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Version: Accepted Version

Article:
Bozzon, R, Murgia, A, Poggio, B et al. (2017) Work-life interferences in the early academic career stages: The case of precarious researchers in Italy. European Educational Research Journal, 16 (2-3). pp. 332-351. ISSN: 1474-9041

https://doi.org/10.1177/1474904116669364

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Work–life interferences in the early stages of accademic careers: The case of precarious researchers in Italy

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Abstract

This paper addresses the topic of work–life interferences in academic contexts. More specifically, it focuses on early career researchers in the Italian university system. The total availability required from those who work in the research sector is leading to significant transformations of the temporalities of work, especially among the new generation of researchers, whose condition is characterized by a higher degree of instability and uncertainty. Which are the experiences of the early career researchers in an academic context constituted by a growing competition for permanent positions and, as a consequence, by a greatly increased pressure? Which are the main gender differences? In what elements do Science, Technology, Engineering and Mathematics disciplines differ from Social Sciences and Humanities? The collected narratives reveal how the ongoing process of precarization is affecting both the everyday working activities and the private and family lives of early career researchers, with important consequences also on their future prospects.

Keywords

Academia, work–life interferences, early career researchers, long hours culture, precariousness

Introduction

Gender asymmetry in scientific settings has been the subject of a large body of literature. Numerous attempts have been made to explain this multi-dimensional phenomenon and to identify strategies with which to remedy it. Moving from different theoretical frameworks and approaches (sociology of work, organizational studies, feminist and gender studies, sociology of inequalities, etc.), several studies show that gender inequalities and discriminations emerge from the combination and interaction of factors which work at different levels: the cultural and political context at the systemic level (O'Connor et al., 2015); the academic and university discourse and practices at the organizational level (Gherardi and Poggio, 2007); and gender differences and stereotypes at the individual level (Husu, 2001). Our analysis focuses on the interaction of factors between the work and family life spheres that traverse all these levels (from policies, to organizational practices and symbolic order construction, to individual choices), and affect the career development of early stage researchers.

Two of the most explored factors are the management of care work and the division of roles within couples (Blackwell and Glover, 2008; Forster, 2001). Various studies have highlighted the negative impact of marriage, and especially of maternity, on women's career access and prospects in academic contexts, in contrast to men, who usually benefit from such family events (Ledin et al., 2007; Xie and Schauman, 2003). In fact, investment in life spheres other than work, such as family and caregiving, is seen, particularly by women, as a limitation on total dedication to the academic career (Lind, 2008; Preston, 2004).

The adoption of the neoliberal paradigm in the (Italian) university system implies, on the one hand, an increasingly higher level of competition and productivity that affects the work pace. On the other hand, the reduction of available resources and the trend to hire researchers with non-permanent contracts or tenure track positions accentuate the precariousness of the younger generation. These phenomena have major consequences in terms of everyday work–life organization and future plan-ning of the two spheres, the professional and private. These phenomena entail, indeed, competition at the national and international levels and impose high mobility and hyper-productivity. At the same time,

researchers – especially in the early career phases – are required to be simultaneously passionate, productive and competitive (Busso and Rivetti, 2014; Peroni et al., 2015). In an aca-demic context characterized by growing competition for permanent positions and by a consequent greatly increased pressure, what are the experiences of the youngest generation of researchers? What are the main gender differences? In what respects do Science, Technology, Engineering and Mathematics (STEM) disciplines differ from Social Sciences and Humanities (SSH)?

Our analysis draws on the findings of a case study conducted in a university situated in Northern Italy. Attention is paid to the quality of working conditions of early career researchers and on how these affect their personal and family lives. After reconstructing the theoretical debate on work–life balance in academia, with particular attention to the case of non-tenured researchers, we will pre-sent the Italian academic context, which is characterized by a large-scale process of precarization of the early stages of careers. We will then discuss the context and the methodological tools adopted in our research, and the main aspects that emerged from interviews conducted with male and female postdoctoral fellows in a STEM and in a SSH department. More specifically, we will focus on: (i) the organization of work activities and its influence on private and family lives; (ii) the main difficulties related to the employment conditions and their consequences on future prospects; and (iii) the (lived or imagined) event of parenthood, focusing especially on gender differences. In the conclusions, policies for work–life balance in Italian universities will be discussed.

Work–life balance in academic work: the early career researchers' experience

Several studies have examined the obstacles in reconciling academic work and family duties, show-ing that in many cases the two spheres are perceived as incompatible by researchers. Women researchers, particularly, perceive the difficulties of managing work and family duties as a dilemma; and in many cases they resolve it by abandoning – or suspending – their careers, or alternatively deciding not to have a family (Blackwell and Glover, 2008; European Commission, 2012). On the one hand, in fact, a large number of women leave academic careers after marriage and the birth of children (Glover, 2001; Ledin et al., 2007; Xie and Schauman, 2003), or more generally because of difficulties in balancing work and family life (Forster, 2001; Hasse and Trentemøller, 2008; Preston, 2004). On the other, women scientists tend to marry less (Palomba and Menniti, 2001) and to have fewer children compared with male colleagues and women more generally (Blackwell and Glover, 2008). Furthermore, to a greater extent than men, women appear to feel frustrated and guilty over the difficult choices that academic work requires them to make (Sturges and Guest, 2006).

In recent years, the debate on work–life balance in academic careers has shifted its focus from the dimension of individual choice and investment to that of structural and organizational factors. On the one hand, in fact, opportunities to reconcile academic work and family responsibilities appear to be conditioned by the institutional setting and welfare regime of the country concerned (Le Feuvre, 2009, 2015). On the other, organizational practices and cultural norms are often mod-elled on the myths of total availability and the solitary hero (Beaufaÿs and Krais, 2005; Benschop and Brouns, 2003).

Universities are not gender neutral organizations (O'Connor et al., 2015). The structural barriers to gender equality in academia, phenomena of vertical and horizontal gender segregation, and women's exclusion from informal sources of power (Smith-Doerr, 2004) have to be understood in light of the masculine symbolic order dominant in the organizational culture of universities (Fotaki, 2013) and in the knowledge production narrative.

Academic work, indeed, is usually defined as utter devotion to science, and the scientist as a male worker without domestic or familial obligations totally committed to his work (Dean and Fleckenstein, 2007; European Commission, 2004, 2012). The prevalent idea of scientific work seems to be grounded on a "long hours culture" (Currie et al., 2000), constant availability (Ackers and Gill, 2005; Ward, 2000), and linearity of the career pathway (without any deviation or interruption).

This model is based on the gender stereotype which assumes that women must be involved mainly in the private sphere and in (unpaid) care-giving, while men work and deal with the public sphere.

The total availability required of those who work in the research sector is becoming increasingly aggressive and pervasive in contemporary academia. As evidenced by the growing literature on higher education, the impact of marketization, new public management, and neo-liberalism is becoming central to the experience of academics across the career spectrum (Bristow, 2012; O'Neill, 2014). The strict rules at the basis of university governance (e.g. high-ranking publica-tions, assessment procedures, fundraising, etc.) have resulted in significant transformations of the temporalities of academic work (Jarvis and Pratt, 2006; Ylijoki and Mäntylä, 2003).

These transformations in the majority of the Western countries – and we will describe the spe-cific Italian case – fit differently in the national and local contexts, which differ both in terms of gender, employment, and welfare

regimes (Le Feuvre, 2015) and in terms of inequality of oppor-tunity (gender and generation) in access to a promotion on the academic ladder.

This scenario of academia and research may play a particularly important role in the construction of the first stages of the career path especially among women researchers (Del Rio Carral and Fusulier, 2013; Müller, 2014), whose condition is characterized by a higher degree of instability and uncer-tainty. In fact, the precarization of the labour market is marked by profound generation and gender differences (Vosko, 2009), and the academic labour market is no exception (Bagilhole and White, 2013). Moreover, the features that characterize academic settings in knowledge societies seem some-what at odds with the possibility that especially non-tenure track researchers can devote time to their social, family and private lives (Fusulier and Del Rio Carral, 2012). Although in the past, too, there was a tendency for non-tenured researchers to delay parenthood until securing their first stable aca-demic position (Blinn and Ryan, 1990), today it is even more pronounced given the current significant and multiple demands of proving competence in one's academic career to secure a tenure position (O'Laughlin and Bischoff, 2005).

In light of these trends, what is interesting in the experiences of early career researchers – as we will see in the empirical section of this paper – is the ambivalence that characterizes their narratives on academia. The work of a researcher is indeed characterized by an extreme individualization, with scant capacity for agency, but it is simultaneously an important source of freedom. On the one hand, young researchers are aware of the logics of the academic market (competitiveness, ongoing evaluation procedures, etc.), and they take an individual risk in order to develop their careers, or at least to maximize their chances of staying in the profession. However, on the other hand, they experience important degrees of autonomy, where research represents a 'labour of love' or an end in itself (Clarke et al., 2012; Worthington and Hodgson, 2005).

The ambivalent character of work in academia implies that pleasure and obligation become blurred. In many cases, early career researchers do not openly contrast the conflict between profes-sional and private life and the increasingly precarious conditions. Indeed, the (supposed) uncondi-tional passion for research – the "sacrificial ethos" (Gill, 2010) – often silences accounts of the personal costs of insecure and precarious work within universities.

At the early stages of a career within the university system, the difficulty of reconciling work and private life is cited as one of the main reasons for leaving academia. As an example, in a cross-national qualitative study conducted by Hasse and Trentemøller (2008) on academic physics, maternity leave appeared to be a 'push' factor to leave, especially for those on temporary contracts because they may lose contacts in academia or not be able to keep up. On the other hand, the greater pressures for an academic career coincide precisely with the phase of the possible forma-tion of a family, in a context where women still often have primary responsibility for caregiving and housework (Fusulier and Nicole-Drancourt, 2015). Therefore, the rise of the neoliberal agenda and the increased competitive pressures in science tend to accentuate the difficulties encountered by women, confronting them with an exclusive option (Fuchs et al., 2001; Lind, 2008). Although young women scientists seem to have a lesser desire for children, recognizing that phenomenon does not gainsay that a growing number of female researchers would like to have children but can-not do so, both because of the intense day-to-day demands of contemporary academic employ-ment, and because they are waiting for stable employment, but which sometimes comes too late, or may not come at all (Gill, 2010). Moreover, as stressed by several studies (Cummins, 2005; Nikunen, 2012), the possibility of motherhood is one of the things that make women awkward: "If they are mothers it is not easy for them to fit the demanded or expected norms; if they are not moth-ers, they still may not be recognized as fitting the norms" (Nikunen, 2012: 725).

In the following sections, after a description of the precarization of the Italian academic context, we shall describe the research design and methodology used, and then present the empirical mate-rial collected. Using a gender approach, we shall offer an interpretation of the particular experience of postdoctoral fellows, who have uncertain prospects regarding their professional stability in the future, and are often forced to sacrifice, or to postpone, achievement of a work-life conciliation that enables their self-fulfilment in spheres of life other than work.

The precarization of early-stage academic careers in Italy

Over the last ten years, the Italian academic system has undergone profound changes that have significantly re-drawn the overall chances of pursuing an academic career and heightened the level of competition among the new generation of researchers. The steady increase in the number of PhD graduates per year, which almost tripled between 1998 and 2013, has been accompanied by the systematic flexibilization of early career positions, and it has been only partially compensated by increased chances of obtaining a research position outside academia (Ballarino and Colombo, 2010; Martucci, 2011).[2]

The precarization of academic careers has gone hand in hand with the increasing level of restric-tions imposed on the university system in order to reduce public expenditure. Since 2009, aca-demic staff turnover has been limited by law (with a threshold of 50% for retired staff in recent years) (Donina et al., 2014). Moreover, in conjunction with the economic crisis, severe cuts to university public funding have been established by law. Such budget restrictions have in fact been imposed in an overall context where national research and development expenditure is considera-bly lower than the European average (Bozzon et al., 2015a; Martucci, 2011; Triventi, 2009).

The current composition of Italian academic staff reflects the consequences of these structural dynamics. Between 2008 and 2013 permanent positions (full professors, associate professors, and assistant professors) shrank by 14%, but they have not been fully replaced by new entrants or career advancements: the overall research academic research staff has reduced by 3% (Table 1). At the same time, there has been a substantial increase in temporary positions, all concentrated among early career researchers. In 2013, more than a quarter of research activities were carried out by fixed-term researchers (Table 1). The largest part of fixed-term research staff consists of postdoc-toral fellows (85%; our target population), and their volume has increased by more than 34% in five years. Given the lack of women in top positions, the incidence of non-tenured researchers among women is higher than among men (respectively 32.9% and 22.2%).

The predominance of postdoctoral fellows among fixed-term research staff is an ambivalent finding. On the one hand, since these positions are usually financed by external funds, they reflect the capacity of each university to be involved in useful research networks and gather research fund-ing, which is an indispensable feature of their scientific reputation. The incidence of these positions varies significantly by field of science according to the capacity to attract external funding, mainly from the European Commission and (to a lesser extent) from the private sector. In fact, in the case of "Engineering/architecture" and the "Natural sciences", in 2013 postdoctoral fellows accounted for respectively 34.4% and 25.4% of the overall research staff in each discipline, while their inci-dence was more limited in the SSH disciplines (14.1% in the Humanities and 13.5 in Social Sciences) (Table 2).

On the other hand, they are a paradigmatic example of the precarization not only of academic careers but also of high-qualified careers in the wider Italian labour market. Postdoctoral fellows represent a cheap way to counter the loss of human resources due to the rigid academic turnover rules, and to manage fundamental research activities by hiring highly specialized skills and com-petences, thus avoiding the constraints imposed by the centralized recruitment rules. Their recruit-ment is in fact controlled at departmental level.

Moreover, postdoctoral fellows are particularly vulnerable in terms of social protection, since they are not entitled to receive any unemployment benefit or other social security provisions or income support measures because they are considered to be "in training".[3] The lack of welfare sup-port is often not compensated by higher wages; quite the opposite, postdoctoral fellows' positions in Italy are paid considerably less than the European average (Martucci, 2011). These disadvanta-geous job conditions, combined with the general lack of social supports and policies explicitly intended to promote gender equality – typical of the Italian familistic sub-protective welfare sys-tem underpinned by the persistence of traditional gender roles – are even worse for women than for men because they are at higher risk of remaining trapped in unstable and underqualified jobs (Bozzon et al., 2015b).

The difficulties of young researchers in giving continuity to their jobs (postdoctoral fellows' posts usually last one or two years, even if they are renewable for up to six) negatively affect also the chances of achieving expected research performances. This amplifies the effects of competition and uncertainty. Toscano et al. (2014) documented that most Italian precarious researchers believe that their insecure work position is hampering their work performance. Moreover, the lack of unemployment provisions seems to increase the need to find a new job before the current one expires, and this search overlaps with essential research and writing activities.

Table 1. Academic research staff: males (M) and females (F), Italy 2013.

[insert here]

Table 2. Percentage of postdoctoral research fellows (postdoc) on overall research staff, mean age of postdocs, and % of women among postdocs and full professors by fields of study: males (M) and females (F), Italy 2013.

[insert here]

In this context, events in the private sphere that significantly redefine and/or increase the con-straints in private everyday life (childbirth and couple mobility) usually reduce time dedicated to job activities (Falcinelli and Guglielmi, 2014; Petersen et al., 2012), and they may obstruct career development. This issue is particularly important if one considers that the mean age of Italian research fellows is 34.5 (Table 2) – which is a quite demanding phase of adult life in relation to not only the work sphere but also the private one – and the weakness of the Italian welfare system in helping (wo)men to balance work and family duties. The Italian welfare system – structured on the traditional "male breadwinner/women caregiver" model – is characterized by a general lack of family- and child-related policies and by persistent dependence on family (intergenerational) sup-port/solidarity (Bozzon et al., 2015b; Ferrera, 2010; Saraceno et al., 2012). It offers low family benefits, long but often unpaid leaves, and limited public child- and elderly-care services. This is a rather hostile context for women who want to combine family responsibilities, motherhood and paid work. It has been documented that career instability experienced within a familistic sub-pro-tective welfare system like the Italian one influences fertility behaviours, leading to postponement of (first) childbirth. This effect is particularly evident in the case of women with a high level of education and strong labour market attachment (Barbieri et al., 2015), which is the case of women involved in an academic career.

Research design

The following analysis is based on research conducted within the European project GARCIA – Gendering the Academy and Research: combating Career Instability and Asymmetries[4] focused on gender differences in the early phases of the academic career increasingly characterized by precari-ous working conditions (Fusulier and Del Rio Carral, 2012; Ylijoki, 2010).

The analysis is based on 33 interviews carried out from September 2014 to March 2015 with postdoctoral fellows currently working, or who had worked in the recent past (from January 2010 to January 2014)[5], in two Italian university departments – one pertaining to STEM disciplines and the other to SSH ones – of a university situated in Northern Italy.

Table 3. Interviewees by sex, department, position, and presence of children[6]

[insert here]

Our main aim was to determine the main difficulties faced by researchers at the early stages of the academic career. This was considered a phase crucial for understanding how universities can prevent the loss of talents and better support researchers' careers and working conditions. The research design adopted was particularly innovative, since we decided to interview female and male postdoctoral fellows currently employed in a STEM and a SSH department, as well as female and male PhD holders who had worked as postdoctoral fellows in the same departments in the recent past. By adopting this research design, we wanted to understand the main difficulties and reasons which may induce postdoctoral fellows to leave the academic/research system. Therefore, decisions on constructing a sample of early career researchers to be interviewed were directed by theoretical criteria. The "employment relationship" with the departments studied (current or ex postdoctoral fellows), "gender", and "parenthood status" were identified as key concepts for theo-retical sampling. The approach adopted made it possible to track the interviewees' trajectories ret-rospectively by comparing the interviews conducted with PhD holders who – after a postdoctoral fellowship – had left the STEM or the SSH department with those conducted with postdoctoral fellows still working in those departments.

Table 3 shows the interviewees' main characteristics. To be noted is that, at the time of the inter-view, only seven of the 33 interviewees had children (three men and four women; four with Italian nationality and three foreigners). Moreover, it is significant that all the four women with children had left their departments on conclusion of their postdoctoral fellowship contracts. Instead, at the time of the interview, the three men with children had ongoing postdoctoral fellowships[5]. Finally, to be noted is that the average age of the interviewees was 36.7 years for the SSH department and

35.6 years for the STEM department. “Early career stages” are therefore often to be understood in relation to the academic hierarchy, rather than to the professional experience of researchers. In fact, the extremely high level of employment instability in academic settings has led, as already pointed out elsewhere (Gill, 2010), to extending the designation of “early career” staff to the entire “career”, given the few opportunities for development or secure employment.

The interviews lasted between 50 minutes and 2.5 hours and were entirely recorded and then transcribed. The material gathered was organized and coded using the Atlas.ti software program. A thematic analysis (Cassell and Symon, 2004) was conducted through identification of units of meaning, which were then grouped into categories and themes by an inductive process. At the same time, a deductive approach was also used by selecting a number of categories identified *a priori* in order to enable future comparisons among the other European universities involved in the research project.

The interviews explored two different temporal perspectives. The first was chronological. It related to *biographical life-lines and focused on past professional trajectories* and expectations about the future. The second one concerned everyday life. In this paper, particular attention is paid to everyday working life and work–life balance. More specifically, the following questions guided the analysis of the interviewees’ perceptions: How does work affect the quality of personal and family life? How do work–life interferences affect job performance? We then concentrate on the gender differences and compare the perceptions of the interviewees at the STEM and SSH depart-ments. In the next section we will focus on the main findings relative to the balance/conflict between working time and the time devoted to other life realms.

Precarious work–life balances: the paradox of the low level of conflict perception

As said, working in academic institutions and in the knowledge production sector has undergone major changes – new public management, marketization of knowledge and academia, and neo-liberalism – that affect career opportunities, the way of doing research, and job contract in/stability for early stage researchers (Bristow, 2012; Gill, 2010; O’Neil, 2014). The consequences of the precarious conditions and the academic system’s features affect the work and personal lives of male and female researchers at the early stage of their careers in various ways: in terms of mental and physical wellbeing, and in terms of the balance or integration of work and other spheres (Falcinelli and Guglielmi, 2014; Lynch and Ivancheva, 2015). In accordance with a large body of literature that adopts a gender perspective (Gill, 2010; Hasse and Tentemøller, 2008; Xie Shauman, 2003), the empirical material analysed in this study also confirms that the most problematic aspect of conciliation for those engaged in this kind of work concerns the choice of becoming a parent. In particular, for female researchers, the choice between motherhood and pursuit of an academic career proves to be the dilemma that more than any other highlights the reciprocal interference between the work sphere and the family sphere (Blackwell and Glover, 2008).

To deal with the work–life balance issue, we will first focus on the interviewees’ perceptions of their abilities to organize the job schedule and workload, and on the role of work in their lives. We will then consider non-standard job conditions (economic instability and precariousness). Finally, we will examine job-related features in relation to the parenting choice, the maternity and paternity desire/experience.

Postdoctoral fellows’ working activity and its influence on private and family life

Inspection of the interviewees’ answers relative to workday organization shows that the majority of the respondents – from both the STEM and SSH departments – emphasized autonomy in terms of management of their time and activities. Indeed, the interviewees both from STEM – applied and engineering disciplines – and SSH departments did not have laboratory activities and usually worked in small research groups. The researchers stated that they could freely decide where, when, and how long to work, according to the activities planned and their preferences and needs – “*it’s up to you*”. Nevertheless, we can observe that flexibility of the research activity was represented as an ambivalent feature. The encroachment of work on the private/personal sphere in terms of times and space – the so-called *domestication* phenomenon (Bologna and Fumagalli, 1997) – can lead both to greater freedom and a greater constraint on the effective capacity to manage everyday organiza-tion (Bellè et al., 2015).

> But I also worked at home, so I worked some times in the morning, I worked at weekends… so it was pretty flexible, but still I worked a fair amount and I was always there [at the workplace] on most days. Some days I worked at home maybe. (Ex-postdoc STEM, Woman, 34)

> I haven't got an office and I'm not too comfortable working at the desk in my open space… it's still a problem, because when you work in the office you can find a decompression zone in your home, while I mix work and private life at the same time. It's a constant mixing: the everyday life that is never such and the job crushes everything, because even in the evening when we're on the sofa I often send e-mails. I really never stop working. (Current postdoc SSH, Woman, 34)

Indeed, not having a fixed schedule often signifies adopting a "long hours' culture" (Currie et al., 2000), being available around the clock, and working during the evenings, weekends, days off, and holidays in order to meet deadlines, check and answer emails, and construct a competitive curriculum.

> The downside of working at university is that there are no fixed working hours. This makes people feel forced to work around the clock, without ever disconnecting. (Ex-postdoc STEM, Woman, 35)

> When I don't have to work during the weekends and the evenings this will be a novelty. (Current postdoc SSH, Man, 40)

The boundaries between work and other life spheres seem to be very weak, in an ambiguous exchange between work vocation and precariousness. Precarious conditions, in fact, have important consequences relative to the capacity to plan the professional career. The interviewees stated that in a postdoctoral position they have to work on the research for which they are paid; they need to publish in order to improve their curriculum vitae; and at the same time, they have to look for others posts, scholarships or research funds. This fragmented and demanding workload obviously had negative impacts on their personal lives.

Despite these working conditions, the interviewees very often considered them to be "intrinsic" characteristics of academic jobs – high competition, continuous performance evaluation, and high productivity levels. The "passion trap" (Murgia and Poggio, 2014) and the internalization of responsibility (Hawkins et al., 2014) are two mechanisms useful for understanding the weak and few complaints by the researchers and the acceptance of their job conditions that affect negatively their wellbeing and private/personal life.

> I have a balance, but it is insane: anyway, I work 60 hours a week, maybe more. I'm happy, I'm working very hard in this period, but I don't mind. (Current postdoc STEM, Man, 37)

> I work long hours, but in the end if someone wants to do research … […] either they do it because they have a passion or I think it's better not to do it. So when you do things because you like what you do then it's easy to work beyond the usual eight hours. So I don't know what the average amount is, but it's certainly nine or ten hours, and when there are deadlines even more. (Ex-postdoc STEM, Woman, 36)

Even for those who gave themselves rules to separate the spheres of life and work – for example, deciding not to work at weekends or in the evening – but waived their own rules in order to meet deadlines, this behaviour was considered to be normal (standard) and common sense.

I do think I have a good balance, because my family doesn't complain much that I'm not there for them, or whatever. I try to play, I try to read, I try to do activities with my son and with my family in general. (Current postdoc STEM, Man, 36)

> I don't have fixed times. Indeed, there are periods of hyperactivity and other less frenetic ones. But I think this is common among fellows and graduate students […] the environment and the academic life in my group […] it is normal for pressures to be very strong. (Current postdoc SSH, Man, 31)

> R: Did you work during the evenings and at the weekends?

> I: Always. I worked at Easter, Christmas…it makes me laugh because it's like a collective disease in this environment. (Ex-postdoc SSH, Woman, 36)

The ambivalence of the narratives about academic work – the shared "sacrificial ethos" (Gill, 2010) – emerged from the words of all the researchers (men and women, STEM and SSH). At the same time, of particular interest is that the women researchers stressed more than their male col-leagues their devotion to, and vocation for, academic work. According to Nikunen (2012), this may be interpreted as an introjection of the organization's requirement of a masculine work identity in order to assure high performances in the system.

Whilst it does not seem that the intensification and densification of work was perceived as par-ticularly problematic by the postdoctoral fellows interviewed, a negative impact on the possibility of reconciling work and private life was instead exerted by geographical mobility, with some inter-esting gender differences (Ackers,

2010). More precisely, some women (mainly STEM research-ers) explained that the frequent mobility periods (working abroad and participation in conferences), and the frequent changes of workplace in different cities or countries, were the main obstacles to the maintenance of private relationships. By contrast, stable relationships were more frequent in the stories of the men, even though they spent a large part of the week in a city different from that of the partner.

> Now I have to face a new change in my life and I am forced to leave my country and start all over again: new job, new friends, new everything. At thirty-six years old maybe I would prefer not to do so. If I had the chance I would be very happy to live here, but since I haven't had this chance…we'll leave and go to England. (Ex-postdoc STEM, Woman, 36)

> My life with my partner takes place in another city … We're a vertical part-time couple, and I have vertical part-time job […] I can't imagine in the distant future what will happen to the balance between my professional and private lives, because at the moment the way to have them coexist is to clearly separate cities and days of the week. (Current postdoc SSH, Man, 33)

In cases where the interviewees had long-distance relationships, they expressed explicit dissatis-faction with commuting and their 'split lives'. If permanent geographical mobility was part of their work in the case of period of visiting or conferences, it had a significant negative impact on the life of the couple and family planning choices.

Employment condition and its influence on future perspectives

In regard to employment conditions, the interviewees were mainly concerned about continuity in their life-span career development and access to social security. Their main common criticisms concerned the duration of their precarious condition – "it's unfair to be considered an eternal intern" and the ambiguity of the work contract of postdoctoral fellows – "you don't have duties and rights". They stated that it should be recognized that postdoctoral fellows have jobs instead of scholarships. Although precariousness and economic instability were the main concerns reported by the majority of interviewees, in relation to construction of both their professional careers and private lives, it is possible to evidence some significant differences between the STEM and the SSH researchers[8].

First, the economic conditions of the STEM and SSH researchers differed in terms of salary. The STEM researchers earned between 2,000 and 2,500 euros per month, while those who worked in the SSH disciplines earned an average of 1,500 euros per month. In fact, the majority of the STEM respondents explained that the instability of their situation and the lack of guarantees were compensated by higher salaries in comparison, for example, with those of assistant professors (fixed by law in the public universities, differently from postdoctoral fellowships, which instead do not have a maximum salary).

> The salary is enough for me, I can also save a lot of money – nearly half of my salary – but it's a fixed-term contract and I'd prefer a permanent contract even if it meant losing half of my salary. (Current postdoc, STEM, Woman, 37)

Moreover, in the perception of STEM postdoctoral fellows, precariousness was a problematic issue only in relation to the academic context. Indeed, they did not perceive this problem in relation to their access to and stabilization in the wider labour market outside the universities – in particular in the private sector. Indeed, in the narratives of these interviewees (above all male) the private sector represented an opportunity to gain contracts and careers more stable and satisfactory than in the academic labour market, making it possible to plan private and professional life in the long term (Ferri et al., 2016).

> Obviously [the future prospects of researchers] are more than rosy and […]. I think that in the future there will be a great deal of work, because technology is evolving rapidly, so that there will be a whole range of possible applications and problems to solve. I consequently think that there's a lot of chances. (STEM former postdoc, man, 36).

Instead, SSH researchers saw instability as the most stressful aspect of their jobs – even more than the heavy workload – and the level of their salary was a central issue during the interviews. Moreover, the SSH researchers also had a very different view of employment prospects outside academia. Their qualifications and experience in the labour market, in fact, did not provide certainty of employment. The former postdoctoral fellows in this research sector reported several difficulties in achieving a better position and job contract outside the academic context. Indeed, they experienced unemployment and the necessity to rethink their competences and professional-

ism according to labour market opportunities. The sense of insecurity and the risk of downward mobility were the predominant elements in their narratives (Ferri et al., 2016).

> I don't want to be pessimistic, but what I see is that there is less and less reliance on research, especially on the research that we do […]. Then it must be said that our work as sociologists is not even appreciated. Here sociologists don't work as sociologists, but as politicians, bureaucrats, administrators … there's no investment in these roles, and with this mentality where do you think we'll go? (Ex postdoc SSH, Woman, 48)

> As soon as I don't have an international project to support me, I'll be unemployed, and at the age of forty, that's not the best experience that you want to have. (Current postdoc SSH, Man, 40)

> The main concern is stability for family choices and the fear that, if you don't have this stability, you're forced to follow a route that isn't the one that you aspired to – or maybe even worse – to follow an extremely low-skilled route where you don't find work because you're now thirty-five years old and even marketing agencies don't want you. (Current postdoc SSH, Man, 33)

In the analysis of contractual instability, therefore, what matters, at least at first sight is not so much gender differences as the differences between scientific disciplines – which continue to ensure ample employment advantages also outside academia – and the humanities, where instead the links between higher education and industry are still rather limited.

Precariousness and parenthood

If the element of the contractual instability pointed out the differences between STEM and SSH, the focus on parenthood projects, instead, highlights marked gender differences among the post-doctoral fellows' interviews. In fact, the impossibility of reconciling academic work and child care was emphasized by all the women interviewed, both STEM and SSH, both those who were mothers and those who would like to become one.

On the one hand, the majority of the interviewees considered maternity as an obstacle to an academic career. The women researchers – mainly SSH – who did not have children imagined work–life balance problems and the impossibility of maintaining the same work pace/intensity. Although both men and women (who were parents or otherwise) were aware that work affects the ability to take care of children, women reported higher levels of conflict between work and private/familial life in terms of everyday organization. This mechanism, which subsumes a traditional view of gender roles within the family, was even more evident among the women with children, who suffered more than their (few) male colleagues with children from worries that familial commitments could affect the work sphere, limiting their quality and productivity standards, as well as their career advancements. For women, in fact, the presence of children seems to exacerbate their feelings of guilt and inadequacy relative to their job performance (Sturges and Guest, 2006).

> Being a woman with a child is disabling. You can't think of studying and working like before. (Ex-postdoc SSH, Woman, 34)

> I think that until my daughter was six months old, I couldn't really work: I was in the workplace, sometimes I had to go to the kindergarten for breastfeeding and… the whole day was wrong and I don't know if I really worked. […] I don't feel really good. I don't feel that I work enough and that I work in the way I worked before. And I know it won't be like that anymore. (Ex-postdoc STEM, Woman, 29).

> With two children, it's absolutely impossible to keep up with all the things that the university requires you to do to get a steady job. There is no compatibility between the two spheres, so you have to make choices: either you focus on your career, and only do that, or you choose to have children, and so you have to look for other work. (Ex-postdoc SSH, Woman, 37)

Among women without children, there was an interesting difference between the STEM and SSH disciplines. In fact, whilst recorded at the STEM department were several stories by women who did not see the experience of motherhood in their futures – some because they did not want it, oth-ers because they thought it irreconcilable with academic work – more common at the SSH depart-ment were stories by women who delayed having children in the hope of attaining a higher level of job security in the future.

> Other people's children are nice, but I think maternity is really not in my nature, and I'm also an engineer… it's intrinsic. I don't have this predisposition, really. (Ex- postdoc STEM, Woman, 36)

> I don’t want children, both because it isn’t my main desire and because I believe that it would be difficult to work if I had a child, at least initially, because there are some very challenging periods. It’s fine with me to work long hours for three weeks, always eating out, but how could I do that with a family? I don’t think it would be at all compatible with the work that I do. (Current postdoc STEM, Woman, 37)

> My academic work is the obstacle to motherhood. My lack of a steady job prevents me from constructing a long-term project involving the care of a third person. (Current postdoc SSH, Woman, 34)

Job precariousness was the factor also cited by men with reference to the choice of parenthood. At the same time, men were less concerned than women about parenthood. They saw it as feasible; some of them considered the need to rethink work time organization but did not contemplate a pos-sible decrease in their productivity.

> R: Are you thinking of having children?

> I: Yes. But I don't have a steady job: I don't know where I will be in four or five months. Not knowing if I'll still be here makes it more difficult. If I were stable here and she [the partner] was stable there, we could accept the fact, and we would get on with it […] but I think I should at least know where I'll be for the next months and where I'll be for the next years. At the moment I don’t know, and this affects my plans. (Current postdoc, STEM, Man, 37)

> The management of not necessarily voluntary non-paternity is an aspect of conciliation failure. It is clear that contractual instability, or the lack of medium- or long-term prospects, have negative effects on life projects like starting a family or having children. (Current postdoc SSH, Man, 31)

> Perhaps more so because the scientific coordinator is a woman and has three children. But the fact itself that a woman with three children can become a scientific coordinator bears out the aspirations of all those who want to lead a life of research and, potentially, have children without repercussions. (Current postdoc SSH, Man, 33)

Hence, whilst also fatherhood is experienced as a critical event, in particular as regards job precariousness and the consequent discontinuity of income, the stories of the men interviewed reflected what has already been widely evidenced in the literature on this topic: the particularly marked difficulties for women who want to pursue academic careers and also have children.

Discussion

This paper has sought to show some of the main implications of the changes ongoing in early research careers, doing so within the wider context of the redefinition of scientific and academic organizations. In particular, the focus has been on experiences of work as a postdoctoral fellow, and on its interweaving with personal and family life. It should be pointed out that the context is Italy, which has some specificities in terms of both research and welfare policies.

The analysis was conducted along three main dimensions. We first considered the implications of the changes taking place in the management of time and flexible work organization and their impacts on the interviewees’ private and family lives. Although the interviewees’ certainly placed positive value on flexibility and autonomy in the management of time, and stressed the passion for the work that they did, apparent in their testimonies was the great difficulty of maintaining boundaries and achieving a satisfactory balance among the various spheres of life. The rise of an increasingly intensive and extensive model of work seemed to require the young researchers inter-viewed to be entirely dedicated to their work – a dimension even more strongly emphasized in the interviews with women.

The second dimension analysed concerned the employment precarization of early career researchers due to the instability of contracts, the lack of social security, and unclear prospects of career development. In this regard, we found a number of differences between the STEM and SSH researchers related mainly to the more favourable economic treatment of the former. In general, however, these conditions, added to which is the increasing pressure (in terms of need and also opportunity) for geographical mobility, heavily affected the ability of the interviewees to plan for their futures and to achieve a stable balance in other life-spheres.

In particular – and this brings us to the third dimension considered – the possibility of starting a family, creating stable couple relationships, and even more, of having children, appeared severely penalized. This applied especially to the female interviewees, the large majority of who considered motherhood to be a major obstacle

against (and often incompatible with) an academic career, and vice versa, especially in a context of insecurity and increasing pressures for performativity and productivity.

In concluding this paper, we believe it may be useful to offer some thoughts on possible strategies for change.

A first consideration is more specifically addressed to the Italian context, where it seems increas-ingly necessary and urgent to propose a redefinition of the classification of the contracts for early career researchers, so that they can be recognized as workers in all respects. Also as a result of the wider changes that have characterized the university system and the research sector, these positions are increasingly subject to pressures linked to productivity, and their skills are increasingly put in value, often invisibly, in the context of activities and projects designed to recover funding that universities are no longer able to ensure. In this context, their status as "non-workers" does not allow access to the (however meagre) welfare and security measures currently available for other professionals employed on temporary contracts. And, as we have seen, this certainly has significant consequences in terms of opportunities for reconciliation of work and private and family life.

The second consideration has a broader scope and concerns the need to highlight the implications that current patterns of access to academic careers and the "long hours culture" have on the quality of life of early career researchers in different countries.

It is necessary to find not only interpretive categories, but also organizational solutions that go beyond the traditional view of a trade-off between work and life, which often also implies a privatization of responsibilities and specific gender expectations. This can be done by starting from the awareness that in academic work the boundary between work and life is intrinsically and perhaps inevitably blurred, and is likely to become more and more so. In our view, therefore, the search for solutions should not so much aim for a chimeric perfect balance between spheres of experience considered as separate, but rather to grant full visibility and active citizenship to the work and everyday lives of women and men in research organizations. The younger generation of research-ers, then, should not be seen as mere providers of labour, individual performers of publications, projects and lectures, flexibly fluctuating in time and space, but as whole subjects, with concrete biographical instances, engaged in complex relationships of work, affect, caring and leisure, and understandably eager to be able to plan a future, not necessarily in the academic world, but at least in line with the skills and qualifications obtained.

Notes

1. This article is an entirely collaborative effort by the four authors, whose names appear in alphabetical order. If, however, for academic reasons individual responsibility is to be assigned, Rossella Bozzon wrote section 3, Annalisa Murgia wrote Introduction, part of section 2 and section 4; Barbara Poggio wrote part of section 2 and section 6, Elisa Rapetti wrote section 5.

2. The current academic recruitment process, established by the last university reform in 2010, foresees a progressive selection path lasting 12 years maximum after PhD graduation before entry into the first permanent position (associate professorship) and comprises 3 positions: (a) up to 4 years (now fixed at 6) as a postdoctoral research fellow; (b) up to 5 years as fixed-term assistant professor; and (c) followed by 3 years as a tenured assistant professor. At the end of the tenure track and after receiving the national scientific qualification which certifies the quality of his/her research work an assistant professor can be appointed to a permanent associate professorship (Peroni et al., 2015).

3. Only in the case of childbirth must mothers take a mandatory maternity leave of 5 months: the mater-nity benefit corresponds to 80% of the average monthly wage earned over the 12 months before the childbirth.

4. The GARCIA project has been financed for the period 2014–2017 within the call *Science in Society* of the FP7 Programme of the European Commission (Grant Agreement n. 611737) and involves seven European universities/research centres.

5. The interviewees that worked in the past in the two departments under study are indicated as Ex-postdocs STEM_dep and Ex-postdocs SHH_dep.

6. The partner's position is not included in the analysis because of the low number of interviewees with children. It would be interesting to develop a specific research design to investigate the relation between partners' occupation characteristics and the parenthood choice. Among the 5 interviewees of the Social Sciences and Humanities Department with children, 3 partners had a permanent contract, 1 a fixed-term contract, and 1 was a freelancer – not one worked in the academic context. Among the 2 interviewees of the Science, Technology, Engineering and Mathematics Department with children, the partners had fixed-term contracts; one of them worked in the academic context.

7. The interviewees at the Social Sciences and Humanities Department had Italian nationality except for three, who came from two different European counties. Instead, at the Science, Technology, Engineering and Mathematics Department, 9 people came from foreign countries – 1 from a European country and 8 from a non-European one. The data do not specify the Italian region of origin.

8. Nine *former postdocs* of the Science, Technology, Engineering and Mathematics (STEM) Department and six of the Social Sciences and Humanities (SSH) Department had continued their research careers at a different university or research centre (in Italy or a foreign country, in a public or private institu-tion). Instead 2 ex-postdocs from STEM and 4 ex-postdocs from SSH worked in a sector unrelated to the research context (Ferri et al., 2016).

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