

## **Detailing a Spectrum of Motivational Forces Shaping Nomadic Practices**

PINATTI DE CARVALHO, Aparecido Fabiano, CIOLFI, Luigina  
<<http://orcid.org/0000-0003-4637-8239>> and GRAY, Breda

Available from Sheffield Hallam University Research Archive (SHURA) at:

<http://shura.shu.ac.uk/15238/>

---

This document is the author deposited version. You are advised to consult the publisher's version if you wish to cite from it.

### **Published version**

PINATTI DE CARVALHO, Aparecido Fabiano, CIOLFI, Luigina and GRAY, Breda (2017). Detailing a Spectrum of Motivational Forces Shaping Nomadic Practices. In: CSCW '17 : Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing. ACM, 962-977.

---

### **Copyright and re-use policy**

See <http://shura.shu.ac.uk/information.html>

# Detailing a Spectrum of Motivational Forces Shaping Nomadic Practices

**Aparecido Fabiano Pinatti  
de Carvalho**

Institute of Information  
Systems and New Media  
University of Siegen  
Siegen, Germany  
Fabiano.Pinatti@uni-siegen.de

**Luigina Ciolfi**

Communication and Computing  
Research Centre  
Sheffield Hallam University  
Sheffield, United Kingdom  
L.Ciolfi@shu.ac.uk

**Breda Gray**

Department of Sociology  
University of Limerick  
Limerick, Ireland  
Breda.Gray@ul.ie

## ABSTRACT

Recent CSCW research has shown that nomadicity can be seen as a dynamic process that emerges as people engage with practices supporting them in the mobilisation of their workplace to accomplish work in and across different locations. This paper elaborates on the emergent aspects of the process by detailing a spectrum of motivational and contextual forces that surround and shape nomadic practices. The paper contributes to existing CSCW literature on nomadicity and extends it by articulating the complex intersections of motive and context that shape nomadic practices. The findings that the paper presents emerged from an ethnographic study of a group of academics and their nomadic work/life practices.

## Author Keywords

Nomadic/mobile practices; work/life; technological mediation; spectrum; academe; ethnography.

## ACM Classification Keywords

H.1.2 [Models and Principles]: User/Machine Systems – Human Factors. H.4.0 [Information Systems Application]: General.

## INTRODUCTION

The increase of knowledge-based occupations and ‘flexible’ forms of work, such as temporary agency work, freelance employment and distance and telework, has led to an interest in the potential that these forms of work have for nomadic practices, given how professional activities can be easily detached from the office premises and performed anytime or anywhere that suits the workers’ or the employers’ needs [20]. In addition, the widespread availability of a technological apparatus (including remote

data storage, real-time communication, collaborative authoring and editing platforms, etc.) is also facilitating the mobilisation of resources necessary for the accomplishment of work at locations where other resources such as time or collaborators are available [33, 44]. There is, therefore, a need to gain an accurate understanding of nomadicity beyond studies of physical mobility, and particularly so in the context of research on socio-technical systems focusing on practice, such as that conducted within CSCW [15].

This paper reports on the findings of a study exploring the lives of people who engage in work in and across several locations, using a wide range of technological devices and services to mediate the accomplishment of their productive activities. We refer to Kleinrock’s [33] concept of *nomadicity*, which accounts for people’s movement and engagement with activities in locations with different computing infrastructures. The notion of nomadicity has been appropriated in CSCW to refer to the processes underlying the accomplishment of work in and across different locations with the help of computer technologies to mobilise the workplace to such locations (for a summary see [15]).

We build on de Carvalho’s [21] argument that the accomplishment of work at multiple sites unfolds through a dynamic and emergent process, which is constantly ongoing in the lives of people whose jobs allow or demand some flexibility as to when and where work should be carried out. These nomadic processes have been studied in previous CSCW work, however our goal here is to shed light on and detail the motivational forces that cause and shape them – something that has not been examined in depth in existing literature. Drawing from empirical data collected through ethnographic fieldwork, we discuss the contextual factors that motivate people to engage in nomadic practices. The main contribution of this paper to CSCW is therefore the provision of an in-depth account of the reasons why and the ways in which nomadic practices emerge in people’s lives, thus characterising nomadicity as a spectrum of potential configurations of motivations and actions.

Paste the appropriate copyright/license statement here. ACM now supports three different publication options:

- ACM copyright: ACM holds the copyright on the work. This is the historical approach.
- License: The author(s) retain copyright, but ACM receives an exclusive publication license.
- Open Access: The author(s) wish to pay for the work to be open access. The additional fee must be paid to ACM.

This text field is large enough to hold the appropriate release statement assuming it is single-spaced in Times New Roman 8-point font. Please do not change or modify the size of this text box.

Each submission will be assigned a DOI string to be included here.

In the following sections, we will discuss our work in the context of CSCW research on nomadicity, we will then present findings from our study of nomadic practices, highlighting the three identified sets of motivational forces of *choice*, *opportunity* and *obligation*. We will finally discuss the impact of such forces on our understanding of nomadicity, particularly within CSCW.

### DEFINING NOMADICITY IN CSCW

CSCW has studied work on the move for a very long time: from Luff and Heath's [36] seminal study of mobility in the workplace, to more recent examinations of coordination and collaboration on the move [3, 23, 28, 35, 47, 55], the discipline has produced a number of important contributions for the understanding of mobilities and of the changing nature of work for certain professions. This work is rooted in socio-scientific studies of mobility, such as the sociological analysis of articulations of mobile practices and opportunities for movement [58], and geographical accounts of how mobility is performed in both physical and virtual realms [32]. The notion of mobility itself has been critiqued and extended in light of empirical work – nomadicity being one of the concepts proposed as an alternative frame to approach the study of work at different locations [3, 30, 46, 47].

In CSCW literature, nomadicity is regarded as a work strategy entailing people's engagement in work at distinct sites, according to the availability of the resources that are necessary for its accomplishment [55], or the lack of a stable location to work [47]. This notion is slightly different from that of nomadism, which encompasses the mobility of the complete household to new locations and permanency in a site for relatively long periods of time in the manner of pastoral nomads ([50] cited in [55]). Nonetheless, some similarities can be noted between the strategy of moving a household and that of "moving the workplace" to new locations so that productive activities can be achieved. In pastoral societies, nomadic practices are commonly associated with seeking resources such as water and pastures, so that nomads can grow their crops or raise their herds. In doing so, nomads constantly move their means of production and the trappings of their livelihood to different locations where these resources can be found. In urban societies, nomadic practices do not necessarily involve moving the complete household to new locations, although the mobility of the household may eventually happen (e.g. when certain workers move with their families to other cities or countries). These practices become technologically mediated and, instead of the mobility of the household, it is more common to observe *the mobility of the workplace*<sup>1</sup>

---

<sup>1</sup> The idea of mobility of the workplace is grounded in the notion of the *fluidity of mobile interactions* elaborated by [31] and discussed by [46] as she talks about how computer technologies may reduce the discontinuities between places "*enabling more fluid geographical movements*" (p.36), thus facilitating nomadic practices. According to this notion, the workplace becomes a fluid notion that can be assembled and brought to different

(i.e. the tools and resources necessary for carrying out productive activities) to new locations where workers stay for short periods of time and from where they can accomplish work [3, 47, 55]. In a way, nomadicity can be associated with seeking resources such as space, time, privacy, silence and other people in order to develop their work. As soon as the necessary resources are found, people set up their temporary workplaces and start engaging with their productive activities.

Hence, *nomadicity* goes beyond spatial movements, work on the move, or access to technological and informational resources anytime/anywhere. It must be viewed in more holistic and socially-mediated ways. As Rossitto [46] puts it, nomadicity involves the understanding of the mobility of artefacts – also known as micro-mobility [36]; the social interactions enabled by being mobile [3, 16]; the different ways to be in contact with people and to make them aware of one's locations [43]; the spatial, temporal and contextual dimensions of mobility addressed by Kakiyama & Sørensen [30]; the spatial, temporal and technological discontinuities that emerge from it [31]; and, finally, the interaction between people, technologies and places and the way that work may shape places and places may shape work [9]. Moreover, nomadicity often goes beyond work and comprises to some extent the blurring of work and non-work as people involved with nomadic practices negotiate and engage in work activities in locations that were traditionally dedicated to social or leisure activities, and negotiate and engage in private/family or leisure activities in sites traditionally associated with work [21, 41, 49].

While CSCW research has to date richly defined the key features of nomadicity, little attention has been given to articulating *why* people come to engage with it. Studies on the subject have been preoccupied with understanding how nomadic interactions take place, how people move about and how they make places out of generic spaces to work. Reasons given for people to engage in nomadic practices include: meeting customers or collaborators; using equipment available only at specific sites; and being close to human resources that may be important for the accomplishment of tasks [44, 55]. However, it is not clear how these connect to motivational considerations and strategies. Furthermore, there has been a tendency in the past to see nomadicity as a desirable professional lifestyle motivated by its own "romance" [11]. Yet, when looking at actual nomadic practices, there appears to be a complex set of factors that workers need to handle and obstacles that need to be overcome, suggesting a more complex reality of nomadic practices and their motives. Motivation as a psychological concept has been examined in-depth [48] to distinguish the causes at the root of human behaviours, and the level and orientation of motivation: the major conceptual distinction is between "intrinsic motivation"

---

locations as needed and people may go "*from a single workplace to a number of places for work*" [46, p. 17].

(when people do something because it is inherently interesting or enjoyable) and “extrinsic motivation” (when people do something because it leads to a desirable external outcome). In this paper we do not delve into this conceptual debate, rather we refer to motivation more generally as a person’s impetus to make a decision to do something (based on the definitions of Vroom [59] cited in [54], and of Ryan & Deci [47]), in this case to mobilise him or herself and his/her resources often in relation to specific contextual factors.

The empirical evidence that we present in the following sections details the motivational forces for engaging in nomadic practices, ranging from *choice*, i.e. consciously choosing and moving to specific locations to engage in work according to personal preferences, to *opportunity*, i.e. engaging in work as some resources are unexpectedly made available at certain locations, and *obligation*, i.e. moving to specific sites where the needed resources are available or because a superior tells one to do so. Of course, there are situations where work is strongly bound to specific locations and people are obliged to move to these locations to carry out their activities, as will be discussed below. Nevertheless, our findings suggest that focusing exclusively on these situations addresses only one end of a wider spectrum, which we call *the nomadicity spectrum*. Shedding light on the range of motives behind nomadic work/life practices furthers our understanding of the lives of people conducting work on the move and on the strategies they deploy to accomplish it.

## METHODOLOGY

When it comes to understanding nomadic practices, researchers have pointed to the importance of using research methodologies that enable grasping the interrelationships and patterns among various actors and technological tools dispersed across time and several geographical locations [12, 19]. In so doing, researchers frequently employ in-depth ethnographic methods [19, 46]. Following this tradition, our study was conducted through ethnographic fieldwork involving sixteen participants (eight men and eight women). Participants fell into different age groups, ranging from the mid-thirties to the late-fifties. All participants were academics working at a local university and engaged in both teaching and research. Thirteen of the participants were tenured full-time lecturers and senior lecturers, two were part-time lecturers, and one was a research fellow (on a fixed-term contract) with teaching and research responsibilities. Therefore the participants represented various academic profiles and levels of seniority. As for affiliation, ten worked in a Computer Science department; three in Sociology; one in Engineering; one in Languages and Communication; and one in a centre for Teaching and Learning. The fact that participants were from different backgrounds and held different affiliations enabled an exploration of the diversity within the target group, a common practice among research studies on the matter [9, 43, 44]. Specifically, it allowed us

to investigate the different nomadic patterns associated with this diversity. As we mentioned, all our participants were active in both teaching and research and thus engaged in a variety of nomadic activities, from “local” and micro-mobility within the university campus (e.g. from offices, to meeting rooms, classrooms, labs, etc. between and within buildings), to longer-distance movements and nomadic strategies in the form of daily commutes to work and of attendance at events nationally and internationally, such as conferences and project meetings. This diversity also meant that the participants talked about and were observed working at locations such as cafes, hotels, trains and their own homes.

The choice of academics was motivated by several reasons. First and foremost, academic jobs involve a substantial amount of movement and reconfiguration of resources at different locations: academics are constantly developing their work activities in and across different locations [49]. For example, they are always moving from classroom to classroom on campus or from campus to campus in a city to deliver lectures or to conduct research. From time to time they also need to move from city to city or country to country to visit and collaborate with different partners or to attend conferences – always bringing with them the resources to set up their temporary workplaces. Therefore, studying their nomadic practices would allow us to observe different mobility patterns. Second, the sample group we focus on here was part of a wider project examining work and life practices in a regional high-tech hub. Academic institutions were identified as key to the configuration of knowledge-intensive workplaces in the area we focused on [8, 29], together with professionals in ICT companies, and creative entrepreneurs. Academics were *not*, therefore, opportunistically chosen, but one of the three key professional sectors identified as key to the knowledge economy [60] and therefore central to the theme of our project. Indeed, the rise of competition for ‘world class university’ status means that universities are embracing entrepreneurship and innovation in staking out their significance and indispensability to the knowledge economy [18, 52]. Like those in other knowledge work sectors, such as ICT and creative entrepreneurs, academics are seen as marshalling more aspects of their lives in mobility to produce knowledge and brand their own reputations and those of their universities [2].

Yet another strong reason for selecting academics as a target group was the fact that so far no study has directly addressed the nomadic aspects of their work-life. A literature search revealed a large body of research focusing on the study of the academic profession [5, 6, 7, 17, 24, 45]. However, these studies commonly focus on issues such as “power and control in higher education; bureaucracy and rationalization; and normative and cultural dimensions in higher education” [45, p. 114], or on the structure of the academic profession, its core functions [7] and issues of

#	Participant	Data Collection Activities			
		Interview	Shadowing	Follow-up Interview	Diary
1	Aoife	✓	½ working day	✓	-
2	Bridget	✓	-	-	-
3	Cathal	✓	-	-	-
4	Claus	✓	3 ½ working days	✓	1
5	Elaine	✓	½ working day	-	-
6	Gabriel	✓	-	-	-
7	James	✓	3 ½ working days	-	-
8	Jenny	✓	3 ½ working days	✓	1
9	Josh	✓	-	-	-
10	Kate	✓	½ working day	✓	1
11	Lucy	✓	3 working days	-	-
12	Maeve	✓	-	-	-
13	Marc	✓	-	-	-
14	Philip	✓	½ working day	✓	1
15	Shannon	✓	3 ½ working days	✓	2
16	Tom	✓	½ working day	-	-

**Table 1. List of participants and data collection activities in which they participated**

academic development; this scholarship does not investigate the daily work practices of academics – a noticeable exception being the study by Lea and Stierer [34], which addresses lecturers’ everyday writing activity and analyses it as a professional practice. Our choice thus aimed at advancing understanding of the work/lives of academics and their everyday practices, which is still limited [45].

The data collection techniques used included: shadowing, in-depth interviews (before and after shadowing) and participants’ diaries. Thematic analysis has been used for the data analysis [1, 25]. Table 1 provides an overview of the data collection activities undertaken with each participant<sup>2</sup>.

In general, interview length ranged from 45 to 120 minutes (Mean = 64). The participants were asked about several aspects of their work, with particular emphasis on their needs to move to accomplish certain tasks, and on their strategies for coping with various professional requirements. Interviews were audio recorded and transcribed afterwards using the *Intelligent Verbatim* [27] level of granularity, where most mumbling expressions and filler phrases are kept out, but everything else is transcribed as said. In total, the interviews amounted to 23 hours and 33 minutes of audio recordings. About 160 hours of observations through shadowing were also conducted. Observations were documented through field notes and were transcribed (i.e. were put in a narrative format)

immediately after the observations took place. As the particular technique used was shadowing, the observations took place at numerous locations on and off campus (including one participant’s private residence).

The differences in the collection of individual data for each participant arose because some were unable to commit to the time involved in all phases of data collection. Despite initial commitments to do so, the extent of the time commitment involved in shadowing and diary-keeping only became fully evident to some participants during the study. Nonetheless, the use of interviews and shadowing as the two main data collection instruments was extremely useful: whilst the interviews allowed understanding how participants made sense of their nomadic practices and to gather general information about their movements and work activities, the shadowing sessions allowed to collect situated data on the matter and to observe things that the participants would not mention during the interviews. The diaries provided further insights on the participants’ everyday life allowing us to collect data on events that happened when we were not with the participants. Data collection went on until *data saturation* was reached, i.e. until the point when no new significantly different findings emerged from the data and the data allowed identifying consistent patterns [51].

As such, data from the interviews were triangulated with the observational data and the data collected through the diaries – whenever available – to allow for *trustworthiness* and *authenticity* [10]. For instance, the accounts of a typical day of work provided by participants during the first round of interviews have been compared to what was observed

<sup>2</sup> Pseudonyms are used in Table 1 and throughout the paper to assure confidentiality.

during the shadowing sessions they participated in and reported on their diaries. This process helped us ensure that the propositions we made were not based on ‘espoused theories’ that reflected more what the informants believed to be typical, than what they typically do.

Regarding the thematic analysis, the coding process started with the elaboration of a short list of “*apriori codes*” [25, p.132], which was generated from the theoretical readings on mobility and nomadicity and from the notes taken during the interviews and *shadowing* sessions performed. As Ayres [1] notes:

*“In thematic coding the analyst frequently begins with a list of themes known (or at least anticipated) to be found in the data”* (p.867).

We then went through the data artefacts recursively, looking for the occurrences of *apriori codes*, expanding the initial codes list by including *empirical codes* [25, p.132] that emerged from the data, i.e. codes that were not anticipated. At the end of this activity, we had an extensive list of *codes* and *sub-codes* and from this list we elaborated the *main themes* or *code families* [25, p.138] which we present in the following sections.

### **THE SPECTRUM OF MOTIVATIONAL FORCES SHAPING NOMADIC PRACTICES**

As previously mentioned, motivation has been defined from different perspectives in the literature. However, most definitions tend to incorporate three “common denominators”: (i) “factors or events” that (ii) “energize, channel and sustain” (iii) “human behaviour over time” [54, p.379].

As we attempted to further understand the notion of nomadicity and the role of technology in it, it became clear that motivation was at the core of this dynamic and emergent process that results in the accomplishment of work in and across several locations. The main findings arising from our study revealed three sets of motivational forces driving nomadicity – *choice*, *opportunity* and *obligation* – and their articulation. In documenting the lives of our participants we noted that nomadicity occurs as a complex emergence of motivations and actions. Through our study we observed that motivations for nomadic practices are not as clear-cut as depicted in the literature: they can – and often do – overlap. This is why we refer to a spectrum of motivational forces, rather than to three separate categories.

We found Vroom’s definition of motivation for the elaboration of the spectrum of motivational forces useful for our purposes. Vroom defines motivation as “a process governing choice made by persons ... among alternative forms of voluntary activity” [59] cited in [54, p.379]. Hence we suggest that *choice*, *opportunity* and *obligation* are the processes – i.e. motivations - driving people’s decision to engage in nomadic practices. As we are relying on the reflections of academics relating to their nomadicity (as

recounted and observed), only those motivations that they are conscious of are addressed here.

### **Choice as a Motivational Force for Nomadic Practices**

Our data suggests that *choice* is at one end of the spectrum of motivational factors for nomadicity, with participants commonly associating their engagement in work at a range of sites with choosing to be there. In fact, this was the main difference that participants mentioned when comparing their approach to work-life to nomadic tribes. Most of the participants mentioned that pastoral or traditional nomads move by necessity, for survival, while they may choose whether they want to move to a specific location to undertake work or stay where they are, as expected by Makimoto and Manners [37]. Our findings show that academics frequently take up such opportunities, although choice sometimes is not an option due to organisational constraints.

In order to better understand moving to a specific location by choice, participants were asked in the interviews about the reasons that would make them choose to move to or remain in a particular location. In addition, during the shadowing sessions we carefully observed how participants took opportunities to accomplish work at different locations and how they engaged with nomadic practices. It was observed that: (1) once the workplace can be mobilised, i.e. the resources for accomplishing the work activities can be brought to the desired location and (2) there are no strong organisational constraints demanding that the worker must stay in a determined position, then nomadicity becomes a matter of choice – but for diverse reasons. The following sub-section presents the findings associated with the most common reasons given by participants in regard to choosing to move and engage in work in a location of their preference.

#### ***Mood and choice***

Mood and inclination to work were clearly highlighted by our participants, who work with the production of new ideas and knowledge. Regarding the creative part of academic work, the data suggest that this is something that cannot be framed within specific hours and specific spaces:

*[...] I suppose because [of] the nature of work, it’s always with me, so I don’t consider going to work so much because, you know, I’m always working, it only happens to be where it is, so it’s an unfortunate aspect of what we do here, but you can work, you could possibly work all your week hours, and, you know, inspiration comes when it comes, you can’t - I find it very difficult just to exclude certain parts of the day from work. (Tom, Interview)*

This quote illustrates Tom’s way of doing nomadicity so that work gets accomplished wherever he is and whenever so inspired. As he noted during the shadowing session, once he engaged in writing, “inspiration comes where it comes” and, once it comes, people should make good use of it. Jenny’s comment strengthens this argument:

*[...] What I do is I plan ahead because I never know when the mood to work will strike me, I mean, maybe I have to, I have to, maybe I know I have to work home, I have so much on my plate, so I know I'm taking it on in which case I take my work laptop home, but otherwise, I've got two cloud computing connections now. (Jenny, Follow-up Interview)*

Other participants often mentioned that they were constantly planning ahead so that, when inspiration struck them, they were able to set up their temporary workplaces and get the work done. In reality, 'planful opportunism' [44] is one of the key factors associated with mobile and nomadic practices. This factor is often associated with a wish to enhance productivity or with the unpredictability of the environment. Findings on the matter usually draw attention to the fact that workers are always planning ahead to make use of dead time or to be productive in situations when things do not work out as they expected [44, 46, 55]. However, there is no allusion to how 'planful opportunism' is associated with the workers' motivation towards engaging in work, e.g. the instance when Jenny is planning ahead so she can perform some work when the mood to work arises. Our findings thus extend the notion of 'planful opportunism' to include the unpredictability of the workers' mood as one of its sources.

#### *Comfort as a choice criterion*

When asked about their reasons to move to one location rather than to another, participants frequently referred to comfort as one of the main determinants, reinforcing findings from related literature [e.g. 38, 49, 57]. The following quote illustrates this, starting with Tom explaining why he considers one of the cafés in the university campus to be a workplace for him:

*I don't really like working in the office, it's ok now, but especially in the summer we don't get good ventilation in this office so it can become really stuffy in the afternoons so to be able to go to a place, you know, a café in work, is a nice change of pace and tends, well it can be more comfortable. There's coffee there. (Tom, Interview)*

Tom spends most of his work time at a café on campus making it his main workplace. Because of the nature of his research, he just needs to bring his laptop with him and to access an Internet connection: once he does that, he can do his work properly. Still with regard to comfort, on the day that he was shadowed, Tom started his work at an Internet café near his house. As he got there, he noted the comfortable environment that the place offered to him, explaining that he consciously chooses that place over other similar places in town because they make the best latte in the city.

Interestingly, the motivations to go to those locations were not directly associated with the availability of technological resources for accomplishing work, e.g. access to the Internet. Instead, the (intrinsic) motivation was associated with another resource that can make a work session

enjoyable, e.g. refreshments. Access to the Internet, something that participants also considered a determinant in the choice of a location and that would sometimes be essential for them to accomplish their tasks, was usually in the background of their discourse; they often explained this by noting that nowadays Internet connectivity has become so ubiquitous that it would be difficult to be in a place that does not offer that resource, so they would not need to worry about it – although we will show later how some of our findings challenge this assumption.

#### *Prospect of enhanced productivity*

Choice of work location also arose as an issue extrinsically related to attempts to enhance personal productivity i.e. an external outcome [48]. Participants often mentioned that the choices they make about where to work, when to engage in work and what tools to take with them are made in terms of being at their most productive, so that they can do whatever they have to do in the best way they can:

*Sometimes you do need to be in a different space to be productive. So as to say like, you go to a proposal writing meeting, and just not being in the office, being somewhere else, like a hotel, and that's what you are there for, concentrates you very well. (Lucy, Interview)*

Lucy goes on to recount a situation where all members from a collaborative project bid she was part of decided to fly to London and congregate in a hotel near Heathrow Airport as a strategy for proposal writing. She concludes:

*So I think being somewhere else can be very productive for certain jobs and I find that for writing this is very, very good: it just breaks the routine [...] But it's this idea of putting yourself physically in another space and, it's amazing how different you feel about what you have to do... (Lucy, Interview)*

Kate adds the element of personal choice to Lucy's argument on selecting a place based on the prospect of enhanced productivity by explaining why she prefers to work off campus:

*I work off campus not because I have to but because it suits me better and I find I'm more efficient. So it's not because the resources are at home and they're not in my office, it's because I'm more productive [...] in terms of the fact that I might work at home a good bit, is more a personal choice rather than the resources only being there. (Kate, Interview)*

The findings above resonate with findings from Liegl [35], whose analysis shows how workers in their everyday lives seek out and enact work environments which boost their productivity and use breaks and moves to kick-start their creativity. In Kate's case, the availability of the resources necessary to carry out the work is in the background once again, which suggest that digital technologies are less of a concern as they become increasingly available and pervasive in people's lives. Nonetheless, they do command

attention, particularly in situations when they paradoxically become a hindrance. Indeed, the data suggest that participants pay special attention to Internet connectivity as a potential deterrent to productivity:

*[...] to do my research I only really need an Internet connection. And often that is actually a disadvantage, if I am deep into writing I often like not to have an internet connection so I don't have the possibility of wasting time, you know, browsing the web instead of working on writing, so certain times I'll choose a café where there isn't any wireless just for that purpose. (Tom, Interview)*

According to Tom, having access to the Internet can become a distraction and, consequently, his productivity may slump. Therefore, in situations where he needs extra focus to increase his productivity, he goes to locations where he does not have access to that resource. The consequence of going to such locations, according to him, is that mobility of the workplace becomes more difficult and requires extra planning: since he would not have online access to his resources, he would have to plan very well beforehand which activities he would like to develop and to take with him everything he needs. Yet, the extrinsic motive of enhanced productivity animates these pre-planning activities.

Besides choosing locations where a potentially disruptive technology for the task is not present, choosing locations that allow for peace and quiet is another strategy that the participants follow in order to enhance their productivity:

*My preferred working place is really at home. Definitely [...] There is more peace of mind there. People don't knock on the door and walk in. It's just a comfort thing really. It's where you can really work. You can focus your mind in a different way in that situation rather than in an office or a cubicle. (James, Interview)*

The 'knock-on-the-door-and-walk-in' factor was mentioned by several participants as a reason for low productivity: they often said that staying in the office can be very disruptive, and because of this they would frequently choose to work from home or from other locations, especially when they need to be more productive. Maeve mentions this and further adds:

*(...) And also if I am here I am always tempted to check my e-mails and almost invariably there are somebody waiting for something that I haven't done or... Sometimes I even go over to the library and I go up, near the journals area; I just find that I can be much more, sort of focused. (...) I find that sometimes in here I get distracted by all sort of things (...), while if I go away from the space – and doesn't matter if I am on the train, in [a Local restaurant], in the canteen, or in any of these spaces. I often do that: I go through all the various canteens, get a cup of coffee, have my thing and I say to myself, OK, I give myself 2 hours and see how much progress I can actually make in this piece of work; and nobody is calling me and I am not answering the phone – I*

*usually leave my mobile phone behind – and I find that it can be far more creative way to work. (Maeve, Interview)*

While the participants seek to exclude factors that would distract them, given some of the locations they mention, it is questionable whether they could really avoid disruptions at those locations, or that their productivity would not be hindered. For instance, participants constantly made reference to cafés and public locations as potential workplaces where better productivity is achieved. However, it is plausible to ask whether in fact those locations might not be a source of disruption as well, or whether the background noise and the constant movement of people in the location would not hinder their productivity even further. Tom suggests that this does not happen to him:

*[...] Curiously I think there are fewer distractions in a way [when I'm working at the campus café], because I'm away from all my resources, you know, the desk is pretty clean right now, but there's often things pending sitting here and there are people coming in and out whom I work with and if I go up there the only thing that distracts me is what I take with me and what goes on around me but if you are in an environment like that where there is a lot of background activity it all turns to kind of merged together and form more of a backdrop than a distraction. (Tom, Interview)*

Tom's quote implies that as long as the happenings in a public location are not directed towards him, they would merge in the background and would not be distracting. This is a consistent finding across the participants, however, there is an important caveat to be made, as not everybody would experience those disruptions in the same way as Tom and others do. For example, Aoife stated that she finds the sound of other people talking very distracting, and thus is unable to work in environments such as cafés. In contrast with the views represented by both Tom and Aoife, Jenny suggests that for some activities, she prefers to stay at home where she can have peace and quiet, whilst when it comes to other types of activities, she prefers to work in public locations:

*In certain kinds of work I find myself more productive with the opposite of peace and quiet. That's another reason why I might go to a cafe with my laptop. Especially [with] certain kinds of [research activities] and certain kinds of writing. In those cases going someplace noisy actually helps. It's about not being interrupted but it's also about a low level of distraction constantly. It helps me actually focus as opposed to banging my head against a wall in a quiet room trying to figure out where to move. [...] The reasons I pick are the level of noise or distraction, whether or not I want a beer or coffee or food, and whether I need peace and quiet. (Jenny, Interview)*

Despite the different points of view presented by Tom, Aoife and Jenny, the fact that environmental disruptions can actually work in favour of productivity is an intriguing finding, since productivity is commonly associated with



peace and quiet and the absence of distractions [26]. Nevertheless, the most important thing to note in all the quotes presented throughout this sub-section is the focus on productivity and how people carefully choose their location of work in an attempt to enhance it. Intrinsic motivations such as the pleasure of access to coffee or a quiet environment are also present. These are important findings that advance our understanding of the reasons why people engage in work in assorted locations.

#### **Better technological support as a choice criterion**

A third criterion regarding choice mentioned by the participants was access to better technological support:

*So what makes me choose a place over another? Let's think about the Internet connection first of all. So if I prepare a lesson would I do it from home or would I come here [in the office]? The Internet connection at home sucks (...) I don't have a proper Internet connection to allow me to watch videos at home. So I would come here [the office]. Sometimes I cross the road from home to [a local hotel] because they have good Wi-Fi and if I need to do work and my internet connection is down, I go to the hotel, I have a coffee and I do my work from there. That happens pretty often. (Shannon, Interview)*

Although this was not evoked as frequently as the two criteria previously discussed, i.e. comfort and prospect for enhanced productivity, it shows some of the motivations behind the nomadic strategies that people may develop. Although Shannon could perform an activity at her home, her inadequate Internet connection underpinned her motivation to move to the university, or to another location, like the nearby hotel, where she has access to that resource. Philip also addresses this issue when explaining how his mobility patterns have changed over the past few years:

*Now there was a stage, basically there was a blip at the point where the Internet connection was so much better here than at home (...). So there definitely were times when you'd come in here on an evening or Saturday in order to either download a document, send a document, do something, which I haven't really done the last two years because my Internet connection at home is good enough. (...). (Philip, Interview)*

Therefore, the quality of the technological apparatus in place may influence the decision to work at a location or in another.

The data excerpts presented above point towards diverse nuances associated with choosing a location for work. When it comes to comfort and prospects for enhanced productivity, the data suggest that the process becomes very personal and it cannot be taken for granted to go either way. These data also highlight the fact that when people choose one location over another, they do not only think of the resources for the accomplishment of the work in question, but about those factors that will allow them to experience the location in such a way that it can become an actual

workplace, suggesting a notion of place that goes beyond the simple idea of a physical space equipped with some sort of technologies and exposing the role of place in nomadic practices, as extensively discussed in the literature [9, 35, 47].

#### **Opportunity Driving Nomadicity**

Another driving force that emerged from the data as a motivational factor for nomadicity is opportunity. It refers to situations when a need arises or workers are requested to accomplish a task in a given location. As such, they have neither chosen to move to that location to carry out that specific activity, nor have they been forced to move to that location to work. Instead, workers are already at a location and go on to engage in and accomplish some work there because an opportunity for it arises. Once people take on work activities opportunistically at different locations, they engage with an ecology of practices and spontaneously create temporary workplaces in these locations by using the resources they have with them and those of the infrastructure available to accomplish work. This section presents the sources of opportunities observed in the fieldwork data, including when resources such as time, wireless connection or relevant people become conveniently available, and we now elaborate on how the availability of such resources creates opportunities for nomadic practices.

#### **Time availability**

Our findings show that the participants' lives are extremely busy and time is a scarce resource for them. They try to be the most efficient that they can, often embracing what Elaine describes as a 'frenetic lifestyle'. In coping with their busy lives, the participants say that they take every opportunity allowed to them to stay on top of things. Kate illustrates how opportunity often drives her to engage with work in locations that she judges convenient:

*So for instance, when I'm going from one meeting to another meeting I can check my email. So when I'm in the office I'm a bit more productive because I don't spend all day answering emails, I've those done by the time I get to the desk. [...] It just means that if you're sitting waiting for somebody at a meeting you can get some work done. I can fill in all the spaces in my day. (Kate, Follow-up Interview)*

Opportunity is a strong factor in Kate's nomadicity. This became even more evident as the data relating to her work practices were triangulated. For instance, during one of the shadowing sessions she delivered a lab session where students were to work on their own in a previously briefed assignment. Her presence in the lab was required in case the students had any doubts or questions about the assignment, or about the technologies they were using for it. As the students were working away, time became available for Kate to engage in other work activities. Hence she decided to edit a website she volunteered to be the webmaster for.

Similar practices were observed across several other participants. For example, Shannon emphasised in her follow-up interview that the availability of time may lead her to engage in work tasks that she had not planned to accomplish in a specific location. In an example taken from her diary, she mentioned that she was working at a nice café, when she decided to try and learn how to use the commenting facility of her Kindle to comment on PDF documents. When questioned about this in the follow-up interview, she went on to say:

*Because I had plenty of time [I decided to give it a go]. There was nobody rushing me and it was lovely and playful, I was sitting there and trying to see what it can do and because there was wireless I could also go on the Internet and search words and stuff, so I was exploring the functionalities. There was no pressure. (Shannon, Follow-up Interview)*

Also during one of her shadowing sessions Shannon engaged in several other activities in-between work sessions as time became conveniently available to her, such as during the breaks between teaching slots. In these breaks she took out her smartphone, checked her e-mails and tried to resolve issues arising depending on their level of complexity. For instance, during one of the breaks she replied to a message from a student and checked an abstract received from someone who was coming to visit her research group. She also tried to reschedule a meeting with another student who had missed a previous appointment. For that she checked her digital calendar in an attempt to find a time slot available in that week to meet the student, which she could not find. These were only a few examples of how various bits of work got opportunistically accomplished in different locations as time became available to the participants.

These kinds of activities are related to a key factor of nomadic practices that Perry et al. [44] refer to as making effective use of dead time. However, the notion presented here differs slightly insofar as it is not restricted to previously planned activities like those in the abovementioned study. This can be associated with the different work contexts investigated here. Perry et al. [44] investigate nomadic movements involving long-distance trips, with a focus on the accomplishment of work in the dead time occurring during the trip and the specific activities that led the person to travel in the first place. Thus, the authors suggest that in those situations, workers could anticipate the dead time they would have on their hands beforehand, i.e. they would know in advance the time they would spend in transit or in between work sessions. Hence, they would prepare other activities to fill in the spaces and would engage in those activities as the time slots arose. The activities that we observed were not associated with long or short trips since nomadicity is a process that refers to the development of work activities at different locations independently of the distance between those

locations [21]. Instead, the activities engaged in arising from the opportunities available were much more organic and serendipitous. They did not strictly require previous planning, although some sort of planning for effectively using dead time could be observed when participants mentioned longer-distance travelling.

#### *Technology availability and opportunity*

In his interview, Philip suggests that when time becomes available to engage with work these tasks are frequently also dependent on availability of specific tools. Digital technologies are among these tools, as is observable in Aoife's comment:

*I have recently started to bring the laptop again, one reason is the wider availability of broadband on the train so I can get a lot of emailing done which tends to take up a lot of time in the office. Another reason is that I have less time now since having a baby and I feel I need to use all 'dead time' such as a train ride to get stuff done. I can also get reading done (of student work and other articles etc.) on the laptop without having to print out a lot of stuff. (Aoife, Follow-up Interview)*

Aoife lives in a different city, and comes to the university once a week. During her first interview she mentioned that she would not bring her laptop to work because she had a desktop computer available in her office and because she found her laptop too heavy to carry along. However, things changed since she gave birth to her child. As reported in the previous quote, time for work was more limited after the baby's arrival so she was forced to search for this resource in places that she would not have considered before, such as during her commute.

Nonetheless, time itself was not the only determinant for Aoife engaging in work on the train. Her statement suggests that broadband connectivity, which is now widely available on trains, created the opportunity for her to become involved in work more easily during her commuting time, an opportunity that she would not now miss given childcare time pressures. It is worth highlighting that Aoife had the opportunity to work on trains before broadband connectivity became widely available, but, as she says, she would have had to print a 'lot of stuff' and that could make things more difficult.

This account exemplifies how diverse kinds of opportunities (often in conjunction with other pressures) work together to shape decisions to work at different locations. Above all, Aoife's need to be available for her child led to heightened attentiveness to opportunities for nomadicity: Aoife does not chose to move to the train to accomplish her work tasks, so work on the train is not determined by a choice or an obligation to work. Instead, she finds herself on the train because she needs to commute and once she finds time and technologies available she sets up a temporary workplace where she can accomplish work.

### *Other people's availability*

The presence of other people also created often unexpected opportunities for nomadicity. This was particularly evident in the data collected during the shadowing sessions. For instance, on the day Jenny was being shadowed, she had to leave her office a couple of times to do things in other places within her department. As she was wandering through the department, she engaged in several activities at different locations. At a given moment, she decided to go downstairs to get some information about a piece of equipment located in one of the department studios and, before returning to her office, she decided to stop by the canteen to grab a coffee. On her way back to the office, she met some of her students and discussed a class project with them. In a few minutes they scheduled a meeting and decided the next steps to be taken. This episode portrays nomadic activities emerging from an opportunity generated by the availability of others: Jenny did not move to the canteen to meet with the students or to discuss project-related activities. She also could have chosen to let that opportunity pass. However, she decided to take it and do some work that she would have needed to do from other places and at another time if she had decided to go straight back to her office.

Similar episodes were observed with other participants and, although they might be considered mundane, as Tom would say, they happen every day and compose a nomadic ecology of practices. Therefore, by paying attention to these elements we gain a better understanding of the dynamics of nomadicity and the issues that may arise from it.

### *Opportunity as a result of emergent needs or requests*

Opportunities can stem from emergent needs or requests as people find themselves in places where they were not planning to engage with the activity in question. This means that they can be in a given location having fun or being involved in a social activity when they receive a work-related request. For instance, Jenny recounted about when she was abroad visiting family:

*When I was travelling I went to see my uncle who is very ill and something work related did come up and I needed to get a file (...) My hotel had wireless but they had locked it up badly so I couldn't send email because their firewall was poorly done. So I went to my uncle's who I knew had [...] a modem, so what I ended up having to do was hack my way through, because I couldn't get the modem to work on my computer, it was so old and it only ran with his old computer, so I kind of had to hack my way through to the UNIX level to be able to send an email through web technology. (Jenny, interview)*

Jenny's account depicts how a need can lead people to become involved in work at locations where they might not be expecting to. Furthermore, it illustrates all the work needed for the establishment of a temporary workplace in that location and to get access to the resources that are necessary for accomplishing the task. It also portrays a

situation where technology configurations might complicate the performance of work (i.e. at the hotel) rather than facilitating it.

As for situations when a request creates opportunities, Shannon reports in her diary how she was asked to sit on a discussion panel unexpectedly when participating in a festival when researching a particular phenomenon. In that case, because of the festival organisers' request, Shannon engaged in an activity that was not on her 'to-do list', in a place where she was not expecting to engage with that kind of work at all. Another example of how a request can lead to work in a particular location was observed while shadowing Shannon. On that day, Shannon decided to leave the classroom for a few minutes to take some fresh air. As she left the room, she automatically took out her smartphone and started reading some messages. Although this was one of the nomadic activities that she engaged in due to time availability, the activity of interest for this discussion emerged when a student came out the classroom and asked if she had a minute to talk about her research project. At that moment, an opportunity arose to take care of some administrative work she had not expected to conduct at that moment. Upon the student's request, she went on to discuss the project there and then and to take some decisions on it.

In summary, when a work-related need arises, or a work-related request is made in different locations, an opportunity to engage in work at these locations is created. As discussed earlier, that opportunity can be taken by the worker or not, according to their availability or willingness. As such this aspect of nomadicity intersects with the factor of personal choice.

### **Obligation as a motivating factor**

The third and last driving force behind nomadicity identified in the data is *obligation*. The participants often referred to situations where they would have no choice but to go to a specific location and to work from there. Claus exemplifies it when explaining why he considers teaching a time and place bound activity:

*Well, with teaching I don't really have a choice, I'm scheduled, I have [a] timetable. 9 o'clock I'm in this room, 10 o'clock I'm in this room. (Claus, Interview)*

In the academic context of our study delivering lectures was frequently associated with the notion of a bound activity. Although it can be argued that lecturing *per se* is a potentially flexible activity, within the university system lectures are usually bound to a time and location as this guarantees that some necessary resources for the activity (e.g. a lecture hall and its infrastructure) will be available and enables or facilitates coordination among the members of the group that will take part in the activity.

In fact, in the literature it seems that face-to-face activities (e.g. attending conferences, meetings, collocated collaborative activities, etc.) are the main source of 'forced'

nomadicity [44, 55]. These types of activities usually constrain the choice element commonly evoked by participants when talking about their lives, as Tom explains:

*That said [that I am nomadic by choice] there is an exception, certainly travelling which is a necessity, to go to conferences and meetings and stuff. You can't leave that other work at home, so it has to travel with you, and that is an example, I suppose, of where one is travelling to work, taking along one's tools of the trade or whatever resources. (Tom, Interview)*

This is understandable since these types of activity usually require that all people involved agree on a suitable location for a meeting, or, in the case of larger groups or communities, that a leader or committee makes a decision about location and dates to which all would have to adhere. This situation resonates with the literature: for instance, when Perry et al. [44] and Su and Mark [55] present meeting people as the main reason for engaging in nomadicity, or when Rossitto [46] addresses nomadicity as done by a student group, they are reporting on situations in which people have to move to specific locations to engage in face-to-face activities.

However, although a constraint is imposed once the decision about the location is made, such constraint may be removed when the involved parties judge it feasible. For example, people can potentially decide to go and work at a specific location and, once they are there, they may decide to move to another one:

*...let us take mobility in it broadest sense, so that is me personally being able to go to wherever I need or want to. It means that I can go quite easily to my colleagues' offices and things follow me there, right? I don't need even to take my laptop along, because a lot of stuff is on servers. But if we are having a really intense collaboration and we need to be insulated from the rest of distractions, we can go together to a café say, or to just some [other place], [as for example] to my house or to their house. I frequently, you know, the [hotel near my apartment] has wireless access everywhere. I often have lunch there with colleagues if we are working on intense projects. Go upstairs and nobody can find you. It's great. (Tom, Interview)*

This indicates that, even when a restriction is made (e.g. when one of the collaborators say "let's meet in my office"), activities continue being potentially nomadic and they may change according to the dynamics of the process (e.g. in the middle of the work another collaborator may suggest a move). This was observed while shadowing James. On that day, he went to a museum in the city to discuss a project with partners. At the beginning they decided to carry out the discussion at the museum restaurant; however, at a later moment James mentioned that it would be easier for them to understand his proposal if he explained it in a room where the idea would be

actually implemented. Once he proposed this, the two other collaborators agreed to move to one of those rooms in the museum, and the discussion continued there: the location within the museum changed and a new temporary workplace was set up. This illustrates the different scales of movement encompassed by nomadicity (i.e. movement between locations geographically close, like in the same building or city, or distant, such as different cities or countries), and different constraints and conditions for moving. In addition, it reinforces the idea that face-to-face meetings are not necessarily bound to fixed locations. From the data, the only thing that seems to bind activities to locations is the availability of some resources that are essential and that cannot be moved easily.

To conclude, it is worth mentioning that, although some activities performed by academics may become bound to locations for different reasons, because of the many emplaced aspects characterising their profession, the nomadic aspect of their lives is not reduced.

## DISCUSSION

This study contributes to the field of CSCW by elaborating how nomadicity is motivated. As discussed at the beginning of the paper, the relationship between motivations and nomadicity has not been thoroughly explored so far. Investigating issues of nomadic practices among academics (and other knowledge workers in parallel studies to the one presented in this paper), it became evident that nomadicity is a *dynamic* and *emergent* process. By *dynamic* we mean that this process is continuously changing, i.e. it is constantly reconfigured through the interplay between: (1) the different motivational forces underlying the moment; (2) the ways in which people mobilise their work resources and themselves to new locations; (3) the infrastructure offered by the new location; and (4) the ways in which people make use of the available infrastructure together with other resources they have brought to the site in order to set up their temporary workplaces. Therefore, one can say that nomadicity is directly related to CSCW notions of *improvisation* [14, 42, 61] and *situated action* [56].

The relationship becomes more evident when the emergent aspect of it is taken into account. As stated in the previous section, our findings suggest that nomadicity *emerges* from an ecology of practices. From our findings, this ecology is composed of practices that are shaped by socially embedded motivational factors of choice, opportunity and obligation. These motivational factors combine in complex ways in the nomadicity of academics, which involves the highly relational activities of teaching and research.

The notion of ecology has been used by several authors to refer to a mix of different elements that coexist and are related both to each other and to the context within which they exist [4, 40, 53]. In turn, the study of practices around collaborative work and social interaction has been crucial in the study of nomadicity as some studies demonstrated before [13, 44, 55]. Our findings show that people engage

in a series of different practices as they go on to accomplish work in multiple locations. These practices comprise of different *strategies* – e.g. bringing the laptop when uncertain about the information and technological resources needed to work, or being prepared for when the mood to engage in work arose, as suggested by Jenny when talking about her reasons to engage in nomadicity; *routines* – e.g. assembling the resources for a work session, then moving to a new location, setting up a temporary workplace, and doing the work before moving to another location; and *other nexuses of “doings”* – e.g. receiving phone calls from collaborators at home, buying lunch in a restaurant and having it in the office, etc. –, all of which combined in myriad ways in the context of the participants’ work-life.

This emergent ecology of practices shaping nomadicity means that the accomplishment of work in diverse locations becomes *gradually* observable as people access work resources, get in contact with people, produce new knowledge, disseminate it, and so forth. It means that people progressively put into action *practices* that lead to the *mobility of the workplace* to a particular location and the accomplishment of work from there. It is not as simple as saying “let me be nomadic now”. It is more like choosing to go to a specific location because the environment is enjoyable or it offers good food (intrinsic motive) and bringing resources that would allow working from there – e.g. when Tom or Jenny go to work in cafés, or when Maeve goes to the library. It also emerges when resources as time and technology become available in certain locations so work can be done (e.g. when Kate checks e-mails while waiting for somebody, or when Aoife works on the train), or when there is an encounter with a specific individual or individuals - e.g. when Jenny met her students having left her office to do something else. Another example is when certain tasks are requested whilst one is located in a particular place – e.g. when Jenny was visiting her uncle, or when Shannon attended the festival and ended up being a panellist. Finally, we found much evidence that academics move to a location to conduct a particular aspect of their work but continue to engage in other work activities via electronic connections – e.g. when Tom talks about multi-tasking while attending conferences.

Hence, as people go on to engage in work in and across different locations, certain practices in the *nomadic ecology* come together and once work is accomplished (or aborted) they fade away, as emergent structures usually do. According to Wenger [62], elements of emergent structures “*come together, they develop, they evolve, they disperse, according to timing, the logic, the rhythms, and the social energy*” (p.96) of the process.

In this sense, we see nomadicity as very similar to the notion of *improvisation* [14]. As improvisation, nomadicity is “*simultaneously rational and unpredictable; planned and emergent; purposeful and blurred; effective and irreflexive;*

*perfectly discernible after the fact, but spontaneous in its manifestation*” ([39] cited in [14]).

However, although emergent, nomadicity is also situated – as requires *improvisation*: It involves planning sometimes, especially in situations where the motivations leading to nomadicity lies in the *choice* or the *obligation* regions of the spectrum previously introduced. As Perry *et al.* [44] and Su and Mark [55] observe, people who engage in nomadicity frequently *plan* their work sessions away from their official workplaces and strategise about how they can be in contact with collaborators in the office and how to work in “dead time”. However, given the unpredictability of the process, they often veer off of their plans and respond to the circumstances they find themselves in. So it frequently comes down to *situated actions* – especially when it comes to the *opportunity* region of the nomadicity spectrum. From our perspective, these findings provide a relevant theoretical contribution to advance the state of the art of CSCW research on the matter.

We conclude our discussion by elaborating on the trustworthiness and limitations of our findings. We are aware that, in order to deeply understand the motivations of people to engage in nomadic practices, it is very important to understand their daily work-life. Ideally, field studies on nomadicity should be conducted on the basis of extensive periods of observation, with the researcher shadowing the participants for several days (or months, as anthropologists would do) and incorporating observational data on workers in their homes, cars, trains, and airplanes across potentially different continents, at all hours; however, as repeatedly observed by some authors [12, 46, 55], this would be prohibitively expensive for the researcher and, additionally, shadowing would be intrusive for participants, as the borders of their personal and work lives are blurred.

As discussed in the Methodology section, by using a range of data collection methods and bringing the combined data sets together in the analysis, this study provides a textured account of the everyday work-lives of academics. As such, it provides insights into the specific ways in which nomadicity works in their lives. For example, practices reported in interviews could be closely observed for accuracy in the observation sessions and diaries facilitated the contextualisation of nomadicity in the events of any one day. The iterative quality of the data collection process allowed for a better understanding of the emergent issues and for filling in the gaps left in previous data collection activities. For instance, Aoife was pregnant during the first round interview and the shadowing session. She mentioned then that she would not work on trains or in environments like cafeterias or hotels because she could not concentrate in those locations. Three months after, she had had her baby and during the follow-up interview she acknowledged that she was now forcing herself to work on trains and in the locations she would avoid before, so that she could “buy” some more time to spend with her new-born child. This

gave us further insight on how motivational forces drive her nomadicity.

The fact that not all participants were able to engage in all data collection activities – or at least not in the same frequency as some others – could be seen as a limitation of the study, as it might have prevented some issues that became noticeable from the data collected from a participant to be observed in the data collected from other participants and/or contrasting views on a particular issue to emerge. And, while this may be the case, overall, the data analysis conducted in the different data sets showed that the data collected from the different participants resonated and supported each other.

Of course the issue of the researcher as ‘insider’ or ‘outsider’ also arises in the context of academics studying academics. The literature on methodology points to the strengths and weaknesses of insider and outsider status [22]. Although shared status as academics afforded access to and a common ground with participants, assumptions of similarity can mean that practices and experiences are not fully interrogated, or are clouded by the researcher’s own experiences which can be projected onto participants [22]. However, as this study was conducted as part of a wider team of researchers and as part of a wider project comprising other parallel studies, a reflexive approach was adopted from the beginning in which assumptions were made explicit and bracketed in order to remain as open as possible to the specificity of individual accounts and practices of participants in different sectors of the knowledge economy. While ‘outsider’ researchers might have identified different factors, we believe that our deep interest in the experience of participants and commitment to accurate representation as well as constant reflexivity has produced a reliable and credible account of nomadicity amongst this cohort of academics.

Another limitation of this research concerns the issue of generalizability. As widely acknowledged, although qualitative research allows for deep accounts of the researched subject, wide generalisations are not possible, especially because of limitations of the sample size. Nevertheless, findings can indeed be transferrable to other contexts for knowledge work [10]. For instance, similar patterns were evident in the data sets relating to creative entrepreneurs and ICT workers that were part of our larger research project. By studying differently located ‘knowledge workers’ we are able to compare the extent to which nomadicity is evident across these sectors and the different configurations of contextual and motivational factors. For example, motivations relating to the unpredictability of creative moments were much more common for academics than for creative entrepreneurs who also identified this as a motivational factor [63]. To understand the dynamics and significance of nomadicity for knowledge workers, it is important to be able to identify the ways in which the structure and demands of different

sectors shape work/life practices and motivations. So, while our findings cannot be generalised to all knowledge economy workers, they highlight the ways in which, for example, a profession that requires considerable face-to-face service delivery in a campus-based organisational environment shapes nomadicity. This forms the basis then for comparative studies with other sectors and employment conditions. Such comparisons are central to CSCW research on these topics.

Finally, the methods employed produce data relating to conscious decision-making processes and observable practices. Motivational factors that cannot be captured by these methods would involve a very different methodological approach. Although, like all research, our study identifies areas that need further investigation, the methodological approach adopted has enabled the production of new knowledge about the nomadic practices of academics and the implications for CSCW research on nomadicity. The use of complementary data collection instruments is necessary to document and understand these practices in nuanced ways that enable the multi-faceted nature of nomadicity to be revealed [15].

## CONCLUSIONS

The empirical findings discussed in the previous sections illustrate the three sets of motivational forces that we have identified as underpinning nomadic practices and articulated in detail: *choice*, *opportunity* and *obligation*. The majority of the examples presented here can be seen as representing extrinsic (e.g. outcome oriented) motivation; however, intrinsic motivation was a complementary or secondary motive in many cases. As discussed throughout the paper, motivations are in themselves multi-faceted: choice, for instance, is connected with mood, comfort, prospect for increased productivity as well as with the availability of certain technological resources. Opportunity is also related with technology availability, but extends to other resources such as time and the availability of collaborators. Furthermore, this area of the spectrum also involves work emerging from unexpected requests or needs. Obligation, in turn, is associated with institutional policies and resources that can only be found in specific locations, while people tend to re-negotiate being bound to a location whenever possible or feasible. While this paper has focused on a particular cohort of participants – academics – our findings also resonated with data gathered from participants across other knowledge-intensive professions, which we discuss elsewhere.

Therefore, in documenting the lives of our participants we noted that nomadicity occurs as a complex emergence of motivations and actions that can overlap. This is why we refer to a *spectrum of motivational forces*, rather than to three separate categories. Furthermore, we demonstrated how the roles of computer technology, of infrastructure and of resources are also more nuanced: they are not always “enablers” nor can each of them be considered in isolation,

or as the only factor that underpins the decision to move. Looking at technology as a meditational tool in the CSCW tradition without assumptions of value is a more appropriate way to understand it in the context of nomadicity. We argue that this more nuanced account of nomadic practices that takes into consideration a spectrum of motivational forces and the meditational role of technology is crucial for a deeper understanding of the notion of nomadicity and what it entails. Our findings suggest that ‘ever-readiness’ regarding work is important when the work itself becomes mobile due to myriad and expanding environmental, technological and infrastructural affordances. Such flexibility means that choice and constraint, opportunity and need are negotiated by workers on a more intense and frequent basis than in more location and time specific work contexts.

The findings we have presented in this paper contribute to the tradition of in-depth studies of nomadic practices within CSCW. Furthering this strand of research is important to account for such practices as they are occurring in people’s lives, as this challenges assumptions regarding their character or desirability often made within other fields as noted by B scher [11]. The identification of this spectrum is an important advancement on the understanding of nomadicity for it allows a better comprehension of how the process is triggered and how it unfolds. It also sheds light on how nomadicity connects to other important CSCW concepts – e.g. improvisation and situated action. This may provide relevant insights to those who intend to design solutions, aids or policies for people who engage in such practices.

In particular we propose that by further understanding the motivations behind technologically-mediated nomadic practices we provide relevant material for practitioners from several subfields of Computer Science such as CSCW, Human-Computer Interaction, Interaction Design and Ubiquitous Computing, to work on the elaboration of new design directions for the development of new and innovative technologies to support people who engage with them. Our study yields relevant data on technological paradoxes concerning how technologies can at the same time enable and disable nomadic practices, how they can simplify and yet add complexities to the lives of those who engage in nomadicity and how they can support good and bad work/life practices. This can spur more work focusing on technological paradoxes and design ideas to mitigate them.

#### ACKNOWLEDGMENTS

The authors would like to acknowledge that this research was part of the “Nomadic Work/Life” project at the University of Limerick (Ireland). The project was funded by the Government of Ireland and EU Regional Development Fund Irish Social Science Platform (ISSP) Initiative.

#### REFERENCE

1. Lioness Ayres. 2008. Thematic Coding and Analysis. In *The SAGE Encyclopedia of Qualitative Research Methods*, Lisa M. Given (ed.). SAGE, Thousand Oaks, 867-868.
2. Kim Barbour and David Marshall. 2012. The Academic Online: Constructing Persona through the World Wide Web. *First Monday*. 17, 9 (September 2012). <http://dx.doi.org/10.5210/fm.v0i0.3969>
3. Jakob E. Bardram and Claus Bossen. 2003. Moving to Get Ahead: Local Mobility and Collaborative Work. In *Proceedings of the Eighth European Conference on Computer Supported Cooperative Work 14–18 September 2003, Helsinki, Finland*, 355-374. [http://dx.doi.org/10.1007/978-94-010-0068-0\\_19](http://dx.doi.org/10.1007/978-94-010-0068-0_19)
4. Gregory Bateson. 1972. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution and Epistemology*. Jason Aronson Inc.
5. David Boud. 1999. Situating academic development in professional work: Using peer learning. *International Journal for Academic Development*. 4, 1: 3-10. <http://dx.doi.org/10.1080/1360144990040102>
6. David Boud and Angela Brew. 2012. Reconceptualising Academic Work as Professional Practice: Implications for Academic Development. *International Journal for Academic Development*. 1-14. <http://dx.doi.org/10.1080/1360144X.2012.671771>
7. John M Braxton. 2011. Understanding the Defining Aspects of the Academic Profession Through the Scholarship of Integration. *The Journal of the Professions*. 6, 1: 1-7.
8. John Brennan, Jurgen Enders, Jussi Valimaa, Christine Musselin, and Ulrich Teichler. 2008. *Higher Education Looking Forward: An Agenda for Future Research*. European Science Foundation, Strasbourg.
9. Barry Brown and Kenton O'Hara. 2003. Places as Practical Concern for Mobile Workers. *Environment and Planning*. 35, 9: 1565-1578.
10. Allan Bryman. 2008. *Social Research Methods* (3rd ed.). Oxford University Press.
11. Monika B scher. 2014. Nomadic Work: Romance and Reality. A Response to Barbara Czarniawska’s ‘Nomadic Work as Life-Story Plot’. *Journal of Computer Supported Cooperative Work*. 23, 2: 223-238. <http://dx.doi.org/10.1007/s10606-013-9194-6>
12. Monika B scher, John Urry, and Katian Witchger (eds.). 2011. *Mobile Methods*. 1st ed. Routledge, New York, NY.
13. Leida Chen and Ravi Nath. 2005. Nomadic Culture: Cultural Support for Working Anytime, Anywhere. *Information Systems Management*. 22, 4 (Fall 2005): 56-64.

- <http://dx.doi.org/10.1201/1078.10580530/45520.22.4.20050901/90030.6>
14. Claudio U. Ciborra. 1999. Notes on improvisation and time in organizations. *Accounting, Management and Information Technologies*. 9, 2: 77-94.  
[http://dx.doi.org/10.1016/S0959-8022\(99\)00002-8](http://dx.doi.org/10.1016/S0959-8022(99)00002-8)
  15. Luigina Ciolfi and Aparecido Fabiano Pinatti de Carvalho. 2014. Work Practices, Nomadicity and the Mediatonal Role of Technology. *Journal of Computer Supported Cooperative Work*. 23, 2.  
<http://dx.doi.org/10.1007/s10606-014-9201-6>
  16. Luigina Ciolfi, Breda Gray, and Anthony D'Andrea. 2012. Social Aspects of Place Experience in Nomadic Work/Life Practices. In *Proceedings of the 10th International Conference on the Design of Cooperative Systems*, 183-196.
  17. Burton R. Clark. 1997. Small Worlds, Different Worlds: The Uniquenesses and Troubles of American Academic Professions. *Daedalus*. 126, 4: 21-42.  
<http://dx.doi.org/10.2307/20027457>
  18. Burton R. Clark. 1998. *Creating Entrepreneurial University Organizations: Pathways of Transformation*. Pergamon.
  19. Anthony D'Andrea, Luigina Ciolfi, and Breda Gray. 2011. Methodological Challenges and Innovations in Mobilities Research. *Mobilities*. 6, 2: 149-160.  
<http://dx.doi.org/10.1080/17450101.2011.552769>
  20. Gordon B. Davis. 2002. Anytime/anyplace Computing And the Future of Knowledge Work. *Communications of the ACM*. 45, 12 (December 2002): 67-73.  
<http://doi.acm.org/10.1145/585597.585617>
  21. Aparecido Fabiano Pinatti de Carvalho. 2014. Collaborative Work and Its Relationship to Technologically-Mediated Nomadicity. In *Proceedings of the 11th International Conference on the Design of Cooperative Systems (COOP '14)*, 209-224.  
[http://dx.doi.org/10.1007/978-3-319-06498-7\\_13](http://dx.doi.org/10.1007/978-3-319-06498-7_13)
  22. Sonya C. Dwyer and Jennifer L. Buckle. 2009. The Space Between: On Being an Insider-Outsider in Qualitative Research. *International Journal of Qualitative Methods*. 8, 1: 54 - 63.
  23. Ingrid Erickson and Mohammad Hossein Jarrahi. 2016. Infrastructuring and the Challenge of Dynamic Seams in Mobile Knowledge Work. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing*, 1323-1336.  
<http://dx.doi.org/10.1145/2818048.2820015>
  24. Oliver Fulton and Chris Holland. 2001. Profession or Proletariat: Academic Staff in the United Kingdom after Two Decades of Change. In *Academic Staff in Europe: Changing Contexts and Conditions*, Jürgen Enders (ed.). Greenwood Press, Westport, 302-322.
  25. Willian J. Gibson and Andrew Brown. 2009. *Working with Qualitative Data*. SAGE.
  26. Barry P. Haynes. 2007. Office productivity: a theoretical framework. *Journal of Corporate Real Estate*. 9, 2: 97-110.  
<http://dx.doi.org/10.1108/14630010710828108>
  27. Anne Hickley. 2016. Verbatim, Intelligent Verbatim or Edited Transcription? Retrieved 26 May 2016 from <http://penguin-transcription.co.uk/transcription-type-verbatim-intelligent-verbatim-or-edited/>
  28. Justine Humphry. 2014. Officing: Mediating Time and the Professional Self in the Support of Nomadic Work. *Journal of Computer Supported Cooperative Work*. 23, 2: 185-204. <http://dx.doi.org/10.1007/s10606-013-9197-3>
  29. Al James. 2013. Work-life 'balance' and gendered (im)mobilities of knowledge and learning in high-tech regional economies. *Journal of Economic Geography*. (March 6, 2013): 1-28.  
<http://dx.doi.org/10.1093/jeg/lbt002>
  30. Masao Kakihara and Carsten Sørensen. 2001. Expanding the 'Mobility' Concept. *ACM SIGGROUP Bulletin*. 22, 3 (December 2001): 33-37.  
<http://doi.acm.org/10.1145/567352.567358>
  31. Masao Kakihara, Carten Sørensen, and Mikael Wiberg. 2002. Fluid Interaction in Mobile Work Practices. In *Proceedings of the First Global Mobile Roundtable*
  32. Aharon Kellerman. 2012. *Daily Spatial Mobilities: Physical and Virtual*. Ashgate Publishing Limited.
  33. Leonard Kleinrock. 1996. Nomadicity: Anytime, Anywhere in a Disconnected World. *Mobile Networks and Applications*. 1, 4 (December 1996): 351-357.
  34. Mary R. Lea and Barry Stierer. 2009. Lecturers' Everyday Writing as Professional Practice in the University as Workplace: New Insights into Academic Identities. *Studies in Higher Education*. 34, 4: 417-428.
  35. Michael Liegl. 2014. Nomadicity and the Care of Place - On the Aesthetic and Affective Organization of Space in Freelance Creative Work. *Journal of Computer Supported Cooperative Work*. 23, 2: 163-183.  
<http://dx.doi.org/10.1007/s10606-014-9198-x>
  36. Paul Luff and Christian Heath. 1998. Mobility in Collaboration. In *Proceedings of the 1998 ACM Conference on Computer Supported Cooperative Work*, 305-314.  
<http://doi.acm.org/10.1145/289444.289505>
  37. Tsugio Makimoto and David Manners. 1997. *Digital Nomad*. John Wiley & Sons.
  38. Tracy L. Meerwarth. 2008. Disentangling Patterns of a Nomadic Life. In *Mobile Work, Mobile Lives: Cultural Accounts of Lived Experiences*, Tracy L. Meerwarth,



- Gluesing, Julia C., and Jordan, Brigitte (eds.). Blackwell Publishing Inc., Malden, MA, 102-117.
39. Stephen Nachmanovitch. 1990. *Free play-improvisation in life and art*. Putnam.
40. Bonnie A. Nardi and Steve Whittaker. 2002. The Place of Face-to-Face Communication in Distributed Work. In *Distributed Work*, Pamela J. Hinds and Kiesler, Sara (eds.). The MIT Press, Cambridge (USA) and London, 82-112.
41. Christena E. Nippert-Eng. 1996. *Home and Work: Negotiating Boundaries through Every Day Life*. University of Chicago Press.
42. Wanda J. Orlikowski. 2003. An Improvisational Model for Change Management: The Case of Groupware Technologies. In *Inventing Organizations of the 21st Century*, Thomas W. Malone, Laubacher, Robert, and Morton, Michael S. Scott (eds.). The MIT Press, Cambridge, 265-281.
43. Mark Perry and Jacqueline Brodie. 2006. Virtually Connected, Practically Mobile. In *Mobile Virtual Work: A New Paradigm?*, J. H. Erik Andriessen and Vartiainen, Matti (eds.). Springer, Berlin/Heidelberg, 97-128.
44. Mark Perry, Kenton O'Hara, Abigail Sellen, Barry Brown, and Richard Harper. 2001. Dealing with Mobility: Understanding Access Anytime, Anywhere. *ACM Transactions on Computer-Human Interaction (TOCHI)*. 8, 4 (December 2001): 323-347. <http://doi.acm.org/10.1145/504704.504707>
45. Gary Rhoades. 2007. The Study of the Academic Profession. In *Sociology of Higher Education: Contributions and Their Contexts*, Patricia J. Gumpert (ed.). The Johns Hopkins University Press, Baltimore, 113-142.
46. Chiara Rossitto. 2009. *Managing Work at Several Places: Understanding Nomadic Practices in Student Groups*. Ph.D Thesis. Stockholm University, Stockholm.
47. Chiara Rossitto and Kerstin Severison Eklundh. 2007. Managing Work at Several Places: A Case of Project Work in a Nomadic Group of Students. In *Proceedings of the 14th European Conference on Cognitive Ergonomics*, 45-51. <http://doi.acm.org/10.1145/1362550.1362562>
48. Richard M. Ryan and Edward L. Deci. 2000. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*. 25, 1 (January 2000): 54 - 67.
49. Christine Salazar. 2001. Building Boundaries and Negotiating Work at Home. In *Proceedings of the 2001 International ACM SIGGROUP Conference on Supporting Group Work*. <http://dx.doi.org/10.1145/500286.500311>
50. Philip C. Salzman. 2004. *Pastoralists: Equality, Hierarchy and the State*. Westview Press.
51. Kirstie Saumure and Lisa M. Given. 2008. Data Saturation. In *The SAGE Encyclopedia of Qualitative Research Methods*, Lisa M. Given (ed.). SAGE, Thousand Oaks, 195-196.
52. Sheila Slaughter and Gary Rhoades. 2004. *Academic Capitalism and the New Economy: Markets, State and Higher Education*. The Johns Hopkins University.
53. Susan Leigh Star and Karen Ruhleder. 1994. Steps towards an Ecology of Infrastructure: Complex Problems in Design and Access for Large-scale Collaborative Systems. In *Proceedings of the 1994 ACM Conference on Computer Supported Cooperative Work*, 253-264. <http://dx.doi.org/10.1145/192844.193021>
54. Richard M. Steers, Richard T. Mowday, and Debra Shapiro. 2004. Introduction to Special Topic Forum: The Future of Work Motivation Theory. *The Academy of Management Review*. 29, 3 (Jul 2004): 379-387.
55. Norman Makoto Su and Gloria Mark. 2008. Designing for Nomadic Work. In *Proceedings of the 7th ACM Conference on Designing Interactive Systems*, 305-314. <http://doi.acm.org/10.1145/1394445.1394478>
56. Lucy Suchman. 2007. *Human-Machine Reconfigurations: Plans and Situated Actions* (2nd ed.). Cambridge University Press.
57. Ian Towers, Linda Duxbury, Christopher Higgins, and John Thomas. 2006. Time Thieves and Space Invader: Technology, Work and the Organization. *Journal of Organizational Change Management*. 19, 5: 593-618. <http://dx.doi.org/10.1108/09534810610686076>
58. John Urry. 2007. *Mobilities*. Polity.
59. Victor H. Vroom. 1964. *Work and Motivation*. Wiley.
60. Sylvia Walby. 2007. Introduction: Theorizing the Gendering of the Knowledge Economy: Comparative Approaches. In *Gendering the Knowledge Economy: Comparative Perspectives*, Sylvia Walby, Gottfried, Heidi, Gottschall, Karin, and Osawa, Mari (eds.). Palgrave Macmillan UK, London, 3-50.
61. Karl E. Weick. 1998. Improvisation as a Mindset for Organizational Analysis. *Organization Science*. 9, 5: 543-555. <http://dx.doi.org/10.2307/2640292>
62. Etienne Wenger. 1998. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press.