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**Article**

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Internet Policy Review

**Provided in Cooperation with:**

Alexander von Humboldt Institute for Internet and Society (HIIG), Berlin

*Suggested Citation:* Faure, Laura; Vendramin, Patricia; Schurmans, Dana (2020) : A situated approach to digital exclusion based on life courses, Internet Policy Review, ISSN 2197-6775, Alexander von Humboldt Institute for Internet and Society, Berlin, Vol. 9, Iss. 2, pp. 1-18, <https://doi.org/10.14763/2020.2.1475>

This Version is available at:

<https://hdl.handle.net/10419/218934>

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# A situated approach to digital exclusion based on life courses

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Published on 27 May 2020 | DOI: 10.14763/2020.2.1475

**Abstract:** This article proposes a situational reading of digital exclusion. This is developed using an analytical approach based on life courses. The perspective is to analyse digital exclusion risks around the transitions and ruptures that shape the life courses. The research examines multiple stages within educational, professional and private trajectories and explores the uses of technology in these situations. It analyses the diversity of use in relation to the situations in which they take place and according to their significance at different points in life. Recognising the heterogeneity of courses and of individual experience, this approach allows us to work out the characteristics of digital uses and the potential risks of exclusion to which the individual is exposed.

**Keywords:** Digital uses, Digital exclusion, Life course perspective, Digital autonomy, Situated approach

## Article information

**Received:** 23 Aug 2019 **Reviewed:** 30 Jan 2020 **Published:** 27 May 2020

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**Competing interests:** The author has declared that no competing interests exist that have influenced the text.

**URL:** <http://policyreview.info/articles/analysis/situated-approach-digital-exclusion-based-life-courses>

**Citation:** Faure, L. & Vendramin, P. & Schurmans, D. (2020). A situated approach to digital exclusion based on life courses. *Internet Policy Review*, 9(2). DOI: 10.14763/2020.2.1475

*This paper is part of Digital inclusion and data literacy, a special issue of Internet Policy Review guest-edited by Elinor Carmi and Simeon J. Yates.*

## INTRODUCTION

Having access to digital tools (smartphones, computers, tablets, internet, applications, platforms etc.) as well as the skills necessary to use them is now considered prerequisite for individuals to participate fully in society. The use of these technologies create opportunities to reinforce social, economic and cultural capital, as understood in the sense defined by Bourdieu (Ragnedda, 2018), and does so throughout our lives (Van Deursen & Van Dijk, 2014, p. 509). Much research has shown that individuals who have not had access to digital technologies, or who weren't able to use them and benefit from them in their life offline, often belong to disadvantaged social groups or older generations (DiMaggio & Hargittai, 2001; Fleming, Mason, & Paxton, 2018; Van Deursen & Helsper, 2015; Yates, Kirby, & Lockley, 2015a). However, while significant efforts have been made to improve access to digital tools and the development of the necessary skills, some individuals, or groups of individuals, are still at a disadvantage because of their non-use of these tools, which are interwoven in a growing range of situations across education, professional and personal life (Van Deursen & Helsper, 2015).

The consistency and the evolution of these trends in digital exclusion encourage us to go beyond dichotomous approaches to exclusion, between the 'haves' and the 'have nots' (Tsatsou, 2011), to better 'take into account the social economic and cultural contexts of digital engagements' (Robinson et al., 2015, p. 570). This turning point in the research sheds light on the multiple dimensions of digital exclusion and their dynamic nature (Helsper, 2012; Wei & Hindman, 2011) as well as the necessity of adopting a situated point of view to understand the interaction between individual and contextual factors which generate these situations of disadvantage, and indeed for some the phenomenon of marginalisation (Benzuidenhout, Leonelli, Kelly, & Rappert, 2017; DiMaggio & Hargittai, 2001; Ragnedda, 2018; Wei & Hindman, 2011). In line with this perspective, this article proposes a situational reading of digital exclusion. This is developed using an analytical approach based on life courses.

Life courses refer to individual experience, situated within a sequence of institutionalised events which take place in the lives of individuals and which play a part in the direction of individual trajectories (Elder, 1994; Giele & Elder, 1998; Hendricks, 2012; Mayer, 2009). Life courses are marked by situations where the option of choosing to employ technology or not is being reduced. Whether in studying, in administrative procedures, finding a job or even a place to live, the use of digital technology is becoming more and more dominant (Selwyn & Facer, 2007), and indeed is sometimes imposed 'by default' (Yates, Kirby, & Lockley, 2015b). This evolution of the norms of use has implications on life's unfolding. An individual's needs are linked to the situations with which they are confronted: it is thus necessary to give thought to the evolution of 'the infrastructural, social, institutional, cultural, material and educational elements necessary to ensure the realization' of these needs (Benzuidenhout, Leonelli, Kelly, & Rappert, 2017, p. 465). But this social context is also transformed by the spread of use (DiMaggio & Hargittai, 2001). Therefore, it is a question of documenting the way in which life courses are influenced by the normalisation of uses in a particular social context (Benzuidenhout, Leonelli, Kelly, & Rappert, 2017, p. 466).

The research presented here looks to understand to what extent situations where digital exclusion is a risk are structured around particular life transitions; such as the birth of a child, the death of a close relation, finding a partner, starting a job, and geographical mobility. In addition to these transitions are biographical ruptures: divorce, sickness, unemployment etc. Our research examines multiple stages within educational, professional and private trajectories

and explores the uses of technology in these situations, in particular when such challenges reduce the possibility of individual choice in the use of technology. The underlying hypothesis is that the use of digital tools is characterised by an accrued homogenisation of norms of interaction in certain situations. This homogenisation entails a reduction of the possibilities of individual choice and life chances (Ragnedda, 2017). The effects of this phenomenon on life courses will be more marked when these courses also intersect with the experience of social inequality (Robinson et al., 2015). Drawing on the thinking around the notion of digital choice and autonomy, our analysis offers a view of digital exclusion not simply as the result of a lack of individual skills, but also as the product of a lack of digital autonomy. This latter notion is understood as the choice or room for manoeuvre when faced with prescribed uses in a particular situation.

After returning to several key ideas which form the basis of the definition of digital exclusion, and an explanation of our empirical process, the presentation of our results will be structured in three parts. Firstly, an analysis of the uses of digital technology according to biographical courses will allow us to highlight the specificity of use in three life domains: education, employment and personal life. Next, identifying the situations with which individuals are likely to be confronted within these three domains, our analysis will offer an interpretation of the difficulties according to the demands of digital use in each situation. It will also look at how this situation intersects with an individual trajectory and room for manoeuvre in face of the norms of use in these situations. Finally, we will discuss the bearing of these results in relation to the outlook on digital exclusion.

## CONTEXTUALISATION OF DIGITAL EXCLUSION AND AUTONOMY

There is much work describing digital exclusion risks for individuals who, according to their social-economic status, their age or their level of digital skills, would *a priori* be considered as not affected (Brotcorne, Damhuis, Laurent, Valenduc, & Vendramin, 2011; Deydier, 2018; Helsper, 2017; Schurmans & Mariën, 2013; Selwyn & Facer, 2007). This is the case, for example, with young adults who are seen as a very digital-literate group (Bennett, Maton, & Kervin, 2008; Yates, Kirby, & Lockley, 2015a) but whose patterns of use are nonetheless very different (Hargittai & Hinnant, 2008). This research calls into question the diversity of use in relation to the situations in which they take place and according to their significance at different points in life as ‘[...] variations in use with age will reflect aspects of life style, life stage and inequalities that vary with age – not just experience with ICT’ (Yates, Kirby, & Lockley, 2015, p. 2). It is in this sense that Helsper (2017) foregrounds the importance of taking into account the social relativity of digital inequality in her research on digital exclusion. This perspective involves an understanding of the individual characteristics that are often used to explain digital inequalities (including access, skills and motivations) within their social contexts and specific temporalities (Helsper, 2017, p. 223). This analytical framework does not only aim to describe the context of digital uses but also to take into consideration the effects of its omnipresence and its societal valorisation on the possibilities of the choice of use or of non-use by individuals (Helsper, 2017, pp. 237-238).

Consequently, digital exclusion cannot be reduced to the influence of individual and social factors in isolation of one another. These factors interact and form a set of constraints leading to ‘the inability for an individual to make empowered and informed choice about their use or non-

use of ICT-based practices' (Selwyn & Facer, 2007, p. 19). The proliferation of use of digital tools in the day-to-day seems to model contexts in which it appears ever more complex to escape using these tools, to interact with peers or to benefit from public or private services. The definition of digital exclusion as employed here is tied up with choice, this latter being a part of life courses (Santelli, 2019). This perspective revokes the notion of autonomy, foregrounded as a necessary skill for digital inclusion (see the European Commission's DigComp 2.1). However, autonomy is also dependent on the social conditions within which it is perceived (Marquis, 2010, p. 75). Freedom of choice seems to be a condition that fulfils autonomy. Digital choice also refers to the choice of individuals who, for personal reasons – shaped by their social and cultural origins – distance themselves from digital uses (Dutton, Helsper & Gerber, 2009; Helsper, 2011; Mariën & Prodnik, 2014).

However, digital choice is not similar to autonomy. The notion of choice must exist within a larger context that doesn't always allow for choices to truly be made without constraints. Sometimes the individual doesn't have the option of disconnecting from technology: in the workplace, for example (Felio, 2015). On the contrary, the choice to disconnect voluntarily is envisaged as though it does not have any negative effects on daily life (Vodoz, 2010). For example, the decision not to use social media is evaluated in relation to the ability to contact friends or family by other means. In addition, using individual choice as an explanation for disconnecting from, or not using, technology could also be a strategy to conceal a lack of skills and/or access (Vodoz, 2010). To summarise, the idea of 'choice' is not simple, as it refers to a multiplicity of realities and takes place in a context that does not allow for pure free choice (Helsper, 2011). A second pitfall is confusing autonomy with independence, as defined as a form of freedom to act in an aware and informed manner, according to a rational choice orientated to individual benefits. This view is opposed to that of the autonomous individual and the social world in which this autonomy is exercised. 'As a result [...] autonomy must not be understood as an acquisition of independence (where the individual is presented against the social), but as a particular relation to the Other and to institutions' (Marquis, 2010, p. 78).

Applying the life course perspective to the question of digital exclusion allows us to contextualise choice and autonomy. Within this framework, we intend to look at digital exclusion as a position of limited autonomy in digital society. This experience of autonomy varies depending on life stages and results in interaction between existing inequalities and the constraints exercised by the prevailing digital norms. Work on social exclusion led by Serge Paugam (1996, 1997, 2011) provides an interesting perspective on the fundamentals of this approach. According to Paugam, in a given society, excluded individuals are those who do not manage to conform to the social norms and who need constant assistance from institutions and from others so as not to become marginalised. In this sense, Paugam doesn't define autonomy as an attribute or individual skill, but as a particular social relationship which allows every individual to access and take advantage of the resources made available by society (Lecompte, 2010; Mercklé, 2011). In research and policy around digital inclusion, autonomy is frequently defined as an individual's ability to learn and to reach objectives by themselves (Dickinson, 1995; Marquis, 2010; Carretero, Vuorikari, & Punie, 2017). In this article digital autonomy is envisaged as room for manoeuvre faced with digital uses. In concrete terms, a poor degree of digital autonomy refers to a position where there will be higher constraints of digital uses and where coping strategies will be difficult to put in action without the risk of becoming disadvantaged.

## A METHODOLOGY INSPIRED BY LIFE COURSES

Our methodology is inspired by the approach of life courses in social sciences (Elder, 1994; Giele & Elder, 1998; Hendricks, 2012; Mayer, 2009; Van de Velde, 2015), which predicates that life's unfolding is a specific experience for each of us (Giele & Elder, 1998, p. 22), and which aims to understand the mechanisms that will influence this experience (Hendricks, 2012; Santelli, 2019). These events – or life stages – reflect similar life transitions, such as taking your first job, moving in with a partner, and retirement. This perspective also insists on the singularity of individual courses and is interested in life's discontinuities, such as divorce, dropping out of school and unemployment (Van de Velde, 2015). The life course perspective thus studies the scope of historical, social and personal factors which play a part in the change that takes place within a human's life (Hendricks, 2012, pp. 229-230). It will also take an interest in the link between age and the world views of an era, in the normative and temporal dimensions of the social structures which organise individual courses, and in the point in life at which the individual is situated.

Recognising the heterogeneity of courses and of individual experience, this approach allows us to work out the convergences and the divergences in digital uses and the potential risks of exclusion to which the individual is exposed (Elder, 1994; Mayer, 2009, Robinson et al., 2015) crossing the transitions linked to institutionalised stages of life courses. These latter are considered to be common to the majority of individuals from the same cohort or age group (Brotcorne, 2017, p. 14). The goal is to draw attention to the place of digital tools through an individual's lived experience and to '[...] consider what roles they play in explaining why we have diverse experiences as we grow up and grow old' (Hendricks, 2012, p. 226).

## THE COLLECTION OF LIFE PRACTISE ACCOUNTS

Our empirical data is based on 85 semi-structured interviews conducted in Belgium as part of the research programme IDEALiC funded by the Belgian Federal Science Policy Office and co-led by a team of researchers from Université catholique de Louvain and Vrije Universiteit Brussel, between 2015 and 2019. The aim of these interviews was to collect life practice narratives (Bertaux, 2001) from users who had different degrees of familiarity with digital technology, across three age groups. The demarcation of these age groups reflects the standard frequently employed by European social policies (Mayer, 2009). The young adult category (18-30 years old) corresponds with a period during which individuals are expected to build their autonomy in all fields of their life, while the adult group (30-50 years old) indicates individuals who are in a period during which they are presumed to have developed their autonomy and be participating fully in society, while maintaining a balance between private and professional spheres. Senior citizens (50-70 years old) are characterised by their progressive departure from professional life and their growing concern with remaining independent and participating in society.

Although this classification has been relevant to draw attention to largely common circumstances and the extent to which they interweave with digital tools, they should be approached with some caution for at least two reasons. Firstly, the transitions between life stages do not necessarily align with age. For example, some people enter professional life earlier, others later, some take time off from their jobs to go back to studies. Age and life stages are two

fields that are interconnected but nonetheless distinct. Secondly, the idea of age is polysemic (Rennes, 2019) and refers to numerous realities. If individuals are differentiated according to a 'chronological' age, based on their date of birth, then this age also has social significance. Thus, each age is associated with a normativity which, beyond its chronological reference, is also the manifestation of unequal social relations whereby some ages are given more social value than others (Rennes, 2019), in addition to the 'prescriptions and expectations for how we think and how we behave' (Hendricks, 2012, p. 227). For these reasons, it seems appropriate to include this subjective component relative to age groups by looking into the role of age in the significance given to the use of digital tools. This both allows us to identify diverse approaches to choice in terms of digital use and to identify whether these approaches were principally experienced in particular situations – transitions and ruptures – that occur during a life course. The distribution across these three age groups allows us to address the relationship to technology at the certain specific life course stages that are generally associated with this group, with an understanding of the influences of age status as a 'socially constructed concept grounded in particular circumstances that [connect] actors to the social capital at their disposal, roles and opportunities open to them, how they experience life, and how they are perceived by others' (Hendricks, 2012, p. 227).

Our data collection did not look for statistical representativeness; the aim was rather to distribute participants equally according to age, gender and level of education, so as to highlight the diversity of trajectories and to better understand the similarities and differences in the uses of and relations to digital technology for individuals within one age group. Attitude towards digital technology (familiarity and regularity of use), as well as professional occupation were two further variables taken into account when selecting the sample of interviewees. The interviews were devised as life practice narratives (Bertaux, 2001). This did not mean a simple and linear reproduction of a whole life course. It was rather a case of taking a retrospective approach to understand the 'life fragments' which, in the eyes of the interviewee, had taken a particularly important significance in their individual trajectory (Pourtois, Desmet, & Lahaye, 2010), across various domains such as personal life, formal education, professional, social life, leisure and culture or civic life. Using these accounts, the place of digital technology was addressed within the sequence of these life stages. The accounts allow us to understand individuals' views on their practices and experience, as well as on the underlying systems, norms and values of these practices (Bertaux, 2001).

Particular attention has been given to the importance of digital technology in past transitions and ruptures to understand how and to what extent they are embedded in these situations (Van Deursen & Helsper, 2015): have their consequences been seen as positive, negative or ambivalent? Are the results tangible (for example, the loss of social advantages) or are they also subjective (for example, a loss of self-confidence, or confidence in digital technology)? In such situations, what difficulties were actually faced? Are these the same from one individual to the next? Why and how have some people been able to overcome them while others have not? What makes these situations reoccur? The qualitative analysis was executed using NVivo software, based on a thematic table. This led to the development of a typology of situations with a risk of digital exclusion, based on room for manoeuvre in digital technology use, expectations concerning use, and coping strategies.

## HETEROGENEOUS LIFE COURSES BUT COMMON RISKS OF DIGITAL EXCLUSION

To understand the implication of digital technology in life courses, and to characterise the potential risks of digital exclusion, the first step of our analysis consisted of showing the points where digital use takes place in the trajectories. To do this, the thematic table picked up the following life stages: birth, death, leaving the nest, love life, retirement and work, as well as the ruptures of divorce, dropping out from studies, sickness, immigration, geographical mobility, career changes and unemployment. An ‘other’ category was included for unexpected experiences. The analysis shows that the interviewee’s narratives relative to their digital practices are primarily constructed around the same key life events, whatever their age group. These key events encompassed the professional, educational and personal spheres. Interviewees also described their uses in other domains – their social life, cultural life and civic life – but these were less seen as having a significant influence on their trajectories. In the direction of life courses, the importance of digital technology use in socio-cultural spheres thus remains a blind spot in our research.

At the heart of the professional, educational and personal domains, a similar series of stages took place in different life unfoldings. The same event might in turn be seen as positive, negative, neutral or ambivalent, depending on the context within which it takes place; subsequently, the description of a typical life course trajectory is not self-evident. To illustrate the non-linear character of the trajectories without assuming their subjective perception, the different courses described by the interviewees have been organised according to a typology based on the degree of continuity in the trajectories (table 1).

Table 1: Overview of the life trajectories in the educational, professional and private spheres.

Spheres	Characteristics	Description
Educational	Completed	Uninterrupted school education. Sometimes these courses involve an academic reorientation, such as a change of subject studied.
	Fragmented	Studies interrupted for a long period, because of health problems, other employment opportunities, moving abroad or a lack of interest. However, after some time, these people decided to resume their studies, either out of their own initiative or through socio-professional integration schemes.
	Failed	School career terminated without qualifications, and without having had a chance to resume studies or subsequent training.



Spheres	Characteristics	Description
<b>Professional</b>	<b>stable</b>	Has been in the same profession or place of work for a long time, benefitting from internal promotion or additional work externally.
	<b>flexible</b>	Characterised by a multitude of different jobs through a career, whether in the same sector or in different sectors. Corresponds to the most common career model.
	<b>Extra</b>	In some cases, the people questioned had another job in addition to their principal professional commitment. Often the additional money was not the primary motivation, but a welcome supplement.
	<b>Long term unemployment</b>	The main reasons mentioned were health problems, being too old or having low educational qualifications.
<b>Personal</b>	<b>Linear</b>	Personal life courses follow a chronological order: first a relationship, then commitment, settling down and having children who live under the same roof until they become majors or finish their studies. Housing has been reappraised according to the contemporary family composition.
	<b>flexible</b>	Passes through all the phases in the personal sphere, but turns away from dominant models: single by choice, divorce and multiple marriages, early parenthood etc. In these cases geographical mobility is common.
	<b>rupture</b>	The trajectories are eclectic, either by choice (e.g., career moves or immigration) or due to compelling circumstances ( e.g., migration or homelessness).

Becoming widespread in these three life domains – educational, professional and personal – digital uses arise under different circumstances. The more acute view of diversity across trajectories illustrated in the sample of interviews allows the analysis of links between digital uses and the points at which they become necessary. Thus in each of the domains, a series of successive stages are noted in which use of digital technology is seen as indispensable.

## STAGES OF POOR DIGITAL AUTONOMY

Whether they were more invested in one of these three domains or, as in the majority of cases, in all three at once, the interviewees were confronted with numerous phases that entail the use of digital tools (table 2). The situations that need to be managed in these different life phases call for the use of different platforms, and can sometimes be managed offline, sometimes not. They also coexist with other uses. Taken on their own, these uses sometimes reveal similar practices, mastered by the interviewees. However, it is the convergence with other uses in these life stages and their unavoidable nature that makes these experiences high-risk in terms of digital exclusion. In these situations, there are personal characteristics that will make the experiences even riskier, such as a low level of education, poor socioeconomic conditions, age, having worked in a job that does not require the use of digital technologies, having no interest in digital technologies and living in a remote area.

Table 2: Overview of the uses of digital tools in educational, professional and personal domains.

Domains	Phases	Digital uses
<b>Educational</b>	Choosing an establishment or course	Search engines
	Investing in a school or in specific courses	E-mail, online educational platforms
	Getting involved in class interaction	E-mail, online educational platforms, social networks
	Completing work and homework	Search engines, e-mail, online educational platforms, social networks, word processor
<b>Professional</b>	Navigating the jobs market	Search engines, social networks and online databases
	Responding to a job advertisement	E-mail, word processor, file converter, online databases
	Integrating digital tools in the workplace	E-mail, word processor, file converter, VoIP
	Applying for unemployment benefits	Search engines, online databases, chat
<b>Personal</b>	Meeting up and dating people	Social networks, dating apps and sites, messenger
	Renting or buying a house	Search engines, estate agent sites, e-banking
	Engaging or separating	Search engines, e-administration, office, e-shop applications

The breakdown of digital autonomy materialises across two components: the ability to implement strategies for anticipated digital uses and the combination of the different uses required. Situating an approach within life transitions and ruptures positions these situations of poor digital autonomy within the unfolding of trajectories which differ according to age, sex and socio-economic status. On the basis of these interviews, the following sections expand on the risks of digital exclusion linked to these uses that are constrained by life transitions and ruptures. These latter may challenge individuals with uses that they have never been confronted with.

## WITHIN EDUCATION

This life domain is organised around an academic cycle that spans from orientation to graduation. The interviewees' narratives identified four stages in particular, each accompanied by a particular set of digital uses, use of platforms and necessary skills. The first phase, 'choosing an establishment or course', mainly focuses on the needs linked to using a search engine to find educational establishments or programmes. The second phase implies the sending of emails and familiarisation with the establishment's online platform, as does the third phase, which is also largely reliant on the use of social networks for collaboration between students, such as sharing class notes or organising group work. Finally, the fourth phase of 'completing work and homework' encompasses all of the digital uses mentioned above, as well as word processor. At

all stages, social and cultural origins shape capacities and opportunities with digital engagements. For example, applying to university could be even more difficult for first generation students and people from lower economic condition.

Involvement in class interaction and completing homework can be seen as experiences that carry a high risk of exclusion, as constraints of use are higher in both situations, there is a limited choice of coping strategies and these risk negative consequences. The consequences in question here are objective, for example using an e-campus.

[...] when I started at university I couldn't understand their site at all. Things were always changing and I found the university system really complicated and had some difficulties. When you leave school you haven't been prepared for all that, and then their online research system [...] that really isn't easy at all. It was really only in the final year of my masters that I finally got it [...] the platform is there but the teachers don't explain how to use it and before you can even sign up to a course you have to find the course codes, it's mega-complicated. It would be simpler if we had syllabuses [...] we don't need to go on the internet for even more stuff. Well, I find it hard anyway [...] (F, 24 years old, university student after a reorientation)

In addition to the objective constraints there are also the subjective aspects, which take into account the pressure from norms of digital use. People who experience difficulties with digital use during these phases also face embarrassment, or even shame when telling others that they do not use social networks, or do not have an email address, smartphone or computer.

The people who were in my class [...] almost all of them were working and would say to me "you can send me an email" [to do a piece of group work] and then I had to keep a low profile because I couldn't get someone to send my emails for me (M, 49, unemployed because of health reasons)

When selecting an educational establishment or study programme, or signing up to an educational establishment or specific course, the use of digital tools can in some instances be worked around by going to the establishment in person or by asking the establishment for help. This avoidance strategy can also rely on friends or relations carrying out the necessary online administrative tasks. In the case of the latter, the informal network becomes essential and forms of dependence set in. However, the density and usefulness of informal networks vary hugely among social groups.

## **WITHIN PROFESSIONAL LIFE**

The interviewees' narratives concerning the professional life domain highlighted that the internet was the leading resource when looking for employment. Given the huge diversity of online resources, interviewees' experiences show that it isn't simply a question of knowing how to do an internet search, but also how to find the method with the greatest impact to really get the most out of it.

On the contrary, we don't know how to use social networks, which are clearly more interesting. And, um, LinkedIn, [...] we don't use that and we've never been shown

how to use Monster [an online employment agency], [or] how to look for a job through social networks. That's what's really new [...] I use Word and then – what am I supposed to do next? (M, 24 years old, civil servant)

It is worth noting that it is necessary to have a combination of digital skills from the very first stage of a career path, including using search engines and email, searching in databases, getting to grips with layout tools and creating a professional profile, writing a cover letter, etc. Social media is also becoming more important in the professional sphere. However, the written and visual culture necessary for self-presentation on social media is less accessible for individuals with a low level of education. As a result, many job seekers are faced with the crucial need to master this combination of digital skills, which renders it a domain with a high risk of digital exclusion. Also, the acquisition of digital skills is strongly embedded in past experiences and shaped by cultural background and access to an appropriated technical and social support.

Job seeking can arise at different points along a trajectory: early in professional life, in the middle of a career or after a fairly long employment history. The risk of digital exclusion is interwoven into these prior trajectories.

Well let's say that the fact that we were at work, already there, we don't use the internet, labourers don't use the internet [...] because the work that the client wants done comes from the manual, so that's all it is (F, 63 years old, labourer)

Before, when I was working, I didn't really need word processor and all that. Then after, when I became unemployed, I had a lot of trouble with my CV, when I came to writing it, as it had been over 10 years since I had been in education (M, 32 years old, educator)

These extracts show that people of varied ages and life courses find themselves in difficulty when faced with obligatory digital use, independent of their previous uses. It is worth noting here that each of these people had significant professional experience. Also, a particularity observed in this life domain is that in addition to the constraints associated with job hunting, individuals find they need to be trained in using digital tools so as to keep their skills up to date, even though digital literacy is seen as a given in many cases. This maintenance of digital skills subsequently falls under the remit of personal initiative. However, not all trajectories allow to acquire or maintain an expected level of digital literacy. Individuals take paths constrained by socio-economic conditions as well as by gender roles, as illustrated in the interview below.

In 1991 [...] it was for women like me [...] who hadn't had the chance to work because they had dropped out of their studies to bring up their children, so it was young women who didn't have any experience or anything. And that helped us a lot [...] now technology is everywhere [...] and that was already starting in 1991 [...] so I did this to get training [...] I didn't have the time [to finish the training] because I stopped it to work [...] as a sales assistant, I had found casual work. So I left the course a month early [...] I needed the money. We were paid [for the training course] a little, but I was more interested in going to work. [...] After that, I didn't use the computer any

more, not for anything [...] So when I had to go back to it, the programs had changed, and I had actually never used these programs [...] nothing but a word processor, I had seen that in 1991, I had worked on that again in the 2000s but it had obviously changed again. But well, some good it was (F, 51 years old, unemployed)

Numerous testimonies show that, in the context of losing a job, the essential use of digital tools arises as an obstacle in the pursuit of a professional career, during a life period that is already marked with a difficult challenge. If alternatives to online job seeking are available, notably word of mouth and using an employment agency, the efficiency of these resources tends to be diminishing in many sectors of business. Moreover, in the majority of cases, it is obligatory to sign-up online to get access to rights linked to unemployment, whether to receive benefits or to access databases for job advertisements. To summarise, even if offline alternatives for job seeking and applying for unemployment benefits exist, these solutions are often less favourable – slower or less diverse – and thus can have negative consequences for those who have to resort to them.

Aside from the digital skills associated with looking for employment, online self-promotion using social networks is a key skill for finding a job. This is not just a case of making a profile on LinkedIn, but also involves maintaining a curated image using other social networks or writing emails and a CV in appropriate language. As a result, responding to a job offer and integrating digital tools into the workplace are situations where adaptation or coping strategies are limited according to the existing norms of use.

## **WITHIN PERSONAL LIFE**

While the domain of personal life was frequently mentioned by interviewees, the accounts were less developed than for the preceding domains, which might be explained by an interest in maintaining privacy, but also by a reduced awareness of the role of digital technology in personal trajectories. Nonetheless, it emerged that transitions and ruptures in people's personal life, such as the birth of a child, marriage, divorce or the death of a partner lead to an evolution in digital practices. For example, the arrival of children is often a point at which parents have to use digital tools, for household organisation and time management but also to respond to the children's school needs. The death of a partner is also a rupture where we see a heightened risk of exclusion, when the partner had been responsible for digital administrative household tasks or when they had taken on the role of the household's digital specialist.

Personal life being a vast domain, we have here taken the trajectory of engagements as it appears as important as education and professional life in the development of a life course. Moreover, digital uses are widespread in this domain. The accounts confirm that the use of online platforms, apps and social networks to meet and to see people has been integrated into interviewees' private lives. If the level of use of these digital practices varies hugely from one interviewee to the next, the importance of acting and interacting on the platforms is common, particularly amongst people with a higher socio-economic status. One interviewee explained his experience with dating apps at a point in his life course when he had just moved to spend several months abroad.

Actually, just to meet people, I actually downloaded a digital app called Meetup [...] People in the same geographical location organise meetings with a theme, like a cooking workshop... In Ireland there were organised language exchanges for example [...] another example... is a dating app, for meeting men, because to meet men it's

much easier on an app, if like me you live [in a town where there aren't any] gay bars [...] so it's unavoidable [...] this kind of app is really very difficult, I was like that before too – you want to meet up with someone but you also don't want to meet up. It's really very complicated (M, 24 years old, civil servant)

Beyond the trivial appearance at first glance, the interviewees confirmed the growing importance of these apps in social relations, and the place that these can take in certain courses, such as the one recounted in the above extract. More generally, the interviewees used a series of social networks, apps, websites or platforms for communication and family life, particularly in the case of transnational families.

The room for manoeuvre when faced with digital uses in personal life is decreasing. This materialises in the fact that, for each stage, even if offline solutions do exist (for example using a telephone, going to a real estate agent or going to the supermarket), the interviewees mentioned a growing pressure to use digital technology. The advantages cited were the quantity and diversity of information accessible, and the possibility of online transactions, but also saving time when organising one's personal life. However, not all the social groups will benefit in the same way of these positive outcomes. For example, use of online banking remains a key concern for elderly.

## CONCLUSION

The perspective developed in this contribution was to analyse the structure of digital exclusion risks around the transitions and ruptures that shape the pattern of life courses. Although digital uses can be considered as individual experiences, the focus here was to chart the fact that they are not wholly dependent on individual attributes, like age or skills, but also on the social context in which they take place.

Two things emerged from our research. Firstly, the trajectories which these uses are woven into are not linear. Also it seems that the more the courses are upset by ruptures or bifurcations, the more that risks of digital exclusion will be present and coexist with a form of social vulnerability. This said, a trajectory's continuity does not protect people *a priori* from a risk of digital exclusion. For one thing, the continuity of a trajectory doesn't tell us anything about the social situation of the individual in question. In addition, this continuity can mask the latent, and all the more serious, risk that rupture in the trajectory will be significant for the individual. This is the experience, for example, of people who are faced with losing their job for the first time, after a relatively stable career path. Confronted with the process of job seeking sends them back to digital use or non-use which up to that point they had never tried under constraint or been challenged with. The life course perspective focuses on change: becoming a student, starting a job, becoming unemployed, marrying, divorcing, becoming a widow, retiring etc. Human lives are permeated by change. Our research shows an intersection between digital uses, ever more standardised and unavoidable within the life stages, and the 'becoming' of individuals who enter into a non-standard trajectory and who take different significances according to these individual trajectories. Highlighting these different forms of 'becoming' allows us to understand how past courses and the significance of transitions and ruptures shape the constraints of digital use within life stages. So, losing a long term job will be experienced differently to switching between short term jobs. But in terms of digital use, this distinction is not visible.

Secondly, the situations where digital use is required are characterised by a variable degree of room for manoeuvre. This is comprised of the scope of choice and the possibilities of adaptation, or even coping, in relation to the necessary uses at particular life stages. The normative quality of digital use introduces new constraints within courses. Subsequently, points of transition or rupture are also the points at which digital and social inequalities risk being exacerbated. Having to permanently adapt to the dominant norms to access the same rights and services as others does not guarantee equality (Marquis, 2010). The situations described in the three life domains studied – educational, professional and personal life – illustrates that, faced with similar situations which demand digital use, individuals are not confronted with the same needs to adapt their use to achieve their aims (Van Deursen & Helsper, 2015). Subsequently, it is not just a question of reinforcing individual skills but also of questioning the way in which information and services are digitalised and made available for everyone (Bonnetier, Brotcorne, & Vendramin, 2019; Yates, Kirby, & Lockley, 2015). For example, how do institutions envisage the maintenance of offline alternatives? Are they designed as last resorts for users in difficulty, or as quality services, equivalent to those online?

The absence of the possibility of choice makes up part of the definition of digital exclusion. The situational approach proposed in this article has tried to give an account of the form that this constraint takes in individual trajectories. The non-linearity of these trajectories illustrates the difficult relation between digitalisation and social exclusion (Helsper, 2012). Emphasising the transitions and ruptures within these trajectories allows us to foreground the stages that are likely to bring individuals face to face with the difficulties generated by using digital technology, regardless of these individuals' social status. Finally, the analysis has allowed us to more precisely describe the personal and contextual circumstances in which the norms of digital use occur. Within this framework, gaining skills and empowerment can be understood in view of the space which digital constraints leave for the will to act across someone's lifespan (Santelli, 2019). This reflection thus paves the way for deeper inquiries to identify the consequences of the digital-by-default services on the decrease in the facilitative potential of digital tools at crucial points of life.

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