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Routledge
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Capturing Gendered Mobility and Street Use in the Historical City: A New Methodological Approach

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ABSTRACT

While in the social sciences everyday mobility and street use are seen as central to the understanding of urban societies, in the work of historians these phenomena only play a limited role. Building upon methods from related fields and using digital tools, this article proposes a new methodological approach to study historical mobility and street use. This 'snapshot approach' facilitates intercultural comparability and creates possibilities for systematic spatial analyses. We propose it forms an important tool to enhance our understanding of gendered urban experience in the past .

Introduction

How did people navigate the streets in cities of the past? Where did they go? At what times of day did they make their various excursions? What routes and shortcuts did they take, where did they linger? To what extent did everyday street use differ according to the local urban infrastructure and to personal characteristics such as gender, social status and age? We still lack answers to these important questions despite the blossoming of urban history and the history of the everyday; in fact, many recent studies on everyday life in historical cities omit consideration of such questions. Urban planners, sociologists and geographers may traditionally have made intra-city mobility and street use central to their analyses of urban life, but only recently have historians begun to pay attention to these phenomena and their relevance to understanding wider issues such as urban dynamism, work and leisure patterns, and social and gender equality.[1]

The popularity in history of mobility studies notwithstanding, most historians tend to focus on mobility's more visible forms: long-distance migration, for example, or inter-city movement.[2] The few studies on everyday mobility largely centre on relatively modern modes of transport, including cars and bicycles.[3] Due to their transformative power, evidence on these modes of transportation is abundant, for instance in the form of newspaper reports and travel statistics. The rejuvenation of the history of the everyday has an important urban component that would ideally involve the study of quotidian

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patterns of movement. Nevertheless, here studies tend to centre on the domestic environment and ask questions on how people lived in and around the house rather than on how intra-city mobility and vice versa shaped their everyday lives.[4] Again, perhaps we can understand this emphasis in light of the relative (!) ease with which the domestic everyday can be recovered: much of the recent research integrates studies of material artefacts, extant buildings and textual and visual sources, providing various windows into the homes of the past and people's lives within them.

By contrast, the reconstruction of routine movements through a historical city presents historians with a more challenging task. Because short trips in the city for work, leisure or other everyday purposes are commonly understood to be ordinary and unremarkable, they are not usually recorded in historical sources. Indeed, what strikes the few historians who have attempted to reconstruct urban mobility before the 20th century generally is the *absence* of references to such practices in the archives.[5] Moreover, in contrast to scholars who study the present or the fairly recent past, historians looking further back cannot interview or survey their subjects on their mobility practices and cannot make observations on streets and in public squares, as is common in the social sciences. Material evidence related to historical street use is available and may reveal part of the story: think of the canes, pattens, carriages and palanquins in museum collections and the (remnants of) street furniture of the past within urban landscapes, including benches, lanterns and spy mirrors.[6] Nevertheless, as with the history of the domestic environment, these types of materials would need to be complemented and contextualised by other evidence if we are to arrive at a comprehensive understanding of historical practices of street use and mobility. Despite these challenges, we argue that there is no need to be pessimistic.

In recent decades several exploratory case studies have shown that a range of possibilities allow for the reconstruction of historical street use. Following Barbara Hanawalt's pioneering work, which used coroners' reports of accidental deaths to analyse the scope of mobility of boys and girls in Medieval England, scholars have adopted similar approaches to study the radii of movement and forms of street use characterising early modern urbanites in cities such as London and Norwich.[7] Another strand of research has employed more direct evidence of street use in their reconstructions of the historical street. Examples are Katherine Rinne, Elizabeth Cohen and Lynda Nead, who have each created almost ethnographic vignettes of street life based on a wide range of visual and textual sources including drawings, maps and newspapers.[8] Other researchers have studied diaries, letters or court depositions and used either close reading techniques or quantitative analyses to reconstruct both the scope and the experience of people's street usage.[9] These examples show that the methods currently in use allow us to pick up on mundane activities taking place in the street from well-known and widely available primary sources. However, what we lack is a way to systematically and comparatively study intra-city mobility and street use.

Current studies offer two different types of knowledge on the subject. On the one hand, we possess detailed information of the workings and uses of particular pockets of urban space, which have been illuminated by ethnographic micro studies. On the other hand, we have more general ideas of what street use must have looked like in several historical cities, based on models that, with varying degrees of accuracy, allow us to infer patterns of urban movement. To come to a comprehensive understanding of actual street

use in the historical city, we need a new approach that merges the evidence on spatial practices derived from personal accounts (such as witness testimonies, letters and diaries) with insights gleaned from models that integrate maps, urban infrastructures and deductions from circumstantial evidence.[10] Ideally, the next steps in the study of historical street use would also involve a significant scaling up: not only via the collection of larger quantities of information from a different range of sources, but also through the incorporation of evidence from multiple geographic contexts (on either the level of streets or neighbourhoods or that of cities as a whole) so that the results would facilitate a systematic comparative analysis of street life in cities in the past. Here we propose a new methodological approach to systematically capture and analyse everyday urban mobility and street use in the distant past. But first, let us look more closely at *why* we would need a better understanding of street use and mobility in the historical city.

The importance of understanding practices of everyday urban mobility is abundantly clear to social scientists. The study of travel routes and routines, as well as various forms of street use (loitering, walking), has generated important insights into 21st-century challenges such as ecological sustainability, urban design, inclusivity, public safety, and equality.[11] For historical contexts, a better understanding of everyday street use could help illuminate a range of phenomena including work practices, leisure patterns, economic clustering, surveillance and control, and the impact of urban growth and technological change on people's daily lives. It may also help answer one of the most debated questions in both urban and gender history: To what extent did women disappear from street life as cities entered modernity?

Historians and feminist scholars have long grappled with this topic. Most scholars now agree that there was no linear declining trend in women's urban mobility and street use from the late Middle Ages onward until the rise in such phenomena during the second half of the twentieth century. Nevertheless, we still lack a precise grasp of how women used the street in various temporal and geographical contexts and what factors influenced gendered urban mobility.[12] Such understanding is important, because gendered street use informs us about adherence to social norms, about patterns of sociability, work and religiosity, and about issues of agency and freedom. Indeed freedom, precisely, is often associated with high levels of mobility in debates about gendered mobility. Yet frequent mobility might also indicate despair, poverty and necessity: as workers, poor women often travel much further than more well-to-do women, who may not work as wage earners and may also decide simply not to leave their houses.[13] Until we know more precisely where individuals travelled to in their cities and for what reasons, we cannot be certain whether their movements were by choice. The widely repeated notion that large numbers of women in the street equals freedom for women has yet to be proved for many historical contexts.

Uncovering how urban change affected the lives of women is the primary concern of this paper's authors, who, as part of a larger team, are investigating the relationship between gender and urban space in Eurasia between 1600 and 1850.[14] The project asks questions that have hitherto remained largely unanswered: How did women move through cities? Where did they go, when, and with whom? What activities did they undertake in the streets? How do these patterns differ according to social status, wealth and age? How does women's street use compare to that of men? And finally, does female mobility change as cities enter the so-called modern era?

The core of the project is a comparison of two cities in Eurasia, each possessing urban structures, legal systems and gender norms distinct from the other: Amsterdam and Edo (present-day Tokyo). Scholars have traditionally seen European and Asian cities as fundamentally different, and this difference provides an interesting starting point for investigating everyday urban life and the factors that shaped it.[15] However, recent studies have instead argued that the experiences of city dwellers in Europe and Asia increasingly converged during the early modern period, and, moreover, their authors have pointed to similarities in urban women's experiences in East Asia and Northwestern Europe.[16] Edo and Amsterdam provide excellent case studies not only because each in many ways fits the respective models of an 'Asian' and a 'European' city but also because each offers wide-ranging and abundant source material on street life. For the two cities we aim to map gendered street use and everyday movement in order to relate urban space usage to the built environment, gender norms and urban legislation. Our objective is to uncover how women used outdoor urban spaces in diverse urban settings in the run-up to modernity.[17]

We deliberately study patterns of movement together with more immobile forms of street use. As others have argued, streets have a dual nature: they can be seen as both transportation spaces and living spaces.[18] People move through streets to go from one place to another, but the streets they traverse may be used for purposes other than transportation: socialising, working, storing goods, even sleeping. According to Carmen Gruber and her colleagues, the street 'can be seen as a complex set of mutual interactions'.[19] For the study of women's relationship to the street it is paramount to include both mobile and static uses in the analysis, as doing so allows us to investigate how the static presence of certain groups of people in streets affects others' opportunities to traverse these spaces, and vice versa.[20]

Towards a systematic analysis of spatial practices: a snapshot approach

In developing a method that enables a systematic exploration of spatial practices in historical cities, we are able to draw on important work undertaken within the fields of cultural history and economic history. In recent years, cultural historians have developed 'praxiography' to study activities and practices in places previously reserved for analysis of discursive structures.[21] This method has successfully been applied to the history of the body, where it has shown how discourses of the body do not automatically overlap with bodily practices. This insight has allowed the study of historical bodies as enacted entities, causing attention to shift from what the body is to what it does.[22]

Concurrently we find a separate but remarkably similar move towards the study of practices in the discipline of economic history, springing from the need to uncover evidence about the work patterns of women, which tend to remain invisible when applying traditional methods that focus on occupational labelling and the examination of tax registers and guild records, from which women are largely absent. Sheilagh Ogilvie, who used church court records to investigate gendered work practices in early modern Germany, pioneered this method. Using court records to find out more about the social and economic aspects of women's lives in the premodern period was not new per se: many previous historians of women had turned to these sources to illuminate the experiences of women in pre-industrial societies.[23] But Ogilvie was the first to apply

a quantitative approach to these types of records, which had mostly been used qualitatively. Adopting a method that she later, in an article co-written with A. W. Carus, dubbed 'micro-exemplary', she combined qualitative and quantitative methods to study gendered patterns of work.[24] In practice, she extracted nearly 3,000 observations of work and work-related tasks from church court protocols ('snapshots'), which she included in a database that allowed her to analyse work activities according to gender, age, and marital and social status, as well as to study changes over time and geography. While her purpose was similar to that of the cultural historians who developed praxiography, i.e., studying practices over discourses, her method differs from theirs and adds an important innovation: the systemisation of what is generally perceived to be scattered and unsystematic evidence. As Ogilvie rightly states, such quantification and systemisation is crucial to understand human behaviour in the past, as it allows us to see not just what is possible but, more importantly, what is typical for a given society.[25]

Inspired by Ogilvie, and expanding on her method in a number of ways, two groups of scholars in recent years have enhanced this methodology of 'turning qualitative into quantitative evidence': the Women's Work in Rural England project at the University of Exeter led by Jane Whittle, and the Gender and Work project (GaW) at Uppsala University led by Maria Ågren.[26] The latter project made an important conceptual contribution through its development of the 'verb-oriented method'. This method focuses on collecting information on the ways people used their time to make a living – paid and unpaid – by capturing verbs instead of nouns. While not diverging greatly in essence from the method applied by Ogilvie, they do make explicit for the first time that for histories of work, 'nouns', in the form of occupational titles, obscure the everyday realities of people's working lives. As the GaW project convincingly argues, what is considered work may vary according to time and space. To be able to study work patterns over longer time periods and across geographic contexts one's method must allow one to stay close to how people actually used their time, and verbs, more closely than nouns, capture the range and frequency of the tasks that people actually engaged in.[27] This observation is crucial for our purpose: as we aim to enable systematic and comparative analyses of street use, we must focus on capturing *actual* activities.

To systematically study everyday spatial practices we need three further adaptations to the approaches developed by Ogilvie, Ågren and Whittle and their teams. First, it is crucial that we include all activities mentioned in a source, not just work. We want to understand how people used the street for socialising, leisure and religious purposes, as well as making a living. Second, it is vital that we systematically record not only who was involved in what activity, but where in the city this activity took place. Instead of collecting essentially dualistic snapshots of urban life (individual – event), which was the main aim of the projects on women's work, we move to gathering snapshots that reveal ontological triads of individual, event and location (Figure 1). Taking together all snapshots linked to a particular location and occurring at a specific moment, we capture a scene of street life that resembles a photograph one might take of a street.

Third, we will expand our source base to capture the street activities of a wide range of people and in a variety of locations. Until now, court records have been central to this sort of methodology. The sheer quantity of materials and the level of detail in the protocols make them exceptionally useful for the study of daily life. Whittle and Hailwood hail the opportunity to use them for 'random spot observation', as they record
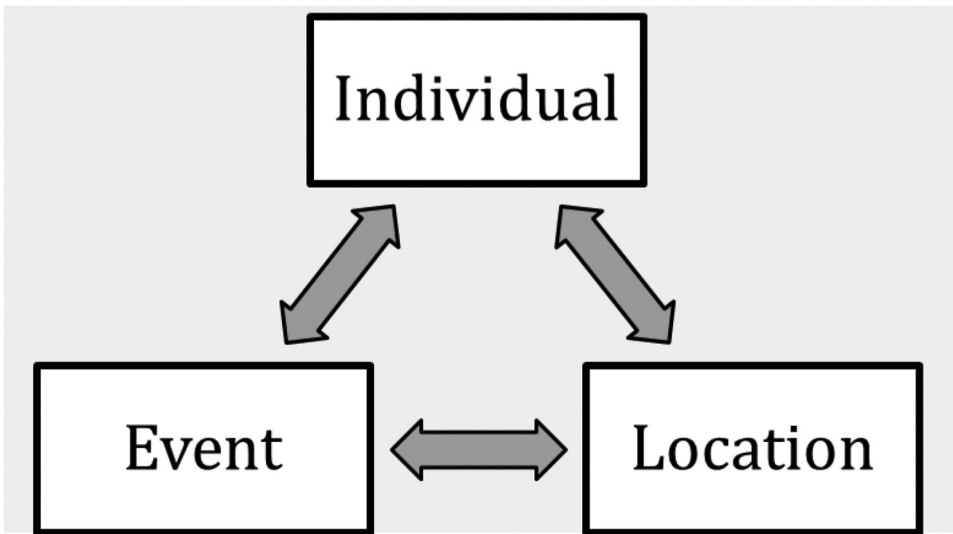
Figure 1. The ontological triad that forms a 'snapshot'.

'what particular individuals were doing when something – a crime, misdemeanour, or accident – happened'.[28] However, when it comes to enhancing our understanding of street use and everyday mobility, court records also have significant shortcomings. They tend to include evidence on particular groups in society to the diminishment or exclusion of others, thereby foregrounding the experiences of individuals from the lower and middle strata. This bias is clearly illustrated in the geographic coverage of individuals' residences in the accounts of the chief prosecuting officer in Amsterdam, an important source for our research project (Figure 2).[29] Because these records include all investigations by the prosecuting officer, not simply the instances that led to arrests, prosecutions and convictions, they contain information on people representing a greater social diversity than what we find in many other court records.[30] However, as one can glean from the uneven distribution of observations on the map, elite groups rarely make an appearance even in this relatively 'socially inclusive' source material. Indeed, while Amsterdam (unlike Edo) did not institute spatial social segregation by law, it did have areas that were more affluent than others, most strikingly, of course, the formidable canal belt. In the map in Figure 2, the canal belt provides only a small number of observations. Instead, most individuals included in the witness statements resided in the old city's densely populated areas (in the centre around the river and Dam Square) and the newer working-class district Jordaan.[31]

To illuminate practices of mobility among the elites, we also include diaries, sources that have been studied to capture everyday mobility but never in the systematic way proposed here.[32] Diaries, moreover, provide an opportunity to study individuals' movements in the course of a day or over longer periods of time, even, on some occasions, over a lifetime. Our initial exploration of such materials has already convincingly shown the potential of a systematic approach to studying street use and mobility through diaries. In a comparative analysis of two diaries by residents of Edo, a woman from an elite samurai family (Kuroda Tosako) and a male neighbourhood chief who
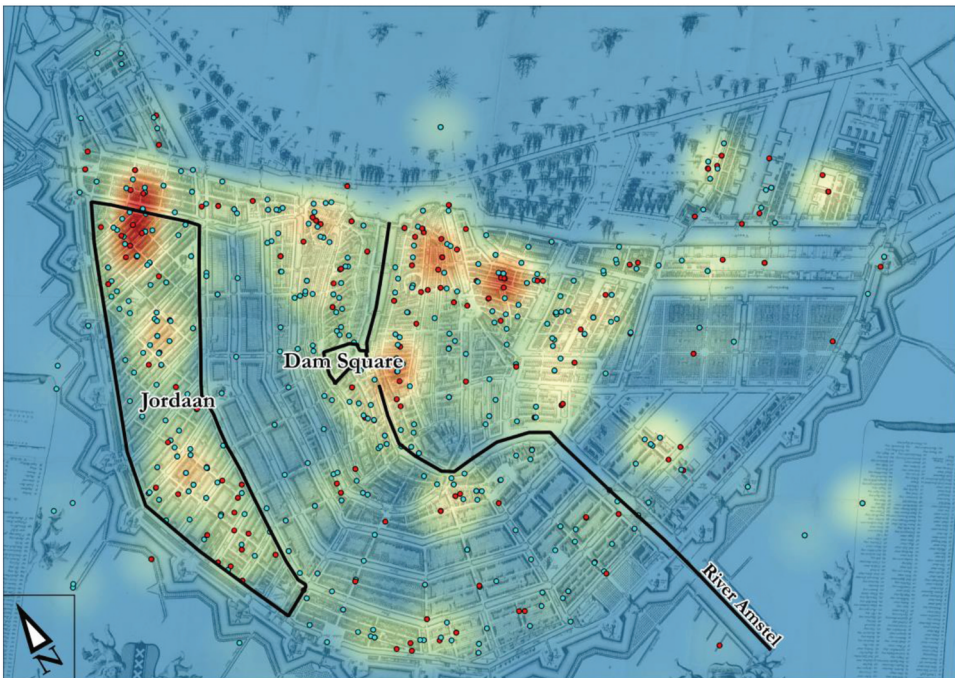
Figure 2. The distribution of residential locations of witnesses in the depositions to Amsterdam's chief prosecuting officer in 1742 and 1750, with observations of women in red and observations of men in blue (n = 1799).
 Source: NL-AsdSAA, Archief van de Notarissen ter Standplaats Amsterdam, inv. nr. 11734 & 13131

ranked among the upper strata of the commoner class (Saitō Gesshin), we were able to trace their movements over extensive periods of time. The resulting insights from these and other diaries highlighted patterns of everyday mobility and street use as it evolved not only over the seasons, but also across different phases of the lifecycle.[33] For Amsterdam the study of a diary by Aafje Gijssen, a young woman from a nearby town who regularly came to the city to visit friends or to shop, allows us to track her daily movements over three years while she was in her early twenties. It indicates how in the late eighteenth century young Dutch women from the middle strata and urban elites took to the city streets, unchaperoned, for leisurely strolls.[34] Diaries thus form an important addition to court records, which tend to include only single observations for each individual mentioned in the source. It is true that the large number of individuals included in court records enable the compiling of 'composite biographies' of individuals whose mobility and street use we could reconstruct over the course of what might constitute a typical day, year or lifetime. Moreover, it being standard practice in the Amsterdam notary records to register the home address of witnesses, we can reconstruct the scope of movement for individuals by comparing residence locations to the sites of the crimes and conflicts that led to their interrogations by the chief officer.[35] However, by combining diaries and court records we ensure a larger coverage of socioeconomic groups as well as greater precision in capturing movement and street use at various points in time.

This project's next phase aims to expand the source base even further. The snapshot approach is particularly suited to sources meant to be snapshots of everyday city life: streetscapes. Earlier studies on street life have proved the immense value of visual materials for the understanding of historical usage of urban space.[36] Moreover, these visual sources can be read in a manner similar to the sources discussed above: as long as people are depicted in sufficient detail and the location can be clearly established, one can untangle the image according to the ontological triad proposed above and identify which people are included in the scene (based upon gender and their appearance, for example) and what activities they are engaging in. A recent study of early photographs of Vienna proves how insightful the systematic unpacking of such materials can be. It shows changes not only in the urban environment but also in street activities: street sweepers, for example, disappear from photographs when other types of street workers such as shoe polishers and bill posters make their appearances.[37] According to the authors, it is precisely the systematic analysis of multiple photographs over a longer period of time that makes these developments visible.[38] Photographs are often considered to be more 'objective' than paintings, drawings or prints, materials that are more common for our period of study. Due to their artistic nature, the latter are also generally seen as being less reliable sources than written materials. However, as is now well known, problems of bias and the (deliberate) misrepresentation of everyday realities are also present in other sources, including diaries and court records.[39] One could argue that every source type shows street life through a particular 'filter'. As with the study of sources more commonly used in the study of daily life, it is important that the evidence derived from visual materials is crosschecked with information from other sources. In selecting materials for our project, we will therefore prioritise series of visual sources that are widely known for the accuracy with which they depict everyday urban life.[40]

Finally, while it is important to acknowledge the tension between representation and reality, our methodology also allows for a deeper understanding of how these sources relate to one another and to the lived experience of historical actors.[41] We apply the same method of capturing snapshots to a wide range of primary sources. By layering all these snapshots of street use onto a single map of the city under study, we are able to compare the results deriving from different source materials and establish the extent of their overlap. This process may result in a confirmation of our hypothesis that some sources more closely depict the actual practices of street life than others, but it also gives insight into divergent forms of usage adopted by different social groups, in different temporal contexts or at different spaces in the city. To be able to achieve such a granular, differentiated picture we need to systematically record large quantities of snapshots in the same format: to this end we employ a database structure newly developed for this project, to which we will now turn.

The FOSGUS database

To design a database that meets our project's main requirements, we have drawn inspiration from earlier projects, such as Digital Harlem and DECIMA, which aim for a systematic integration of mobile and static elements (i.e, people and the built environment) in their study of urban life in the past.[42] However, these earlier projects have largely been devoted to static observations of city life and mainly register activities that

took place indoors. Our project database, by contrast, needs to facilitate the recording of individuals' movement through space and time, in a way similar to the time-space geography first developed by Torsten Hägerstrand in the 1960s.[43] It also should capture and map activities that occur in exterior urban spaces and, as such, should engage with the challenges of mapping streets and pavements familiar to critical geographers who study street hawking such as Annette Miae Kim.[44]

Another important difference with previous projects mapping historical city life results from the comparative nature of the project, which necessitates that the database, in capturing and classifying the observations of street life, facilitate data entry and classifications applicable across different cultural and temporal contexts. To this end, we resort to a common language (English) for classifying our data, whilst at the same time, in registering activities in the database, staying as close as possible to the original sources.[45] This facilitates comparative research but ensures as well that the original meaning and context do not get lost in the process of data analysis and presentation.[46] Such an approach is particularly pertinent to a project on gender and space in the past. As several historians have argued, analysis of the gendered usage of space has long been hindered by the idea of a stark and strongly gendered contrast between public and private spaces. But scholars have instead found that although concepts such as public and private did play a role in historical discourses about space and gender, the premodern experience does not always match the classic dichotomy between male public and female private spaces.[47] Therefore, we argue that our analysis benefits from such categories being replaced by empirical categories emerging directly from our source materials. Here we follow in the footsteps of work by Ogilvie and Ågren and her team.

In collaboration with system developers at Creative Amsterdam: an E-Humanities Perspective (CREATE), we have developed a database that allows us to capture snapshots of street use from a variety of sources and layer them onto historical maps of the cities under study.[48] In developing the database we made provisions for our inclusion of observations from different types of materials, for different cities, and by different researchers. Each researcher has a dedicated portal and when entering information chooses the city for which information will be entered. All data are connected to their respective original sources through a (perma)link and/or a corresponding file, so as to avoid problems of decontextualisation and, furthermore, to allow for quality control of the data and, where necessary, revisions.[49] Free text fields are available to include transcriptions of the sections of the sources that are relevant to a particular snapshot. For visual sources, we have developed a tool that allows the annotation of snapshots with regard of an image. Here, to capture a snapshot, we formulate verb phrases based on the depicted activity.[50] As in the case of textual materials, doing so here means adding a layer of interpretation. However, by linking and storing together the section of the image described and the verb phrase that captures the activity depicted, we ensure that (future) users of the data will be able to check the verb phrases against the original.

Figure 3 illustrates the various categories that can be used when entering in the database the ontological triad of individual, location and event. These three categories form the three primary types of data with unique IDs that together make up the snapshots. In some cases our sources are very rich in detail and (nearly) all secondary categories can be filled in; in other cases we have only limited information. Each primary data type requires at minimum the inclusion of a description of the individual, the
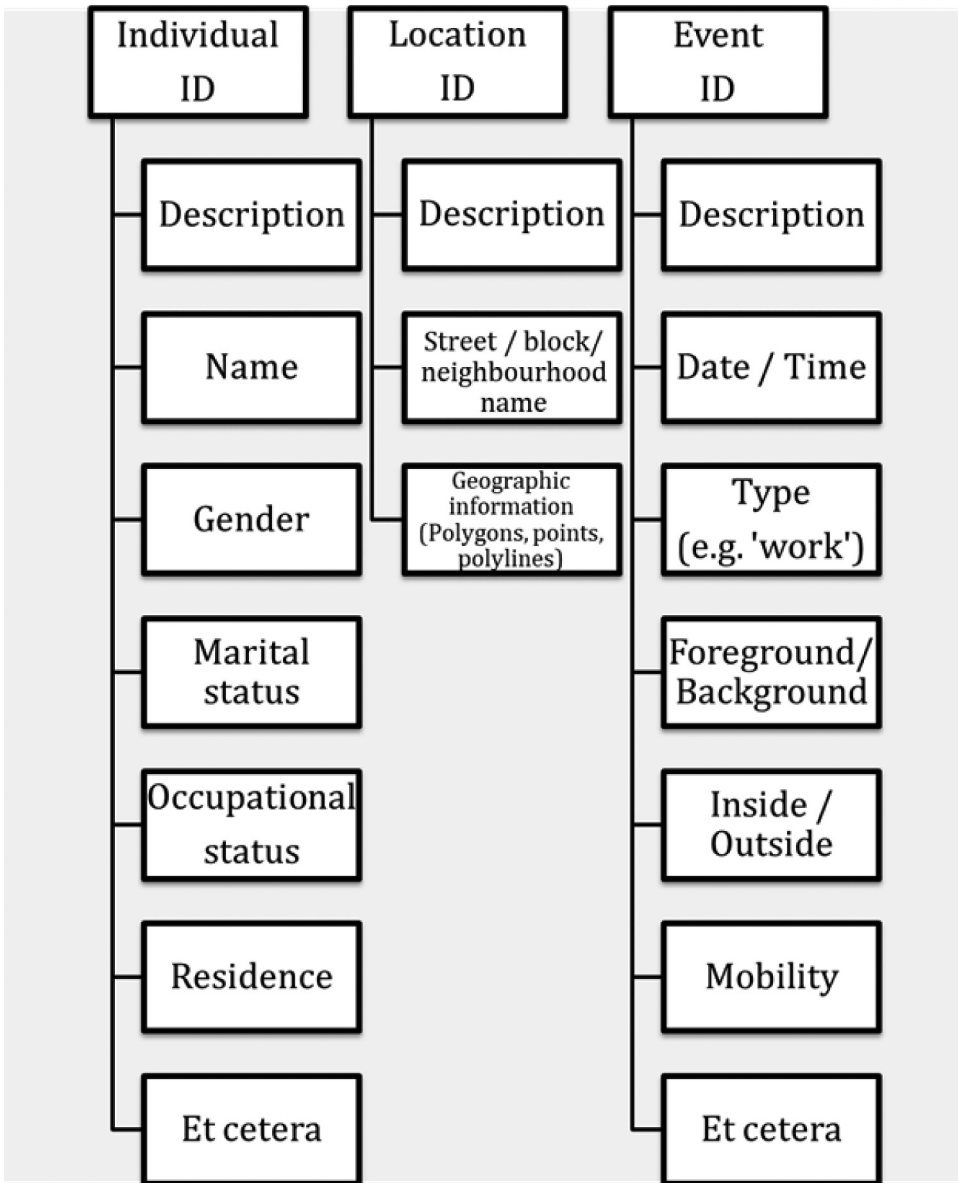
Figure 3. Primary and secondary categories in the FOSGUS database.

location and the event. In these descriptions we hew as closely as possible to what is reported or depicted in the original source.

To each individual we attach a unique ID and add attributes (where provided in the original source) such as name, gender, marital status and occupational status.[51] This information is stored as a secondary category attached to the unique IDs of the primary data type. Other attributes may be added depending on the detail given in the source; some records may reveal information on age, appearance and status, whilst others lack this kind of detail. Moreover, as we have adopted a global, cross-cultural approach, it is

crucial to facilitate a level of flexibility allowing for different premodern categorisations. For example, some categories perhaps relevant in one geographical context may be non-existent in others. A striking example is '*wakashu*', or beautiful youths, who in early modern Japan occupied a distinct position in the social and sexual hierarchy. Their conception as something of a 'third gender' does not readily translate to historical contexts beyond the Japanese Edo period.[52] But even within the context of one city, flexibility in classifying information is required. For instance, people described as Jewish in 17th-century Amsterdam are captured under 'status', which does not commit to an *a priori* interpretation of what Jewishness is (religion, ethnicity, or citizenship status). Our secondary categories should therefore not be seen as strict categorisations but rather as ways to label or classify various types of information that may later be categorised systematically by the researcher analysing the data.[53]

Second, for the primary data type 'Event', we capture the verb phrase that describes the activity ('Description'), the date and time, and the type of activity, then link that to the individuals taking part in the event and its location. Events may include activities that are static or centred in one place: for instance in cases of individuals who are reported to be loitering in a specific location or people such as stallholders and street sellers who work on the street. However, our snapshots also encompass people on the move. In some cases people report they are moving from A to B, as indicated for example in diaries, or we find movement and modes of transportation described or depicted in the primary source – think of individuals transported in a carriage or boat, or those taking a stroll. We deal with these various accounts of movement by sticking to the snapshot principle. Under the primary data type 'Event', we can classify the type of mobility depicted in the source: walking, say, or running or commuting to work. For individuals for whom we have several observations along a route (as in detailed diary descriptions or an extensive witness account of events leading up to an incident reported to a judicial body) we take each point for which we have location data as an individual snapshot. This ensures the data remains coherent, and by linking all these snapshots to the same individual and event we are able to plot routes and assess the geographic scope of individuals' mobility.

In addition to accommodating observations of both static and mobile activities we also need to be able to process accounts of events that vary substantially in the ways they were reported in the historical source. For diaries, large differences exist between those that can be considered account books and those written in a more literary (or at least more verbally elaborate) style. 'Account book' entries resemble the terse July 1830 report by Saitō Gesshin, the Edo neighbourhood chief introduced earlier: 'Day 12, fair weather, went to Kayaba-chō Street, evening, went to the place of Kō-san.'[54] This laconic entry differs markedly in style from what Kuroda Tosako, the elite woman from the same city, wrote on 2 June 1717: 'The sky is overcast with high clouds, but I resolved to visit the Kanda Myōjin shrine. Since it is the guardian deity of one's birthplace that protects children, each year when spring comes, I visit it first of all, but this year due to a hindrance I had not visited it until today.'[55] Witness accounts, such as appear in the Amsterdam notarial records, also show varying forms used to report activities. Here one often finds a single lengthy sentence containing information on multiple individuals engaged in (sometimes) a variety of activities happening either simultaneously or consecutively. For example, on 8 April 1750 it was reported: 'And the witnesses report that at the 3rd of this month in the afternoon the clock between 1 and half 2 they have been in an

alehouse under the Fish Gate where also sat a woman who is in the streets called Griet Kalk familiar to the witnesses by face living on the Elandsgracht in the Wijdegang, having heard that the aforementioned Griet Kalk said to a Lena Schadde who also came into that house, the neighbours are saying that you are an informer, that you got forty guilders for that.'[56] To accommodate these diverse descriptions we follow the same principle guiding our treatment of the other datatypes: we enter a description of the event and the ID as a primary category, and add secondary categories when the information is provided.

One secondary category under 'Event' requires further elaboration: 'Foreground/ Background'. The inclusion of 'Foreground/Background' facilitates the unpacking of a snapshot, as one can distinguish activities playing a key role in an event's depiction from those that happened in the background. For instance, in witness accounts of a crime, one can distinguish between the crime itself and the activities happening simultaneously with or in the run-up to the event, often undertaken by witnesses and bystanders. The ability to make such distinctions is of utmost importance to analyse everyday street experiences, since crime registers and witness accounts by themselves would create maps that inflate the proportion of criminal activities to more ordinary activities reported in such sources.[57] In addition, however, for diaries, letters, travel accounts and visual depictions such as streetscapes, it is useful to distinguish the foreground from the background, which allows us to assess the differences and similarities between foregrounded activities in the source and those mentioned in passing or depicted in the margins. In this way, the database design permits us to answer questions about incidence and routinisation, as well as about the various ways historical sources depict street life.

Finally, the third type of information in our snapshot ('location') is perhaps the most complex layer recorded in the database. Here we are required to pinpoint a specific place on a historical map, to include wide-ranging descriptions of that particular location (a temple, a stoop, a wooden shack, etc.) and to allow for the input of static and non-static information: not only people reported as standing in the street but also those moving from A to B. After lengthy deliberation we decided to split up the various types of geographic information and allocate them to the three different primary datatypes. Under 'Location', we record a specific location description as given in the source, the street name or block name, a house or block number (when given) and, whenever possible, the geospatial coordinates. The database interface includes a window that contains historical maps of the cities under study and allows the viewer to select the map closest in time to the data entered, so as to be as precise as possible in pinpointing the location (Figure 4).[58]

Other types of location data, such as the particular location's character or function, are stored under the other primary data types 'Event' and 'Individual'. As we argue above, we want to avoid labelling spaces according to the public/private dichotomy, and for that reason we have decided to simply record whether events happened inside, outside or in threshold spaces (such as window, doorway, balcony). When registering events, these categories can be attached to the event. Furthermore, when linking locations to events a specific description of a location can be added, such as 'on the street', 'tavern' or 'shipyard'. This makes it possible to capture very precise spatial details without the need to create unique IDs for all varieties of locations that share geospatial coordinates. In this way as little spatial detail as possible is lost, without creating large numbers of unique location IDs for variations of the same general location. For the same reason, residence locations are added to the primary data type 'Individual'. 'Residence' is a secondary
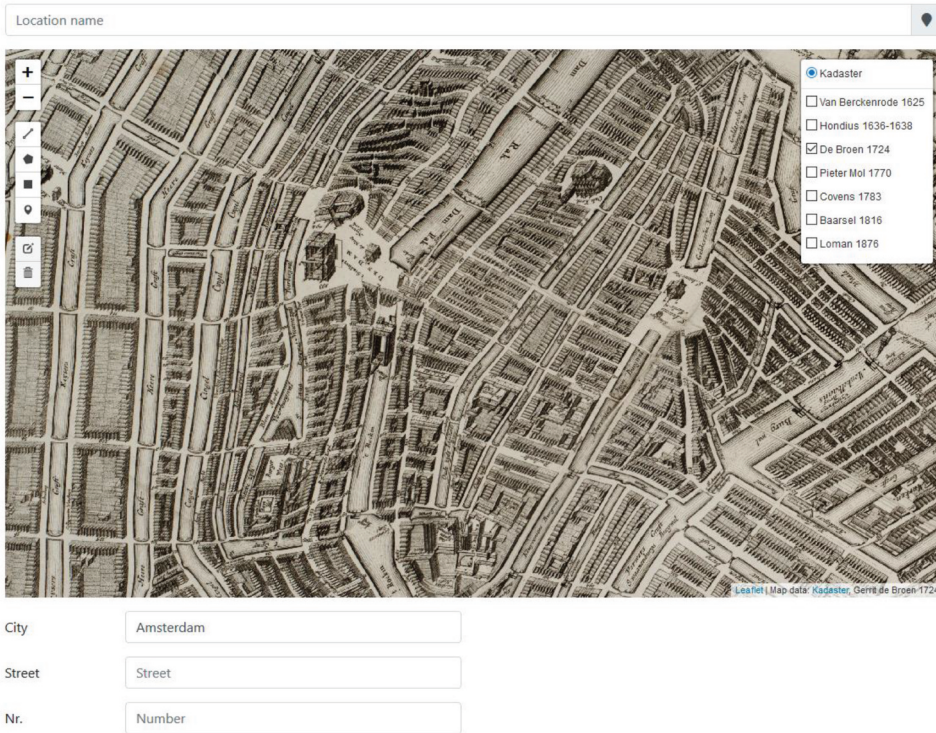
Figure 4. Adding location information to the FOSGUS database.

category that uses the same unique ID as primary category 'Location'. This also significantly facilitates data entry: one enters data on a particular location once and can use it repeatedly for different events and individuals without having to re-enter it. When adding a residence location to an individual, the database also facilitates the entry of a residential status, such as lodger, guest or tenant.

Although the design of the database eases the processing and organising of the highly complex strands of historical geographic data, it remains a challenge to pinpoint the locations of a snapshot on a map. This difficulty is partly due to the way the original source describes locations as well as the lack of precise geographical information for the era under study. People made their way to their destinations on the basis of landmarks, house names and shop-signs rather than by street names and house numbers, as is common today.[59] Reflecting such practices of navigating the premodern city, the level of spatial detail provided in the sources available for our study is generally on the level of streets or blocks, often in the form of parts of streets or intersections with other streets. In Edo, for example, the predominant type of location identifier used in most archival sources is the street name, which also doubles as a social and administrative unit called *chō* or *machi* in Japanese. Although officially standardised at 109 metres, in practice the length of streets in Edo could vary roughly from 72 to 125 metres; this range is often as close as we can get when locating a specific spot on the map.[60] Important landmarks such as temples and shrines are easier to locate more precisely, as they, together with the residences of the warrior elites (*daimyō*), are often indicated on historical maps. For

Amsterdam we encounter similar challenges, although the description of locations in the sources tends to show greater variation and detail than in Edo.

Depending on the detail given in the source and the question we want to answer, the database allows for the use of different levels of specificity to pinpoint a location and to use polygons, polylines or point data to capture a variety of spatial details. Figure 5a and b illustrate how we deal with plotting snapshots on a map for two neighbourhoods. In Figure 5a we have plotted two types of entries in the diary by Saitō Gesshin, one indicating the movement of an individual other than Gesshin who visited his house ('Second month, 1st day; cloudy; Mr. Wakabayashi came [to my house]') (in red) and one
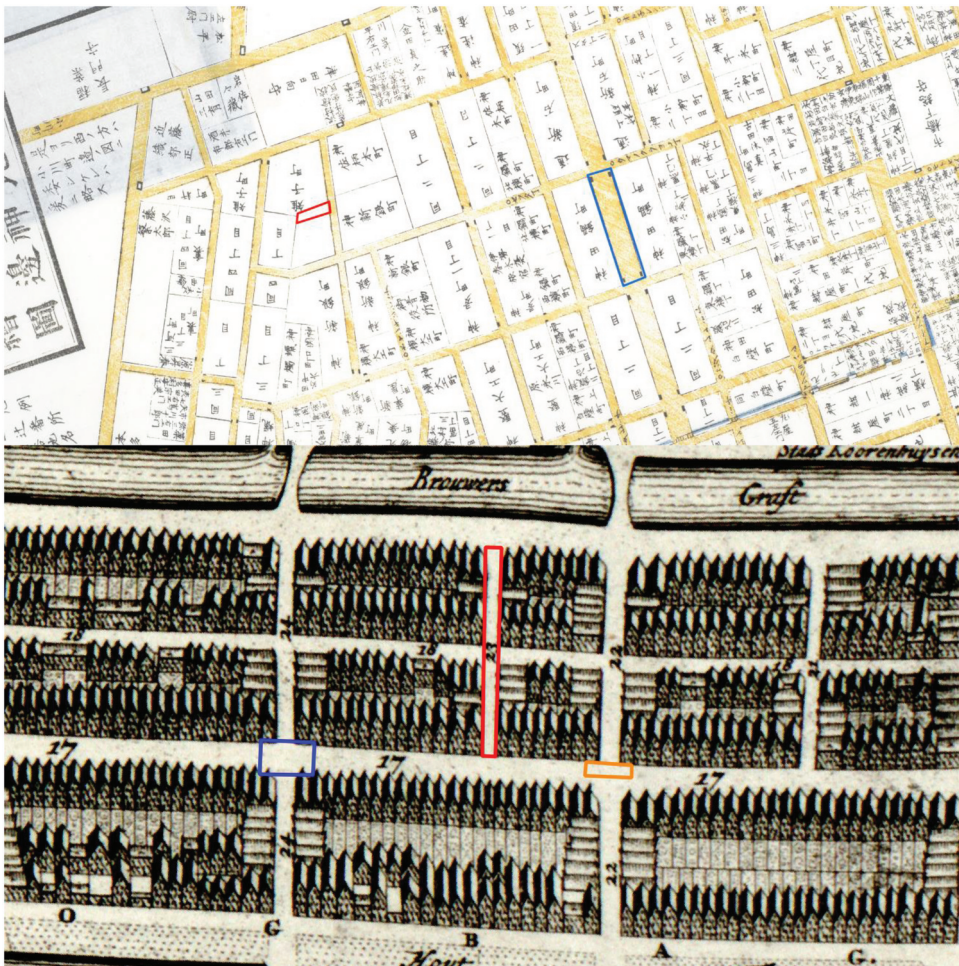

Figure 5. Plotting snapshots from Edo and Amsterdam on maps using polygons. Edo, Nihonbashi Kita Uchikanda above (5a)and Amsterdam Haarlemmerbuurt below (5b).
Sources: Edo Kiriezu, Omiya Kingodō, Kaei 7 (1855), Museum Volkenkunde, Leiden; Historiographical Institute of the University of Tokyo (ed.) *Dai nihon ko-kiroku: saitō gesshin nikki*. Vol. 1. (Tokyo: Iwanami Publishing, 1997–2016.) p. 5, 34. NL-AsdSAA, Collectie Atlas Splitgerber, inv. nr. 26. NL-AsdSAA, Archief van de Notarissen ter Standplaats Amsterdam, inv. nr. 13131, scans 255 & 555, NL-AsdSAA, Archief van de Notarissen ter Standplaats Amsterdam, inv. nr. 11734, scan 452.

recording Gesshin's visits to the house of a man called Tatsuyama ('visited Tatsuyama [in Nabe-chō Street])' (in blue).[61] Because Gesshin's house can be located with certainty on a map, we have drawn a polygon that fits the plot where his house stood. However, in the case of Tatsuyama we are unsure and know only the *machi*: hence we use a polygon that captures the street rather than a specific point or plot.

In Amsterdam we have applied the same strategy. As one can see in Figure 5b, we sometimes know only a street name: in such situations we draw a polygon for the street as a whole, as in the case of the Mouthaansteeg captured in red on the map. We also have instances when we know that an event transpired at the corner of two streets. This may result in a polygon such as the blue figure (on the corner of Haarlemmerdijk and Oranjestraat) or the yellow figure used when a street that intersects a main street has different names on either side of the cross street. Here you find Buitendommerstraat to the north and Binnendommerstraat to the south of the central axis Haarlemmerdijk, and the entry in yellow concerns the specification 'Haarlemmerdijk on the corner of Binnendommerstraat'.[62] By using polygons we can more precisely record the uncertainties often contained in descriptions of locations. However, for the types of analyses requiring point data, we can calculate polygon centroids and convert those to point data. In this way we can, for instance, produce heat maps that indicate densities of observations, or we can calculate distances between points using the street network as a grid. Because we do not register the original data in points but in polygons, the database allows us to assess the accuracy of the point data, for example by taking the original polygon area to categorise scales of accuracy.

The FOSGUS database has been developed to enable us to query the data in many different ways up to a level of highly complex queries. We can, for instance, make queries for all married women or every leisure activity, or combine such queries to find all leisure activities by married women. We can thus answer questions on everyday urban mobility that go beyond gender per se and investigate relationships among a variety of entities.

Looking ahead

Our initial pilot studies have shown that by using the snapshot approach to capture street activities in the FOSGUS database, we can derive meaningful findings from collections of snapshots of individual events.[63] Furthermore, by overlaying multiple maps of one city containing a variety of information into a single, 'composite' or 'deep' map, we can increase the correlation of spatial patterns of presence to urban street uses. As such, the database itself forms a meta-source and a way to link what perhaps would otherwise be unrelated observations. In this way, we can also significantly extend the analysis into other domains of the cities under study, such as the economic, symbolic, religious and cosmological. This more expansive set of possibilities, we propose, represents the great transformative power of this methodological approach and the accompanying database.

In the coming years we will expand the database, which at this stage contains approximately 2,000 snapshots for Amsterdam and Edo, by increasing the data collection within the contexts of our chosen case studies and selected collections of primary sources. This process will enable us to map out, for the first time, how people of different genders, ages and social groups used the streets of these two iconic cities. By linking the findings to cultural norms about gendered behaviour, local regulations on street use and urban structure, we will

investigate the extent of these factors' impact on gendered street use and mobility, and vice versa. We expect this research to make profound contributions to the history of gender and urban space because it has been, until now, very difficult to establish how patterns of mobility and street use varied across different temporal and spatial contexts. In the future, more cities and different collections of primary materials may be added to enhance the richness of urban experiences included in the database and to expand the analysis both geographically and chronologically. The simplicity of the snapshot approach combined with the flexibility of the database structure central to our method is crucial to facilitating such expansions.

However, in addition to providing new insights into historical gendered urban mobility, we also feel that the approach proposed here provides an important tool to foster innovations in the study of urban life in the past. Despite important shifts in urban history, including the recent blossoming of the history of urban experience, the history of the city is still often written from the perspective of the built environment. This emphasis is partly caused by the interest generated by architecture, city planning and urban expansion, but it also results from the types of information contained within archives and collections: think of city maps, building plans and streetscapes that foreground the built environment. Even when materials revolve around the people who inhabited cities and their ways of living, as in the case of tax lists and population registers, these sources are usually organised so that the buildings occupied by the people listed in the records take centre stage – population registers, tax lists, probate inventories and the widely used trade directories all have a basis in an address, plot or building.

As we have seen in this paper, such biases also affect the new digital urban histories that have largely, thus far, relied on these types of data, which due to their relatively standardised nature are deemed more suitable for data linkage and mapping.[64] As a result, the lived historical city currently largely consists of past city lives played out behind doors and between walls. This information may reveal who lived where, what these people did for a living and (for instance) what items of furniture they owned, but only indirectly tells us something about everyday urban experience. The types of data commonly used in (digital) urban histories, moreover, generally offer relatively scant insights into the types of people often omitted in these sources: women and the poorer strata in particular. Therefore, reliance on the (semi-) structured data provided in standardised lists inevitably yields a picture of a city consisting mostly of well-to-do men and their families.[65] The snapshot approach helps redress this imbalance in two important ways. First, it provides a heuristic tool to capture complex and unstructured data on more fleeting and mundane aspects of everyday life as it was lived by a multiplicity of city dwellers: practices of work, leisure, and conviviality that would otherwise not be visible in the sources. Second, it brings to light those parts of life in the historical city that hitherto have remained invisible or only partly visible: it brings into full focus the streets, squares, pavements, gardens, parks and urban fringes that provided the context within which much of the everyday urban experience played out.

Notes

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53 See the approach *chosen* by the GaW project. Maria Ågren, ed., *Making a Living*.

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55 '(…) usukumorinuru sora nagara, omoitachinureba, Kanda Myōjin e mōdenu, kodomo no ubugami ni ohashimaseba, nengoto no haru ha mazu mōde-haberedo, nanikure to saharu koto arite, ima made mōde-haberanu okotari wo, kyōzo mōdenu.', Shiba Keiko (ed.),'Ishiharaki' 'Koto no hagusa': daimyō fujin no nikki. Edo-ki Onna Shiryō, vol. 1 (Tokyo: Katsura Bunko, 2008) p. 11.

56 NL-AsdSAA, Archief van de Notarissen ter Standplaats Amsterdam, inv. nr. 13131, scan 346. 'En verklaerden zij getuijgen dat zij op vrijdagh den 3e deser maendt s'middags de clokke tusschen 1 en ½ 2 uuren zig bevindende in een bierhuijs onder de vispoort alwaer mede zat een vrouwsperzoon door de wandeling genaemt Griet Kalk hen get, van aenzien bekent woonende op de Elandsgragt in de wijdegang gehoort hebben dat gem Griet Kalk tegens Eene Lena Schadde daer mede in huijs koomende zeijde de buuren zeggen, dat jij de verklikster en verraedster ben dat je daer 40 gulden voor getrokken hebt.'

57 Bob Pierik, 'Using "pre-Crime Scenes" for the Historical Urban Ethnography of Early Modern Amsterdam,' *Gender and Work in Early Modern Europe*, 1 December 2017, https://workandgender.wordpress.com/2017/12/01/using-pre-crime-scenes-for-the-historical -urban-ethnography-of-early-modern-amsterdam/. (accessed 9 July 2020); Mark Hailwood and Jane Whittle, 'Research in Progress Essay: Women's Work in Rural England, 1500–1700: A New Methodological Approach', *Local Population Studies*, 96, no. 1 (2016), pp. 66–71.

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62 NL-AsdSAA, Archief van de Notarissen ter Standplaats Amsterdam, inv. nr. 13131, scans 255 & 555, NL-AsdSAA, Archief van de Notarissen ter Standplaats Amsterdam, inv. nr. 11734, Scan 452.

63 Bob Pierik, 'From Microhistory to Patterns of Urban Mobility. The Rhythm of Gendered Mobility in 18th Century Amsterdam', in Jon Stobart and Gudrun Andersson (eds), *Daily Lives and Daily Routines in the Long Eighteenth Century*, (London: Routledge, in press); Bébio Amaro, 'Gender and space in Edo', paper presented to the European Social Science History Conference Belfast (2018); Marie Yasunaga and Danielle van den Heuvel, 'The Freedom of the Streets: Studying street life and the everyday in premodern Eurasia', paper presented to the 11th International Convention of Asian Scholars, Leiden (2019).

64 See for example several contributions in the 2020 special issue of *Urban History* on spatial urban history: Richard Rodgers and Susanne Rau (eds), *Thinking spatially: new horizons for urban history, Urban History* 47, no. 3 (2020).

65 Ironically, the history of street life has, by contrast, tended to focus mostly on the marginal groups of criminals, prostitutes, beggars and vagrants. Cf. Van den Heuvel, 'Gender in the streets'.

Acknowledgments

Disclosure statement

Funding

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