are in play.

Second, the spokespersons are well chosen with a multitude of intermediaries. Spokespersons refer to the translation of ideas, inventions, and work as they progress. The circulations from the translator speaking on behalf to the mediators that act as spokespersons on behalf of the translator expand and reconfigure networks. Hence, spokespersons are not only a starting point but also something to trace (Akrich, Callon, and Latour 2002).

Third, spokespersons are also a reflective reminder of our role as researchers. At times, we act as mediators for less literate colleagues (such as plastic bags, cameras, train systems, or dogs). As Michael explains:

We humans can, instead, be conceptualized as the spokespersons of these co(a)gents. Here, the ‘spoke’ dimension of representation is pivotal: it is in the domain of language that these judgements are enacted and warranted amongst casons [car-person], bisons [bicycle-person] and putrasons [public transport-person], and so on. (Michael 2000, 95)

This role of the researcher acts as a spokesperson. Choosing spokespersons to start and follow leads to a responsibility of not only following the obvious topics of sociological investigation but also to see the world from where we study valuation. Mike Michael (MM) elaborates on this point when choosing to study the social role of animals in everyday life by looking at the co(a)gent Hudogledog:

… the valuation of humans, animals and environments. These all become relational entities, whether they entail just a few components as with the Hudogledog, or something more complex like an ecosystem… What the situatedness of these valuations should alert us to – and this is a key, if obvious, point – is their conditionality. As the remark about impoverished stories should indicate, the sorts of interaction (and the sorts of valuation) that were possible for the MM-of-the-Dababug were peculiar to a particular time and place. But this time and place incorporates, through subrelationalities, the characteristics – the fragments of agency and identity – of other networks, not least those of the media with their sensationalist scare stories about dogs. (Michael 2000, 135)

Hence, when choosing two bike rental stations and a focus on cyclists as our spokespersons, or when using a camera as the spokesperson for our method and research, we choose not only to study these objects but also the relations that these entities have to the rest of society.

**FUNNY GAMES, FUNNY BIKES: THE SAME FIVE FILM TECHNIQUES**

To better understand the logic and challenges of our method, we believe that an analogy with a famous film equivalent – the strategy used by the film-maker Michael Haneke in his film(s) *Funny Games* – may prove educational and heuristic.⁶ Despite obviously different objectives and content, the *Funny Games* film(s) and our own videos share at least five interesting features. (See Figure 1).

First, the Haneke film is not one movie, but, like our recording, a set of twin films (hence the parentheses above). The first film was shot in 1997 in Austria, and the second in 2007 in the USA. Apart from the selection of countries, languages, and actors, both films were made in very similar physical places, with exactly the same script, the same frame, and the same temporal sequencing.

Second, one of the key techniques used in the Haneke films and in our movies is the static shot. In particular, the central and most famous scene of *Funny Games* lasts for seven long minutes in front of a static camera (despite a very discreet shift to the left at the end). The third technique is inherent to film-making and is based on cutting rushes and photomontage. Haneke dramatises the associated effects, notably by playing on ‘out of camera’ effects: The drama begins with broken eggs, which are destroyed outside the visible frame of the screen, so that it is impossible to know if the event that triggered the whole story happened by accident or intentionally.
The fourth technique is the silent film. Although Haneke used the method intermittently, it was the essential complement of the 7-min static shot of the central scene, a sequence barely troubled by insignificant comments on a car race running on TV in the background of the living room where it occurs; later, a few tears from the tied-up father and mother are seen in the same room, next to the bloodied corpse of their child. The fifth technique is the use of a rewinding process, as spectacular as it was unexpected. At the end of Funny Games, one of the characters takes a remote control and presses the rewind button to move the action backwards, then replays the scene again (but in this case, with a different ending).

Of course, the content and purpose of the Haneke films and our videos are completely different: creating a fictional story about two psychopaths who terrorise a family for the film-maker (funny games), versus conducting a sociological inquiry about a peaceful cycling practice in our case (funny bikes). We think that it is valuable for researchers using video to study and learn from professional film editors and directors (as exemplified and pointed out by Laurier, Stebel, and Brown 2008). In our case, the film(s) funny games is appropriate because the techniques that Haneke used to dramatise his narrative are repeated in such a way to highlight the tricks of film-making in ways that resemble our objective of making intelligible (reflective) accounts out of activities that unfold within (and outside) of the capturing of the video lens. The similarity of techniques helps us to consider what is possible and to explain our objective and lessons in choosing a camera as our spokesperson for cycling co(a)gents.

Filming the same movie twice in the same way in two different contexts allowed Haneke not only to mock the absurdity of the US pressure for remaking European films but more seriously to highlight both the power techniques of artist direction and the subtle differences made by the contribution of different sets of actors. The use of static shots is a way to intensify the dramatic context, strengthen viewer immobility, and impotence regarding the action that unfolds on the screen, and excite the fear that can occur at any time from the blind angles of the camera (the most dramatic event – the murder of a child – happens out of sight). Editing and playing on ellipses help solicit the active involvement and participation of the viewer to restore the continuity of the story and give meaning to it. The silent film is a way to strengthen the role of the body, flesh, and objects, and to emphasise the close relationship they have with thoughts, feelings, and emotions (both for the characters and for the viewers). The rewind feature is a Brechtian process that helps ward reality from fiction and allows viewers to test the power of images. In our case, the use of the same five techniques is also effective, but of course, with the aim to produce very different effects.

**Interpreting Notes of a Voyeuristic Video Lens**

Armed with our five techniques of a ‘Hanekian’ video – twin films, still shot, photomontage, rewinding process, and silent film – we conducted a qualitative and quantitative comparative ethnography through a systematic observation of our films. By delegating the task of collecting ethnographic data to a camera – i.e. an investigational device deprived of research intentions, but full of enduring attention – the video recording allows an exhaustive ‘note recording’ process; it helps to store all the experienced events (at least in their visual dimensions and from a certain angle), it allows us to postpone their selection and, according to the desired pace and sequencing, the analysis of relevant data. These latter operations are possible with the help of video editing software (Adobe Premiere, in our case). Equipped with such software, the researcher can not only control the flow of bikes, stop, and zoom on what he wants but also select the recorded scenes, extract the corresponding sequences,
and organise them thematically (by distinguishing, for example, borrowing and return operations for each city) before observing them in the selected order. Selecting, cutting, and editing scenes add a thematic dimension to the space unit. Therefore, we can look after all occurrences of the same type of sequence, a strategy that has proved very useful for identifying cross-cutting patterns, observing their variations, and giving them meaning. As a temporal scheme of ‘every first next time’, highlighting both the similarities (that enable us to refer to ‘documents of’ previous encounters of accountability), and differences (that refer to the ‘just-this-ness’ of situated accounts) that are within the core of ethnomethodology (Garfinkel 2002). In addition, the mounting method goes beyond the distinction between ‘analysis of the images’ and ‘image for analysis’ by hybridising the two: the researcher produces not only a film, but a ‘research film’ (Velkovska and Zouinar 2012). In other words, this becomes a film that is a means and not an end, and that paradoxically becomes invisible after the analysis: what we will show is the summary of the results produced through the viewing of the film, but not the film itself. In the following section, we will describe how these techniques were used to study the co(a)gency of the bicycle-load-cyclists.

TWIN FILMS: STREET-LEVEL INTERNATIONAL COMPARISONS

The twin film afforded the possibility to conduct the most robust international comparison possible, but a comparison organised along different principles than those that drive conventional comparative studies (Vigour 2005). Indeed, most international comparisons follow, often implicitly, the idea that such comparisons are necessarily meant to trace a relationship between big, cultural, abstract, and macro-realities, located at the level of countries, major systems, and entire societies. Our idea is completely different. We believe that it is possible to compare what happens in places that are far away from each other, but at a very micro-material and local level, specifically a level located in a very down-to-earth scale, and even at the pavement level. To conduct a more rigorous international comparison of simple geographic places, we decided to systematically study the movement of bicycles from a monitoring apparatus focused on two bike rental stations located in two different, but comparable, European cities: Gothenburg, Sweden (520,000 inhabitants), and Toulouse, France (440,000 inhabitants). The similarities between the two cities are not restricted to the size of their populations. Gothenburg and Toulouse are both regional cities with a growing population, characterised by a large university population and major industries (Volvo, Airbus). Both cities proclaim their vocation to become ‘sustainable cities’. There are also obvious differences, such as dissimilar geographical contexts (a northern port city for Gothenburg versus the Pyrenean Piedmont for Toulouse) and a disparity in terms of age groups, (the population of Gothenburg is older than that of Toulouse). Finally, it seemed interesting to look closely at the local conditions, which govern the well-known differences that may be observed about cycling practices between Northern and Southern Europe (Martens 2007).
The list of similarities and differences can definitely be expanded. We could add cultural details that circulate as stereotypes about inhabitants of the two cities – everything as tokens that strengthen the feasibility that Gothenburg and Toulouse are comparable rather than incommensurable. We know the two cities are not identical – Toulouse is not Gothenburg, and Gothenburg is not Toulouse. Without differences, the comparison would be fruitless, and without similarities, it would be incomprehensible. We also know that our ability to comprehend and grasp all of Toulouse or Gothenburg is as futile as it is to comprehend Paris (see Latour and Hermant 1998). As Latour points out, ‘there are only local summing up which produce either local totalities ("oligoptica") or total localities (agencies)’ (1999b, 19). Hence, the ambition is not to produce a total comparison of the two cities, but rather to assess whether the two cities are good enough for this comparative exercise with regard to a limited number of features. An exercise in which we circulate the reference of urban cycling mobility in two cities to enable us to expand our notions of urban mobility from the ‘just there, just then’, to a more general notion of how urban mobility works (for a detailed investigation on circulating reference, see Latour 1999a; Latour and Hermant 1998).

Shooting similar objects in the same way is a means to understand the social and behavioural differences between the two cities along an all things being equal logic. Filming similar objects in the same way means not only observing two sites in two different cities, but also, for each site and city, observing the repetition of the same scenes, just like the same scenario was played by different actors in the Haneke films. In doing so, the method overcomes a major weakness of ethnomethodological accounts, namely the pointillist and often isolated case analysis. Instead, the repetition of scenes allows us to collect the full range of possible models and to identify their differences and invariant features. (See Figure 3).

As oligopticons, this comparative study both gains something, when we film a site and analyse its inhabitants (whether they are humans or non-humans) and practices, while something is also always lost, such as physics, biology, mechanics, economy, and countless emotional, kinesthetic, and symbolical details. In this case, our argument is that there are enough similarities for us to be able to speak of something similar – even though the phenomena we study are performed in different countries, on different streets, with different bicycles, cyclists, loads, etc. At the same time, there are enough differences that make a comparison between the Gothenburg site and the Toulouse site relevant – the minor differences between them enable us to understand the phenomena better, and the differences mirror something insightful about our co(a)gent(s).

We only know one thing about the similarities and differences in our comparison – nothing in our study could be absolutely identical. The same persons could not be at the two places at the same time, neither could the same technology be used at the two locations (even though the same brand might be present). Nothing is
identical, but a lot was comparable. Hence, it is these comparisons that then enable us to find and analyse the co(a)gents that situate the two field sites.

We chose our observation sites first, to meet our research objectives, and second, to meet conditions that can ensure maximum comparability. Given our concern for a systematic identification of the role of the characteristics of bicycles and their equipment, we focused our observations ‘around’ bicycle rental stations. These observations are centred on these stations, insofar as rental bicycles are one of the major innovations in the area of bicycle transportation at the international level. However, our observations are framed from wide shots in order not to restrict them to rental bicycles only, but instead to capture the overall cycling traffic. We can, thus, compare the use of bicycles for hire with all other types, characterise the demography of co(a)gents, and more generally systematically describe the ways that cyclist practices, technical properties of bicycles, social characteristics of their users, and carried items interact with each other and vary based on the place of observation.

We pushed the temporal similarity of observation to its maximum, since the study aimed to film the two stations during the same period for 12 consecutive hours during the same two days: Thursday, 5 May 2011, and Saturday, 7 May 2011, for a total of 50 h of video recording. For each of these days, our team members located in Gothenburg and Toulouse launched simultaneously, at 7:30 am, two high-definition digital cameras placed in apartments overlooking the two stations (the recording was interrupted at 8 pm). Finally, the technique was perfectly similar, since both rental stations used the bike sharing system provided by the multinational JCDecaux. In both cases, the terminals and rental bicycles were, thus, strictly identical, except for the colour: the bicycles were blue in Gothenburg, and red in Toulouse. Finally, the weather conditions were similar: during both days, there was no rain in Gothenburg or Toulouse. The only difference was the temperature, which varied over the observation period between 6 and 12°C in Gothenburg, and 10 and 24°C in Toulouse (but with a strong wind in the latter case).

When looking at the films from the two locations, many of these anticipated similarities and differences were replicated. When observing the flow of cyclists, hour by hour (through a quantitative approach that we will describe later), patterns of commuting and weekend recreation emerged, as if the cyclists were part of the regular patterns of everyday life. Similarly regarding gender, we see that cycling is more masculine than feminine in both places, with the imbalance being stronger in Toulouse than in Gothenburg: 62% of our sample in Toulouse is made of men, against 53% in Gothenburg, perhaps due to a broader and older practice that tends to erase the ‘physical’ stigma associated with cycling. The observation of (estimated) age is more surprising. Our data show no significant differences between the two groups of cyclists in respect to (estimated) age, for which the individuals who are under 45 years old represented around 85% of the observed population. However, when official statistics of the population of the two cities are mobilised, there is a clear imbalance. Gothenburg evidences a much older population: 40% of the inhabitants of this city are more than 45 years old, against only 15% in Toulouse. In other words, for the first time, the effect of ‘social matters’ deemed to influence social behaviours does not work, and is rather frustrated by the bicycles. The socio-technical requirements of the latter in terms of balance and physical strength seem to be able to reshape the outlines of the population. The findings configure a population of cyclists that resemble but is not entirely identical to, the presumed population of each city; as Latour explains, there is no locality and no micro that is not connected to a macro. The two locations might be small, in relation to the cities that they capture, but they still tell us more about the cities than what is captured within the video lens.

**Twin Film(s): A Quantitative and Qualitative Approach**

Two cameras documenting nearly 8000 instances of passing co(a)gents gave us an opportunity to study the phenomena both quantitatively and qualitatively. Hence, following the twin film(s) technique, we also submitted our material to a double treatment – as a double narrative (of creating both a quantitative observation and a qualitative investigation) alongside each other comparatively as a practical technique of shooting at two locations. Hence, the raw footage from the two locations was used in two distinctively different ways, by adopting the other four Hanekian techniques.

First, we implemented a quantitative observation of the flow of bikes through our observation scenes. Due to a lack of space, we cannot present the genealogy of this type of approach or expose its theoretical foundations. Note that this approach simply consists of submitting the screened observations to an observiaire, which consists of a reading grid that is very close to a questionnaire, and filling the corresponding database. The observiaire has the advantage of being able to save the ‘answers’ of humans and non-humans; therefore, it could comply with the principles of
Symmetrical anthropology on which our investigation is based. Such a database, which provides information over a hundred direct or calculated variables, lends itself to a very large number of treatments whether for descriptive purposes (especially from the perspective of a comparative demographic of co(a)gents) or explanatory ones (finding significant links between these elements: who is using what, where, how, what is the role of the available storage options in the positioning and number of loads, etc.). (See Figure 4).

Then, we took a special look at the bike rental process. The approach is very different in this case. Since this process involves not the type of relatively stable configuration that is observed between the various elements of co(a)gents in motion, but rather a long series of gestures, hesitations, interactions, and reconfigurations with the rental device, the bike, and the other users, we treated this material by means of a more traditional ethnographic qualitative approach, which is more adapted to grasp complex and dynamic behaviours. Following this method will lead us to favour the production of a narrative that enables us to describe singular scenes that can simultaneously relate to the ideal type and the similarities and differences between each (every-first-next-time cases). This method also allows us to better emphasise the effects of the differences that matter.

Both the quantitative and the qualitative treatments of the two films were possible by using the other Hanekian techniques. The repetition of scenes allows the collection of the full range of possible models and the identification of their differences and invariant features. Both for the quantitative and qualitative treatments, the use of static shots is a simple and accurate way to frame observation. The frame arbitrarily cuts the observed scene, but it also provides a clear and neutral manner to define it. This cut allows us to compare the type of behaviour observed in the same terms, from the entrance of a given cluster in the field of observation until its departure beyond its limits. For the quantitative approach, observations were made from a stratified sample of 1,000 co(a)gents, consisting of four quadrants of 250 individuals, each corresponding to a city and a specific day. The sampling principle for encoding clusters of a given quadrant was to select a number of individuals proportional to the flux of each time slot.

Qualitatively, we extracted three separate sets of films that were subdivided into two sub-assemblies, each corresponding to a city (on Thursday only in Toulouse, and two days in Gothenburg to overcome the lack of observable events in the latter case). The first series consists of sequences of incoming bikes, i.e. bikes returned to the locks (16 sequences in Gothenburg; 51 in Toulouse). Each such sequence begins with the appearance of the cluster at the station, continues with the securing of the bike to the terminal, and ends with the departure from the scope camera of the former cyclist, now ‘transformed’ into a pedestrian. The second film gathers the opposite situation: it is centred on the bicycles as they are booked from the station. Thus, it begins with the arrival of a pedestrian who borrows a bike and becomes a cyclist, and it ends with the departure of the cyclist (14 sequences in Gothenburg; 50 in Toulouse). A final film gathers more atypical behaviours, such as dropouts, playful use of bicycles, curious passersby, etc. (79 sequences in Gothenburg; 21 in Toulouse). Each type
of scene is filmed to iteratively observe very similar behaviours. It is possible to mentally superimpose the observations as we superimpose layers and, thereby, extract not only a ‘common core’ but also what overflows this core ‘at the margin’.

To clarify these films, we need to move to the third Hanekian technique – photomontage. One could say that, in the same way that the photomontage is not specific to the Hanek films but rather a feature of filmmaking as a whole, it is the same for research: regardless of the discipline, the subject, and the method, do not all scientific investigations amount to selecting, sorting, and grouping data in a consistent and meaningful way? However, in classical ethnography, sorting information is consubstantial to their collection. Deprived of the ability to record everything, and simultaneously deprived of all means to focus, take a still picture, select the order of the scenes, and address the data along another order which suits him better, the traditional ethnographer, who is equipped with merely his own eyes, a field journal and a pen, has no choice but to observe the situation offered to his visual field, take notes on the spot as the action unfolds, and somehow keep some traces of the disorder and uncertainties that characterise everyday life (albeit often with humour and talent, like in the beautifully-written Attempt at Exhausting a Place in Paris, Pérec 2008). In these circumstances, the chances are great, even for an expert researcher, to miss a few observations (e.g. when two events occur at the same time, but in two distant places), make questionable decisions, e.g. selecting items haphazardly or focusing on the most unexpected and dramatic events, at the risk of neglecting the most ordinary, common, and discrete actions.

These results are inseparable from the feature shared with this Hanekian technique: the use of rewinding. Playing back the film greatly facilitates the analysis. It is even the main advantage of ‘video-assisted’ ethnography: a video ethnographer is able not only to view the same scene as many times as desired but also to replay this scene back and forth, at the most appropriate pace. Slowing the film, stopping it, or even scrolling backwards helps to focus on details; this is the only way to examine a bike in accordance with all its aspects, or to take notes on certain movements that are almost impossible to grasp through direct/immediate observation. Paradoxically, accelerating the film also proves particularly useful to capture the variation in the pace of certain behaviours. It, indeed, dramatises the alternation between actions and pauses and reduces the latency between viewing several similar scenes, which helps the researcher to identify similarities and differences and develop a comprehensive understanding of the observed facts. This was used extensively both for filling in the observaire as well as for the analysis taking place in the qualitative study of performances as they unfolded on screen.

Finally, the silent film feature plays an important role. The originality of our research is to rely on the observation of facts, not fiction. Therefore, directly observable physical behaviours are more important than tracking down ‘representations’ and more abstract and uncertain patterns. Of course, playing a mute material was ideal both due to the inability to capture sounds from a distance and the desire to protect private conversations. Of course, from the point of view of sociology, rejoicing in the lack of conversational data may seem paradoxical, if not absurd. Everyone knows that comprehensive tradition drew a clear demarcation between natural and social sciences, and postulated that, in the latter case, behaviour can be explained through speech, thoughts, meanings, cultural references, and reflective practices, all of which are expressed through language, instead of relying on dumb biological or physical forces that shape the material world. Many sociologists, therefore, find it difficult to believe that one can lead a satisfactory or complete sociology project by way of omitting verbal information. However, in our case, the material in question is silent not only for technical reasons but also for empirical ones: the scenes we see are most often silent themselves, regardless of our ability or inability to record sound. The use and renting of a bike are largely non-verbal practices, most often performed solo; they are transactions that involve the ‘interobjectivity’ between people and things (Latour 1996), rather than the conventional intersubjective exchange between human beings. In such situations, in which practices occur along incorporated routines (Lahire 2011) or physical interactions with the environment (Norman 1993), people act rather than speak, and when they speak, they do so mostly in their heads. Even if interviews or focus groups may later prove invaluable to explain observed behaviour (Fishman, Washington, and Haworth 2012), this type of ‘feedback from experience’ must be handled with care: informants, certainly most often in good faith, do not necessarily remember what they did, how they did it, and why they did it (Thévenot 1993). In our case, methodological and empirical requirements confirm our theoretical bias: conducting a silent observation is the best way to both respect silent scenes and meet the demands of symmetrical anthropology (Latour 1991), which requires dealing with humans and non-human entities in the same way in order to study on an equal footing their respective contributions to the action.
The Co(a)gent of Cycling Practices with Loads

Armed with our observiaire, we can describe and enumerate the characteristics of bicycles, cyclists, and their loads, as we filmed them in both cities, and explore how these elements interact, which we depict further in Cochoy et al. (2019). The majority of the observed co(a)gents had loads attached either to the bicycle or the cyclist, whereas only a minority of the observed networks had loads that were attached to both the bicycle and cyclist. However, in the aggregate, there is a relative symmetry among the co(a)gents concerning the relations between loads and cyclists, compared to that of loads and bicycles. This symmetry in the aggregate and asymmetry on the level of individual networks further underscore the importance of being sensitive to individual variations. A bicycle is not only a bicycle; our precise examination of bicycles, cyclists, and loads enables us to examine the heterogeneity of uses and assemblages, and how this affects cycling practices. A closer look at the cogency of cyclist, bicycle, and load reveals more complex patterns. More precisely, we find that bicycle type seems to determine logistical opportunities. In most cases, most bicycles were equipped for the transport of objects. Unlike pedestrians, who are forced to place everything on their bodies, cyclists benefit from a margin of freedom: they can place objects on themselves or on their bicycles, provided that the objects fit and that the bicycle offers suitable storage sites. At both sites, the type of load appears to be prescriptive in terms of behaviour. In the particularly extreme case of a backpack on the one hand (or, rather, on the back) and one or more shopping bags on the other hand – backpacks seem inseparable from the body, whereas shopping bags appear to be firmly attached to the bicycle.

Returning to the video, as a qualitative ethnographic tool for investigation, we can start studying the bicycle sharing service, which we elaborate in other articles (see Normark et al. 2018). This system is a pivotal device in more than one way: its vehicle is built around a terminal from which it is released and brought back; it offers a transitional compromise between private property and public property; it helps to convert pedestrians into cyclists and vice versa; it opens a gateway to a more sustainable urban transportation and, most importantly, it manages the feat of finally achieving the utopia of a public transportation system without any break in continuity, a system promoters of the Aramis Metro had imagined, but without success (Latour 1992b). Around this pivotal point occurs the acclimation of pedestrians to cycling practice, and the conversion of former cyclists to a more spontaneous, casual, and freer bicycle behaviour. Hence, rental bicycles are not only the vehicles observed as a feature in the cycling cohort, but they are also the terminals, just like the public transport system would not exist without its stations and bus stops. By looking at the films in detail, we could follow the transformation taking place as pedestrians with shopping bags transformed into cyclists with loads on the bikes. Here, the qualitative material can reveal the production – and recognition – work that the co(a)agents do in order to accomplish the networks that the quantitative material could identify.

DISCUSSION: SYMMETRICAL DISINTERESTEDNESS

By delegating the task of collecting ethnographic data to a camera – i.e. an investigational device deprived of research intentions, but full of enduring attention – the video recording allows an exhaustive ‘note recording’; it helps to store all the experienced events (at least in their visual dimensions and from a certain angle), and it allows us to postpone their selection and, based on the desired pace and sequencing, the analysis of relevant data. As such, the video lens becomes the spokesperson for cycling and bike rental practices by capturing what it can observe. Herein lies the strength and the weakness of the project – the camera enables analysis, but also forgets that which it cannot capture (such as emotions, incentives, detours, etc.). The video lens is an ‘oligoptica’ with total attention to the visual within the frame at the cost of total ignorance for everything but the visual out of the frame.

However, attention and ignorance is symmetrical. The video lens pays as much attention to bags that move as it does to humans – it adopts a generalised sympathy that we, as humans, have difficulty accomplishing. It provides a symmetrical disinterestedness that allows us to treat humans and non-humans in the same way – or to analyse Gothenburg the same way as Toulouse. It also allows for the double treatment of the practices we studied. Through the video lens, both bike rental practices and cycling practices unfolded in ways that allowed both observiaires and ethnomet hodological analysis of ethnomethods.

In this case, our argument is that there are enough similarities for us to be able to speak of something similar – even though the phenomena we study were performed in different countries, on different streets, with different bicycles, cyclists, loads, etc. At the same time, there are enough differences that makes a comparison between the Gothenburg site and the Toulouse site relevant – the minor differences between them enable us to understand the phenomena better, and the differences mirror something insightful about our co(a)gents.
Hence, the research project is reflexive in the sense that the notions of co(a)gency and generalised symmetry apply not only to our research subjects – the bicycle (rental or not), the bike rental station, the terminal, the cyclists, the transforming pedestrians/cyclists, and all the different loads and container technologies – but also part of our understanding of our methodological approach. We are a research formation (instead of a mobile formation) consisting of several co(a)gents computer-database-screen-software-researchers-with-video-films (created by the video lens spokesperson in 2011). This assemblage of humans and non-humans, though a performative process, create a text, images, and films that, in turn, hopefully become a spokesperson for an understanding of sustainable vehicles.

Here, the techniques displayed in the Haneke films were useful as a rhetorical tool that reintroduces the affective dimension of moving images (Lorimer 2010) into the disengagement of the embodied and sensory experience of mobility (Spinney 2015). After all, watching Funny Games is a very emotional (and upsetting, thrilling) experience. Hence, we hope to make use of the possibility of utilising these more-than-representational dimensions in our study of velomobility by using a static camera to study mobility. This is reinforced through our ignorance towards text and talk in our study – seeing that there is enough said within that which could be seen. Thus, we hope to have provided a methodology that transgresses and combines the quantitative and qualitative aspects within mobilities studies.

The bet of this article was to prove that video-assisted methodology could track key aspects of cyclist logistics, whether with rental bicycles or personal bicycles. Beyond that, this type of method is particularly suited for the sociological analysis of technicised behaviour. Based on similar videographic data on biking behaviour in two relatively similar places, we wanted to see not only if people use their bikes whether or not they are loaded but also the relationships that develop between the types of bikes, the types of loads, and human behaviour, in order to capture some determinants of forgotten aspects of urban logistics.

The practice of statistical ethnography was used to assess the extent to which cyclist behaviours are subject to ‘classic’ sociocultural influences. Therefore, we wanted to provide an approach with a symmetrical disinterestedness not only to humans and non-humans, but also to the micro and macro distinctions in social science, showing that they are replicated within each other. It also revealed how these behaviours are inflected and redefined by technical agencements (characteristics of bodies, bikes, and loads). The qualitative analysis showed that the bicycle sharing service is a powerful machine of sociotechnical reconfiguration: this vehicle individualises pedestrians by forcing them to reorganise their business and develop a strange temporary fixation accompanied by new rituals. In the end, it appears that bicycle rental stations, far from being an equivalent of other means of transportation (pedestrian, car, bus, or even personal bicycle), seem to have the ability to reshape significantly observable behaviours of urban logistics.

All these results lead us to wonder, at a more general level, if the thoughts and actions aimed at converting cities into more sustainable models should not focus on these small, sociotechnical arrangements that are largely neglected, even if they obviously still build our everyday urban experiences.

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**NOTES**

[1] As such, the mobilities turn share similarities with the challenges of research methods in general within social science. See Law (2004).

[2] Society, for example, should in this sense be something that must be explained (explanandum) rather than something that explains (explanans). Hence, the actor-network theory echoes the arguments portrayed by Gabriel Tarde a century ago see Latour (2004).

[3] The symmetry postulate was described in Bloor (1991 [1976]) and featured in several books and articles within the sociology of scientific knowledge (SSK). Bloor later wrote: ‘Both true and false, and rational and irrational ideas, in as far as they are collectively held, should all equally be the object of sociological curiosity, and should all be explained by reference to the same kind of
cause. In all cases the analyst must identify the local, contingent, causes of belief (Bloor 1999, 84).

[4] However, many of the scholars in SSK are sceptical to this expansion of this principle, see e.g. Collins and Yearly (1992) and Bloor (1999).


[7] Of course, we deliver here a degree zero presentation of the film, which is also an experiment and a critique of violence, and much more than that. But this short naive presentation is enough here, because our goals have nothing to do with those of Haneke.


[10] Our investigative method is consistent with the law that allows shooting in public spaces, provided we do not broadcast the pictures without permission or anonymisation of the concerned persons.


[12] For further information, see Canu, Calvignac, and Cochoy (2014) and Cochoy and Calvignac (2013).

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SUPPLEMENTARY MATERIAL

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ORCID

Franck Cochoy @ http://orcid.org/0000-0002-0382-5660

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