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Work-life balance – the impact of national policies
A comparative study between Germany and Greece with a special focus on early career researchers

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1. Introduction

The concept of work-life balance has been discussed for quite some time, and a number of studies have been conducted regarding the link between good work-life balance and its influence on the representation of women in more senior professional positions. However, many of these studies are not entirely applicable to the case of researchers, or they miss out on a number of aspects that are rather specific to researchers.

In this paper we will discuss some of the issues that have a bearing on the topic of work-life balance for researchers from the perspective of two different counties, Germany and Greece, that are quite different in many aspects but at the same time reveal a number of interesting similarities. This paper is intended to be the starting point for a more in-depth study in which we will look at a number of other selected countries from Europe and beyond and which will be the subject of a future publication.

2. Societal background – the role of men and women in society in general and implications for their participation rate in the researcher profession

Work-life balance is a topic of interest and relevance to researchers from both genders. However, due to the fact that men and women still play rather different roles in today's society in general and with regard to family issues in particular, policies that influence the compatibility of a researcher career with a healthy work-life balance often affect women to a stronger degree than men. It is therefore of interest to take a closer look at the societal background in the two countries under consideration, the (traditional) role of men and women, the status quo regarding the representation of men and women at different levels of the career ladder in the researcher profession, and any trends that can be observed in this respect.

Germany

Although the general image of Germany is that of a progressive and modern country, when it comes to the role of women in society the mentality of many people shows some amazingly traditional traits. Despite the fact that many women are highly educated, and in many subjects the number of female university students outnumbers that of men, there is a very common attitude (and not only among men) that within a family the main responsibility for all household tasks as well as many other family related issues, including the education of the children, should rest mostly with the woman. Women who decide not to have children and rather prefer to advance in their career are still looked down upon especially by older people, often being accused of egotism and of behaving irresponsibly towards society (in view of the current demographic trends). In dual career couples it is much more common that the female partner gives up or lowers her career aspirations in order to enable the male partner to take up special career opportunities, to be mobile or to spend extra time on his career progression, leaving her with household chores and child keeping tasks.

Consequently, the further up in the career ladder one goes with regard to positions of seniority, responsibility and pay, the fewer women there are. This applies to practically all work areas, but in particular also to careers in research and higher education. In fact, the typical “scissors diagram” (a graphical representation of the participation of women in different stages of the academic career ladder) for Germany is one of the extreme cases among all European countries. Despite recent initiatives and a growing awareness for the fact that a huge amount of human potential is being

wasted in this way, the numbers for female participation in higher positions are growing very slowly. It is also of interest to note that at the level of professor, the number of women without children is significantly higher than among their male colleagues: about half of all female professors are without children, while some 80% of male professors have one or more children (Krüger 2006).

In industrial research the rate of women among R&D personnel is even lower (11.1% in 2003 (CEWS 2006) than in academia (30.2% in 2005, out of which 14.3% among the professors, and only 9.7% among the full professors (Statistisches Bundesamt Wiesbaden 2006)).

Greece

Regarding societal issues, Greece manifests several peculiarities compared to the rest of Europe, which are to a large extent generated by the Greek family structure. The strength of family bonds and the importance that is attributed to the family are particularly strong. Grandparents very much support young couples both financially and by participating very actively in childcare; it is in fact very common that they take care of children until they are old enough for nursery or even school.

On the other hand, the Greek societal structure is such that there is still an expectation that a woman absorbs a significantly heavier load of housework and childcare than a man. This is changing of course, but very slowly, and it is very common (in many areas, including research) that women leave even very successful careers and/or compromise to less demanding positions to respond to the needs of family life.

Greece is a country with a rather small research population (although many Greeks are pursuing high level scientific work abroad), mainly concentrated in Universities and Public Research Institutes. The gender distribution of researchers presents, as in several other countries, a significant percentage of women in social and life sciences with significantly smaller – but increasing – percentages in mathematics, physics, and engineering. The trends are already evident by looking at the gender distribution of university students (Helsinki Group 2002, Rees 2002, European Commission 2006): Over the last years, the percentage of women pursuing university studies has significantly increased, from a 31% in 1970 to more than 50% in our days. In Humanities, Arts, Law and Social Sciences women outnumber men.

In subsequent career stages, women in academia (where ~65% of the research positions are based) constitute about one third of the staff. Unfortunately, the decreasing percentage of women as we pass to more advanced career stages (observed throughout Europe) is also evident in Greece, where the number of women working as full professors is just above 10%. A similar percentage is observed for female co-ordinators of scientific projects. Regarding industrial research (which in Greece is rather limited), women constitute approximately 35% of the scientific staff (mainly in the manufacturing and pharmaceutical sectors). However, once more, their percentage drops even below 10% as we pass to the more senior positions (European Commission 2006).

3. Structure and reforms in the tertiary education system and effects on later career stages

Even though in this paper we are primarily interested in the question of work-life balance for researchers, i.e. starting at the post-graduate level, it is clear that a number of problems that are encountered at that stage are caused by issues that show up already at the undergraduate level of University education, where attitudes are shaped and fundamental career decisions are taken.

Germany

A long-standing problem of the German (higher) education system has been the very long qualification pathway in the past, which has resulted in researchers getting their PhD in their early thirties, and their first permanent position (if they were lucky) generally not before their early forties (Krimmer et al. 2003). It is clear that this can lead to serious problems especially for women who want to combine an academic career with having a family, since it is still not obvious that the father will be prepared to take an equal share of responsibility in child care and household tasks.

With the introduction of only 12 years of schooling and shorter University degrees within the framework of the Bologna process, it can be hoped that more women will be able to make a

decision not *between* family and career, but for a family *and* a career (within research or otherwise). The replacement of the old "Diplom" degrees (taking normally around five to six years) by the two-cycle system may allow students who would previously often have dropped their studies altogether due to a pregnancy, to finish their first degree, interrupt their career path for one or two semesters, and then continue with a masters programme (in general, the concept of life-long learning in the sense of returning to university at a later stage, after a period of work outside of academia, is not very common in Germany, but this may change with the new degree structure). More structured PhD programmes that are designed to shorten the duration of the PhD may also be of help.

On the other hand, the recent introduction of university fees and the near absence of opportunities to study part-time towards one of the new degrees may effectively have made it more difficult for students who are raising a family at the same time as completing their own university education. The new system contains time limits regarding the maximum number of years that one may be registered towards a certain degree, which previously did not generally exist. The new structured PhD programmes also bear a risk as sometimes they leave less room for individual tailor-made solutions and less flexibility than the traditional rather unstructured doctorates that were based on bilateral arrangements between the PhD candidate and the PhD supervisor, without any strict time limits.

The fact that university students are relatively old in Germany and it is not exceptional for students to have small children has led to the development of a reasonable infrastructure in terms of kindergarten places specifically for children of students, apartments for young families in the student dormitories of some universities and similar measures. This does not exist to the same extent in most of the southern European countries where students tend to be younger and are less likely to have their own family.

Greece

Greece traditionally has relatively short undergraduate studies (in most disciplines one may in principle complete a first degree in 4 years) and a flexible attendance framework. As there is no upper limit to the time one can take to complete the degree, and no compulsory attendance (except for laboratory/applied courses), breaks within studies are relatively easy to accommodate. Misuse of this freedom can of course lead to gaps that are hard to cover at a later stage. Currently, a reform towards stricter policies is being proposed by the Greek Government (among others in the framework of the Bologna process) – and is objected by the university students, who believe that, in view of the overall problems of tertiary education, it will disfavour students with limited financial resources. At the moment, there are no formal provisions for part-time studies, as any student can essentially choose on his own the number of courses he wants to attend and be examined in, and there is no limit to the number of times he can fail an exam.

As Higher Education in Greece is only public (enforced by the Greek Constitution), and there are no fees, the financial burden assumed by extending the studies comes mainly from the absence from the employment market and the rental/living expenses of students.

Going back to university at a later stage is often happening (and facilitated by the lack of any limitations on the level of attendance or the time taken for the completion of one's studies). However, life-long learning as a concept of additional training is seen with some suspicion from the broader society, outside research, fearing that it will be used as a means to "categorise" the employees and result in salary and benefit inequalities.

Provisions for students with children are rare to non-existent at Greek universities. It is expected that the family network will provide the necessary support that would allow such students to follow their studies despite the extra demands imposed on them by childcare needs.

4. Structural aspects of academic careers and their impact on work-life balance

Status and social situation of PhD candidates

As was already mentioned in the introduction, the number of women in science and research decreases the higher one goes in the career ladder – the pipeline starts to leak already at the level of PhD studies (Ackers 2001, Braithwaite 2001). It therefore appears appropriate to take a closer

look at a number of factors that influence the success rate of men and women at this stage, and the attractiveness of continuing an academic career after the completion of the PhD.

Looking for reliable information and data on PhD candidates in different European countries, it becomes apparent that the amount and detail of the data available vary considerable from one country to another. This phenomenon is closely related to the unclear status of PhD candidates – in some countries they are regarded as students and therefore appear in statistics on students rather than those referring to researchers, in others they are clearly considered as members of the research work force, and in some they don't have much of a status at all – and consequently there is little data available on them.

The European Council of PhD Candidates and Young Researchers (EURODOC, www.eurodoc.net) is planning to conduct in 2007 a Europe-wide survey on the status and the working conditions of PhD candidates across Europe. This survey will hopefully shed some more light on the situation of early stage researchers and their social conditions.

Germany

In 2004, a national survey on PhD candidates in Germany was carried out by THESIS (www.thesis.de), a German network of early career researchers. According to this survey (Briede et al. 2004), the majority (51.4%) of PhD candidates at German Universities finance themselves through a regular work contract at a university or a research organisation (contracts as scientific collaborator or similar). The second most common source of income is through work contracts financed by project related funding (28.2%); stipends are a source of income for some 23%. Only 17.9% of all respondents said that they were supported by family members (in particular by their parents), and 15.5% worked outside of research in order to support themselves. Savings (11.8%) and lower-level or short-contract work at University (9.5%) were further sources of income. Only 2.5% of all respondents stated that they received unemployment benefits.

While regular work contracts normally include full social security coverage, including maternity benefits and the possibility to take parental leave, this cannot generally be said for stipends. In this context it is interesting to note that if one looks at the replies of men and women separately, it turns out that for women, the second most common source of income are stipends, followed by project related funding only in the third place. For men, on the other hand, the pattern is similar to that of all PhD candidates taken together, i.e. project related funding comes in second place and stipends are less common. It would be interesting to investigate in more detail what are the reasons for these differences, and in particular whether they are due to preferences by the women themselves, or whether work contracts within research projects are more commonly offered to men than to women. It is also noteworthy that there are significant differences between the different disciplines. In particular, the most common source of funding among social scientists are stipends, with work contracts following in the second place and support through family members in the third. Given that women are underrepresented among the natural sciences where more project funded positions are available, this could at least partially explain why women are more likely to finance themselves through stipends than work contracts. A more detailed analysis of the survey data would certainly be useful here.

PhD stipends are usually limited to at most three years (often they are initially for two years with a possible extension for a third year). Family breaks are usually not taken into account, i.e. it is rare that a stipend gets extended beyond the normal upper limit of the particular scheme because of a maternity break or similar. Given that most PhD candidates in Germany are in their late twenties or early thirties, the period of the PhD often coincides with the time when (especially women) researchers are thinking of starting a family. The lack of social security and flexibility in the case of a stipend can then often lead to researchers abandoning their PhD projects for good.

Greece

In Greece, the situation is rather different from that in Germany. PhD candidates often are self-financed (mainly through tutoring high school students) or are supported by their parents. Partial support from the university is possible only in rare cases. Stipends are far and few in between and there are only few organisations that provide such support. Apart from a number of smaller private foundations the majority of fellowships are awarded by the Greek State Scholarships Foundation, which offers stipends for PhD training both in Greece and abroad.

Those who are not successful in the fierce competition for a stipend often take on jobs as assistants at university. There don't seem to be any strong differences in this respect between men and women – the situation is difficult no matter what gender. However, since undergraduate degrees are rather short, PhD candidates are generally younger than in Germany and the question of compatibility of parenthood and being a PhD candidate in a precarious financial situation appears to be less of a burning issue. In this context one also has to take into account that the social network provided by the family (especially parents and siblings) generally works rather well, so that despite the low income of PhD candidates in Greece it may still be possible to start a family while working towards a PhD.

With regard to social security of PhD candidates the Greek system is in some respects also more favourable than the German one: PhD candidates have the full health and accident insurance of the university (covering also maternity hospitalisation), and in certain cases this can be complemented by coverage provided through the health and accident insurance of the parents (in several insurance schemes, including the one for state employees, there are provisions for unemployed children, without age restrictions). However, the common absence of any contractual employment means that most young researchers in Greece do not participate in any pension scheme (and this situation often remains way beyond the time of their PhD), with the evident consequences at the time of retirement.

Career structures in academia and existence of long term career prospects

One very important question regarding scientific careers that has a bearing on work-life balance is whether the existing structures allow for a longer term career planning and a certain level of job security. Where research careers (especially in academia) are characterised by a high level of insecurity and consequently the need for continuous and uninterrupted output at the highest level of quality and quantity, this often happens at the expense of the private life sphere, and finding an acceptable level of work-life balance becomes exceedingly difficult (Lola et al. 2003, Lola and Meyer 2004). Although this is true for researchers of both sexes, female researchers are often more strongly affected than men, especially in societies in which traditionally family and household chores are not equally distributed between both partners.

Germany

The academic system in Germany is currently undergoing major reforms. In the classical career path at universities, the first step after the PhD would be a position as scientific assistant in order to write the habilitation (the habilitation used to be a prerequisite for a position as associate professor and is still a common requirement in many disciplines, especially in the social sciences and the humanities). Positions as scientific assistants used to be of 6 years duration with the status of temporary civil servant (C1-positions). However, since the reform of the Universities Framework Programme in 2002, these positions are no longer available to new applicants; they are instead offered positions as employees, with contract duration ranging between 6 months and 3 years. Once the habilitation has been obtained or an equivalent status of research achievements can be proved (this applies in particular to the natural sciences where a “cumulative habilitation” is also common), the person can apply for a professorship. However, it is normally not possible to apply for a position at the same university where the person has obtained the habilitation – mobility at this stage is obligatory.

Since 2002 there exists another career path, namely that of a “junior professorship”. This is a position as temporary civil servant, again of maximally six years duration, but with professorial status, i.e. junior professors are entitled and obliged to do *independent* teaching, which is not the case for the assistants. Junior professors get evaluated after three years, and if positively evaluated will be appointed for another three years. They are not required to write a habilitation but after the first term of their appointment are automatically eligible to apply for an associate or full professorship. However, they then also have to move to another university, unless they have been mobile at the point of taking up the junior professorship.

There are almost no tenure track positions in Germany, and very few longer-term positions below professorial level. Various initiatives of early career researchers (e.g. the “Initiative Zukunft Wissenschaft”, www.zukunft-wissenschaft.de) have been demanding the introduction of tenure track positions especially recently. There is also discussion about the introduction of “lecturer”

positions on unlimited contracts, in order to face the projected growth in student numbers in the coming years and the difficult situation of early career researchers who do not obtain a professorship after their habilitation or their junior professorship, but this is still very much under (controversial) discussion.

In summary it can be said that the different steps in the German academic career ladder that lead to a position as professor are relatively clear, despite the current existence of different structures in parallel (classical model normally including the habilitation, or new model via a junior professorship). However, the fact that there are (almost) no tenure-track positions, and that there are few alternatives to a professorship which would allow the early career researcher to remain in academia after the period of qualification, even if an immediate recruitment at professorial level does not take place, make an academic career in Germany a risky undertaking. In this context one should also mention the "twelve year rule" which puts a limit on the time that a person can be employed on temporary contracts within the framework of the University Framework Law. This will be discussed in more detail below.

Industrial research is fairly strong in Germany, and offers a range of career opportunities both in research (depending on the subject area) and in other R&D related professional settings. However, due to the strong division between academia and private sector, many early career researchers hesitate to opt for a career outside of academia, as it is extremely difficult to return to academia after a period in a private enterprise. This is now gradually changing.

Greece

The official qualification pathway in order to become eligible for a position in the Greek University system is relatively straightforward – in theory. There is no such thing as a habilitation, while with a PhD and at least two original publications, a researcher may apply for becoming a lecturer. With an additional two years of research experience *after the PhD,* he/she is eligible for the level of assistant professor. In practice, however, things look quite different: academic openings even at the lowest hierarchical levels are very few, and there are complaints that selections are sometimes made not on the grounds of excellence, but are based on local dynamics and even party politics.

It is therefore not surprising that in practice, many people who complete a PhD finally either look for a career abroad, or drop out of academia. In this framework, women prove to be more vulnerable than men, and they drop out in larger rates than their male colleagues (indeed, while we encounter more women than men as undergraduate students, the percentage of women in academia drops to around 30%, and even well below that, for the higher seniority levels).

Those early career researchers who stay in the system have to live with the fact that there is no concrete professional status for post-doctoral researchers, and, unless covered by a European Fellowship scheme, their salary and working conditions are often anything but satisfactory. Funding from national sources is very limited, implying that researchers have to accept underpaid, short-term contracts which often last only a few months. It is common that these are "service contracts" rather than regular employment contracts, so researchers have to pay for their social security contributions themselves and have no provisions for maternity/parental leave (in particular not during gaps in between contracts). The case of researchers who have reached their forties under a succession of such precarious short-term contracts is not infrequent at all.

At a later stage, research under an employment contract can be pursued mainly in academia or at a research institute (there is only limited research carried out in the private sector, and researchers finding a job in industry as a rule decouple from their field and work mainly in production). In order to obtain a permanent position in academia, starting from the lower levels of the ladder, one has to pass through the stages of "lecturer" and then "assistant professor (untenured)". The whole process takes about eight years but normally results in a permanent position (i.e. it is unusual that an applicant does not pass the evaluation process). It is of course possible to be elected directly at a high position, but this is not very common.

Flexibility of career profiles (teaching / research / administration) over time

Although careers in academia owe much of their popularity to the concept of "academic freedom", in many countries the academic profession is highly regulated and offers surprisingly little flexibility when it comes to the actual job profile that is associated to a particular stage in the career ladder. More flexibility in this respect would make it much easier to achieve a good work-life balance as it

would allow adjusting the amount of time and intellectual energy that one wants to dedicate to the job to the challenges in one's personal life, which are naturally changing over time.

Germany

The German higher education system is based on the unity of teaching and research (Humboldtian model). Professors at university have a teaching load of 8-10 hours per week and are supposed to dedicate the rest of their time to research (including the supervision of research students) and administrative work. Professors at Universities of Applied Sciences (Fachhochschulen, FHs) have a substantially higher teaching load (about 18 hours) but are not expected to do that much research since FHs don't award PhDs, and professors are rather expected to build up and maintain contacts to industry and organisations outside of academia. Junior professors at universities have a teaching load of between 4 and 8 hours, while scientific collaborators and assistants have a load of only 4 hours (however, since they are not entitled to do independent teaching, and other types of service only count at a rate of 25%-50%, the effective load is often much higher).

The German system is very rigid with regard to the distribution of teaching and research. In particular, it is normally quite difficult to move some teaching hours from one semester to another. At universities there are very few part-time professorships, and opting temporarily for a lower workload (at lower pay) is practically impossible (the situation is different at FHs).

In a recent communication (Wissenschaftsrat 2006) the Wissenschaftsrat (German Science Council) has proposed to introduce more flexibility and diversity in academic careers, by allowing higher education institutions to create positions with different profiles (more emphasis on teaching vs. more emphasis on research). This could be achieved by introducing positions as lecturers as mentioned above (below professorial level), or by breaking up the very rigid rules regarding the number of hours of teaching. With the general move towards more diversification and stratification in the German university system it can be expected that things will be moving in this respect in the next few years (in some of the Länder this is already happening, see the overview in (Deutscher Hochschulverband 2006).

Greece

The Greek law for Higher Education puts certain limitations to the balance between teaching, research and administrative duties for its academic staff.

Regarding the minimum teaching load that has to be taken on, the Greek law clearly defines the minimum number of hours per week, which is set for a full-time appointment at 6 hours, for 13 weeks per semester. This applies to staff at all levels; however, lecturers and assistant professors teach on average for more than 10 hours, to respond to the teaching needs of the department. In order to become full professor, teaching at post-graduate level and/or PhD thesis supervision for at least 3 years is required. There is also the possibility for an academic staff member to pass to part-time (50%) employment for periods of one academic year, but there are several restrictions: any such arrangement has to be accepted by the department and, while under this status, the staff member can participate neither in the General Assembly of the Department nor in several committees. Moreover, in principle it is not allowed to move all one’s teaching duties to one semester.

On the other hand, research and administrative duties are not very clearly defined. Research achievements are usually evaluated only when the scientist applies for a promotion to the next level (i.e. from lecturer to assistant professor, and then to associate or full professor). In order to strengthen the research profile of academic staff, one year of sabbatical leave for every 6 years of service is given; moreover, the university summer holidays of July and August are used by many researchers for shorter research visits and conference attendance. Regarding administrative duties, most staff (and in small departments, all) participate in the departmental assembly, as well as various smaller committees. Associate and Full Professors are eligible for the highest levels within University Governance, namely becoming Rectors and Vice Rectors, and in these ranks a strong gender bias is statistically observed.

The balance and flexibility between the different areas of activity is determined by the needs of the department and the interests of the scientist. However, in order to reach the higher grades in the university hierarchy, an active involvement in all three activities is required and evaluated. The

clear drop of the percentage of women at the highest levels is illustrating the difficulties to keep up with all the duties while also having a normal family life.

Policies regarding fixed term contracts in academia and other time limits and their impact on family compatibility

As we have seen above, combining a scientific career with a healthy family life can be very difficult, especially given the financial constraints that early career researchers are often facing. An additional obstacle that effectively penalises researchers who try to succeed in both spheres of life are strict time limits and policies with regard to fixed term contracts that apply a "one size fits all" philosophy without taking into account the personal situation of the individuals concerned.

Germany

With regard to PhD and post-doc funding (stipends, grants etc.) it can be observed that age limits are slowly disappearing, but are often replaced by "time after Master level degree / PhD" (usually referring to the actual time that has passed, not to the "full-time equivalent spent on research" that appears e.g. in the eligibility rules for the EU's Marie Curie Actions). In some cases these time limits are increased in case there are any children that need to be taken care of, but this is not always the case and even then often only refers to the mother. Other personal reasons such as the need to care for ageing parents or ill family members are not normally considered when deciding about the eligibility of an applicant with regard to time limits.

Even during the actual funding period, it is not evident that extra allowance in the duration of the funding is offered, in case a child is born during that time. Quite often the fellowship is paid for the original period without prolongation, and the fellow is expected to work as much as possible to achieve the research aims despite the extra burden of childcare. It is normally not possible to benefit from a PhD or post-doc stipend on a part-time basis (i.e. by receiving a reduced amount over a prolonged period of time). The only possibility in case of temporary intense family related duties (e.g. caring for ill or elderly family members) consists in interrupting the stipend for a certain period of time, but even this is often impossible or connected to a lot of bureaucracy.

While theoretically there is no limit as to the time an early career researcher can spend on (different) fellowships, this is different for fixed term contracts in the university and public research system, where the so-called "12-year rule" ("15-year rule" in the case of medicine) can effectively put an end to an academic career if the person does not obtain a permanent position in time. The "12-year rule" applies nation-wide. It states that under the provisions of the University Framework Law, a person can be employed on temporary contracts for a maximum of 6 years before the PhD and a further 6 years afterwards. If less than 6 years have been spent on the PhD (including time spent on stipends, working outside of research, or without employment), then the difference can be carried over to the post-doc phase. It should be noted that the law does not speak of full-time equivalents, but time spent on contracts of as little as 25% count in full.

It is clear that this rule affects in particular researchers who for family related reasons cannot dedicate 100% of their time to obtaining their respective qualification. The introduction of the law in 2002 resulted in massive protests from the side of early career researchers, and in particular those who had started their career under different framework conditions ("lost generation"). In some cases not only did the affected researchers suffer from the rule, but also the scientific system as a whole, with publicly funded projects not being carried out, because the researchers who had been foreseen to work on those projects and in many cases had applied for the funding themselves could not be employed on those projects due to the "12-year rule".

There is in principle the possibility to employ researchers on temporary contracts outside the special University Framework Law, applying the usual laws for fixed term contracts (according to the EU Fixed term working directive). However, Universities and research institutions are very reluctant to make use of this possibility due to the uncertainty about the exact legal situation and the fear that the researchers concerned might go to court to obtain a conversion of their temporary contracts to permanent positions.

Due to the problems explained above, the German government has recently softened the "12- year rule" (BMBF 2006) insofar as even after the completion of the twelve years, researchers can now be employed on temporary contracts within the University Framework Law if the position is mainly funded by external sources (i.e. not from the general budget). Also, a family component has been

introduced by allowing an extra two years for every child that has to be taken care of. However, other family related issues (e.g. caring for sick or elderly family members) are not acknowledged, part-time work above 25% still counts in full, and time funded by external sources can be added on only at the end of the twelve year period – if this condition is given during the twelve years, no extra time allowance is granted.

Greece

As mentioned earlier, there are not many opportunities for PhD candidates to benefit from fellowships and stipends. Moreover, just as in the case of Germany, those that exist don't always provide much flexibility in their eligibility criteria when it comes to time limits and family related breaks. Regarding the actual implementation phase, there are no global procedures for interrupting a fellowship or asking for an extension on the basis of parenthood or other family obligations (such issues are normally dealt with on a case-by-case basis).

At the post-doctoral level the problem of an upper limit for fixed term contracts does not pose itself in the same way as for Germany, as most early career researchers are not in the lucky situation to actually benefit from a regular employment contract but have to make do with services contracts. These do not fall under the EU Fixed term working directive, so that there are no time limits for the succession of such precarious contracts.

At the level of lecturer or assistant professor, time limits exist in the following form: lecturers (who do not have a permanent position) have to undergo an evaluation, which can take place at most twice, in the period between their 4th and 7th year. The process normally takes about 12 months, and in case of a negative result no further employment at the lecturer level is possible. A similar situation appears at the level of assistant professor, where an evaluation after 3 years of service determines whether the person receives tenure or has to leave the system. However, in practice it is extremely rare that either of these two evaluations is not passed successfully.

Consideration of family related career breaks for recruitment and career advancement

The final question we want to look at in this part is how family related periods of lower scientific productivity are treated at the time of application for a position in academia and with regard to evaluation and career progression.

Germany

In Germany, the question whether and to what extent family related career breaks and similar issues are taken into account at the time of recruitment in the public research system (universities, research institutions) depends very much on each individual case. There are no general rules in this respect – recruitment committees may or may not make special “allowances” in this respect. At universities it is obligatory that the department's “Equal Opportunities Officer” take part in the meetings of the hiring committee (in an advisory and controlling function but without direct voting rights). However, especially in subject areas with few women, the role of “Equal Opportunities Officer” is often taken on by graduate or even undergraduate students who may suffer from a conflict of interest if they voice their opinion too vividly or point out unequal treatment of applicants with non-linear career histories. The general attitude to the topic is slowly changing, especially as more junior faculty members are involved in the recruitment and selection committees, who are often more receptive to the needs of colleagues with family, as they may be affected by the same issues themselves.

The German academic system does not have a culture of appraisal based on evaluation of the individual (this will change in the next few years due to the recent introduction of a performance based salary scale). The question how periods of lower productivity are considered for career progression once a person has obtained a permanent position therefore does not pose itself for the time being, but will certainly gain importance in the future.

There are a number of programmes (CEWS 2005) both at national level but in particular also at the level of the “Länder”, to encourage and facilitate the reintegration of researchers in the academic system who have taken a career break due to family reasons. These include special fellowship programmes below professorial level (for example for the habilitation), special co-funded professorships as well as mentoring programmes (the latter mainly addressed to women researchers).

Greece

Once inside the academic system, a Greek researcher is effectively not subject to evaluations, unless he/she applies for a promotion. As we already mentioned above, at the time of recruitment only associate and full professors are permanent. Assistant professors are initially on tenure-track positions, while lecturers are on temporary positions and have to be promoted to become assistant professors. However, this was not the case in the past, when a large number of people working at the university became permanent already as lecturers (and even assistants, without a PhD). This saturated the system and significantly limited the number of new openings.

The limited number of positions clearly poses an additional obstacle to researchers with non-linear career paths, since they generally find it difficult to match the record of colleagues who never had a break in their career (particularly for subjects that move very fast, and where vast amounts of literature and new results appear all the time). In Greece, it is often the case that local dynamics prevail over excellence, but the bias is more towards hiring people who already have a long-standing connection with a department rather than giving a chance to researchers with career breaks.

On the other hand, once hired, there are hardly any cases of staff who do not make it from tenure-track to a permanent position, even when their research performance is relatively weak. In this case they focus on teaching duties and do not progress further. However, this can hardly be seen as a positive development: the important issue is to give to researchers (of both genders) the chance to combine an active research career with a personal life, not to simply offer a stable employment with no further progress. As it stands, the system is becoming further saturated, resulting in fewer chances for really good people.

Although a break for family reasons is in theory not an obstacle for people already in the system, in practice, the overall conditions and lack of funding for research make catching up after such a break quite hard. In the end, only just above 10% of full professors are women (European Commission 2006), confirming the strong gender bias observed throughout Europe. This seems to be a combined effect of a difficulty to reconcile research with the responsibilities of a family, but also an underlying “assumption” that a woman will not be able to respond to the needs of a more demanding position due to her “extra” burdens within the family.

5. Mobility and work-life balance

The usefulness of geographic mobility of researchers is uncontested. It provides the opportunity to exchange ideas with colleagues from other countries, learn new techniques and use equipment and resources that often would not be available at home. However, international (especially longer-term) mobility also has a strong impact on the personal life of the researchers involved as well as their families. How is mobility valued at the time of recruitment and career progression, and how are the possible negative side effects taken into account? What kind of support structures exist to overcome the problems that mobility can cause in the private sphere of the person affected?

Germany

In Germany, in the natural sciences it is almost indispensable to be able to prove some level of international mobility in order to obtain a (permanent) position in academia, or to advance up in the career ladder. In the social sciences and especially in the humanities this is – in general - not such an essential criterion. However, even if international mobility is not absolutely necessary in these areas, mobility within Germany is still required, as the law essentially forbids to recruit a person who has obtained his habilitation at the same university, or in the case of junior professors, who has not been mobile at least prior to taking up the junior professorship. Some of the major research funding programmes explicitly require substantial international experience (for example, to be eligible for the DFG's Emmy-Noether programme the applicant should normally have been internationally mobile during his pre- or post-doc phase for at least 12 months).

International mobility is often more challenging than mobility within Germany, especially when there are major cultural differences between Germany and the host country (e.g. the language). However, having to move even within the country with a young family or just with a partner can be a major obstacle to combining career progression and the development of a healthy personal life.

There is now a rising awareness for the needs of mobile researchers (in particular in the public sector), also due to developments at EU level. Over the last couple of years (since the creation of the Researchers' Mobility Portal (ec.europa.eu/eracareers) and the setting-up of the European Network of Mobility Centres ERA-MORE), a whole number of initiatives have been started in Germany in order to facilitate the integration of mobile researchers at German host institutions. One of the latest initiatives in this area is the “contest for welcome centres” by the Alexander-von-Humboldt Foundation (the German node for the ERA-MORE network). The three winners of the contest (Universities of Bochum, Bonn and Marburg) not only offer practical advice to foreigners coming to Germany, but also support for returning German researchers who have spent some time abroad. Even if only three applicants were awarded the prize (with two runner-ups receiving a special mention), the campaign for the contest has helped to increase awareness for the special needs of mobile researchers nation-wide.

Welcome centres and similar offices at German universities sometimes also provide assistance to dual career couples, based on collaboration with local employers also outside of academia. However, this aspect still receives rather little attention, and most dual career couples are still left alone in their attempts to find a way such that both partners can pursue their career, be it in academia or in other sectors.

Greece

Mobility is not a must in order to get a research job in Greece, and it may often mean decoupling from the local research environment and being bypassed by researchers who opt to stay (although this is now slowly changing). The problem, however, is that there is a strong gender inequality regarding whether one can be mobile to start with. Female researchers, who traditionally take on more responsibilities within a Greek family, find it more difficult to get the extra support needed to be mobile, particularly at later career stages (when there are children that go to school). It should also be kept in mind that mobility affects a lot whether a researcher with children can get help from the family or not, i.e. whether the normally well-developed social network provided by family and relatives still works in this respect.

As explained above, mobility also requires considering the problems of dual career couples. In Greece, however, provisions for dual careers do not exist in a structured way and are mainly dealt with on an individual basis. Here one should also state the other side of the coin: that there have been complaints of “family favouritism” within academia, when partners of academic staff have been selected over significantly more qualified candidates.

6. Salary levels, social benefits and labour law provisions in higher education and research

Having seen the manifold difficulties that researchers face in combining family life with a successful career, it becomes clear that a supportive contractual framework is required that takes into account the family dimension. Appropriate working conditions and salaries, flexible working hours (already discussed above) and adequate provisions for maternity and parental leave are among the most crucial elements in this discussion.

Payment Levels and Benefits

Germany

Those researchers who have a regular full-time work contract as scientific collaborator, a position as scientific assistant or a professorship in the German higher education system usually benefit from a salary and related benefits that allow them a reasonable to high standard of living, at least under normal circumstances. However, early career researchers (especially during their PhD but sometimes also as post-docs) are often offered only partial contracts (but are normally still expected to work full-time). In this case money can get quite tight, especially if a family has to be supported, and as a result it may become necessary to take on extra-jobs outside of academia.

Positions as scientific collaborators are normally paid according to the BAT2a scale: an early career researcher at the age of 30, single without dependants, earns about 3200 EUR gross under this scheme, corresponding to about 1800 EUR net. A scientific assistant (C1 under the old C-scale) of the same age and family status will have about 3100 EUR gross but a little more than

2400 EUR net, due to the lower social security deductions as civil servant. On the other hand, a junior professor, again 30 years of age and single, will be paid according to W1 in the new W-scale. She or he will get about 3400 EUR gross, resulting in some 2700 EUR net.

For associate and full professors, the level of pay looks as follows: A professor who is 45 years old, without children, and paid under the old C-scale will get about 4500 EUR gross (about 3300 EUR net) at level C3 (associate professor) and about 5300 EUR gross (3700 EUR net) at level C4 (full professor). If on the other hand the professor is paid according to the new W-scale, then the numbers for the basic salary are respectively 3900 EUR gross / 2900 EUR net for level W2 (associate professor) and 4700 EUR gross / 3400 EUR net for level W3 (full professor). A performance related bonus can be paid on top of the basic rate. Since the new W-scale has been introduced only recently, it is only applicable to the newly recruited staff (and few others who have converted from the C-scale to the W-scale), and there is not yet much experience in the determination of the performance related amount, especially since in the German higher education and research system there is not much of a culture of performance evaluation and appraisal at individual level.

For more senior persons the numbers go up, as the level of pay depends on the age, except for the positions paid according to the new W-scale, as this new scale does not take into account the age of the person. Both as employee under the BAT-scheme and as civil servant, extra allowances are paid if the person is married or if there are children to be taken into account. All payment levels quoted for civil servants (C-scale, W-scale) are exclusive of private health insurance, which has to be paid from the amount quoted (at the level of 50% coverage, the rest being covered by state funds).

The online salary calculator (Klenk 2006) provides more details on the payment levels in the public system. Researcher salaries in the private sector are usually substantially higher than in the public sector.

Greece

In Greece researcher salaries are in general very low, particularly at the early career stages, when the payment is often not sufficient to survive from it, and an extra job is taken on. In particular, looking at the different career stages, we observe the following:

- PhD candidates are typically self-funded (or family-funded). Post-docs under national funds normally receive 600-700 EUR monthly, and only for those who become academic staff things get gradually better.
- Academic staff has the status of civil servants, and their salaries lie between 1200 EUR and 3000 EUR net (from a lecturer with 2 years of work experience to a full professor close to retirement). However, almost half of the salary comes as “allowances”, and thus the pension one finally obtains is a significantly reduced fraction of the salary.
- Private research is limited, and is mainly not related to scientific innovation but to development. In this case however, researchers are typically less well paid than in the public sector, unless they obtain a position that is mainly managerial. The percentage of women in this sector is close to 35%, but again drops as we pass to more senior positions.

The low payment levels are clearly very disruptive to family life, particularly when the salary from a research position is not sufficient and a second job is needed. Even if a researcher keeps a single post, the fact that the partner may be working extra, means he or she will have less time to help with household and children. The fact that one sees many women at the lower academic levels is often due to men taking more risks and looking for more challenging career options, even at the expense of quitting research. Since these are usually managerial positions, thus very demanding and with long working hours, they are not an easy target for researchers with time consuming family obligations, which in Greece generally means female researchers.

Maternity and Parental Leave

Germany

In Germany, every woman who is about to give birth has the right to 14 weeks of maternity leave at full pay, six weeks before delivery and eight weeks afterwards. While a woman may decide to

actually work up until the day she gives birth, it is legally forbidden for her to work during the eight weeks afterwards.

There is also the possibility to take time off afterwards in order to take care of the child. The legal framework for this provision has very recently been reformed (cf. www.elterngeld.net). The new law allows the parents to take off a total of 12 person months between them (i.e. either only mother or only father or distributed between both), with an extra two months added on if really both partners stay at home for part of the time. The person who stays at home receives 67% of the regular net income, up to a maximum of 1,800 EUR per month. In case the person does not have a regular work contract (house wife or house husband/ unemployed / self-employed) or has a low income, a flat rate of 300 EUR per month is paid.

The introduction of this new regulation has not been uncontroversial, as it is quite an expensive measure. There have also been protests by some groups since people with low income benefit very little or not at all from the measure, while people whose income is very elevated (so that they could relatively comfortably pay a day mother, for example) receive a high level of support. This affects in particular also early career researchers on a stipend rather than a work contract, who will receive only the minimum flat rate of 300 EUR per month, rather than 67% of their regular stipend. Under the old regulation ("Erziehungsgeld") they would also have received 300 EUR per month, but for 2 years rather than 12 or 14 months.

The really innovative aspect of the new regulation is the introduction of the two "partner months" which will be granted only if both partners take off time from work. However, it says a lot that in the media these two months have very often been referred to as "father months", reflecting the general mentality that it would be natural for the mother to stay at home with the child (or the children) for the entire twelve months, while it would be something special (which needs to be especially rewarded!) if the father also stays at home for two months.

Greece

In Greece there is a favourable legislation with concrete provisions for employed women, in order to promote family life in a country that suffers from under-population. However, this is mainly applicable to researchers that are under an employment contract, which is often not the case (particularly for researchers at relatively early career stages). Moreover, in Greece, the main problem is not the lack of legislation, but its appropriate implementation and control.

For employment contracts under the Greek law, the following applies:

The general provisions regarding maternity leave for women employed under a work contract are very similar to the rest of Europe. Maternity leave consists of 8 weeks before birth and 9 weeks afterwards. If less than 8 weeks are taken before birth, the difference can be transferred. There are also provisions for sick leave linked to childbirth, upon providing a doctor's certificate. After pregnancy the woman can come back to a position that is under no circumstances inferior to the one she was occupying before (both for the public and private sector – however this requires an employment status and does not apply by default in cases of fellowships, so many female researchers cannot actually benefit from this right).

Recent mothers who are employed either in the private or the public sector also benefit from reduced working time: for 30 months following childbirth, women are entitled to one hour less per day (which they can use either to come later to work, or leave earlier). Upon agreement of both parties (employer-employee), this can be modified to 2 hours for the first 12 months, and 1 hour for another 6 months. Fathers can take the above leave only in the case the mother does not make use of it. This leave period is paid at 100%.

Additional provisions for unpaid leave also exist, for up to 3 months for each parent (to be given anytime starting from the end of the 17th week until the child is 2.5 years old). In case of divorce, 6 months can be given to the parent who has the child. However, for this last item, there are also several restrictions. For instance there is a priority list, since not more than 8% of the personnel for each year can make use of such an entitlement. Moreover, it cannot be used by people who have worked for less than one year in their job (often a problem for researchers who receive a succession of short-term contracts).

Finally, it is also possible to obtain additional leave for illness of dependent children (6, 8 and 10 days for one, two or more children respectively), and 4 days to visit the school of the children – allocated to one of the parents.

Infrastructure and facilities for researchers with children

Germany

According to the law, every child between the age of 3 years and school entry has the right for a (half-day) place in a kindergarten. However, there are not always enough places available in a reasonable distance, in which case working parents are forced to arrange for family members to look after the children (especially parents), organise private child supervision with other parents on a rotating basis, or employ a person for the purpose. But even where child care facilities are in principle available, they are often not adjusted to the special needs of researchers: restrictive opening hours and location far away from the work place make it often difficult to truly benefit from these institutions.

At the level of schools, similar problems exist: especially at primary level, school normally finishes at 1 o'clock or even earlier, with the afternoon hours reserved for studying and playing at home. Regular afternoon classes normally only start at upper secondary level, and even in these cases most schools don't provide lunch, but students go home for lunch and then return for their afternoon classes and activities. In recent years, special initiatives have been started to raise the number of full-day schools, with a special view to compatibility of professional and family life (in particular for women). However, these initiatives have not been uncontested due to the costs involved, but also due to the traditional views of many people who do not agree with the idea of putting children in the care of an institution for the whole day. Although more full-day schools exist now than ten years ago, a lot still needs to be done in order to be able to offer full-day supervision of their children at school to all those parents who would like to make use of it.

For those people who cannot benefit from child care facilities or full-day schools, there is still the option to employ a “day-mother” or domestic helper who will take care of the children or at least prepare the food for the children while the parents are away. The related expenses are partially tax deductible, but this option is certainly only of interest for those parents with a sufficiently high income.

Greece

In Greece, there is a general feeling that the existing infrastructure for assisting working parents is not sufficient, particularly in what concerns child care facilities. In the case that the grandparents cannot help with childcare, there are not many alternatives (particularly non-private ones). The public facilities for pre-school children are not sufficient, while private kindergartens do exist, but they are often too expensive in view of the low income of researchers.

The Greek law has provisions for the creation of childcare centres, for companies/institutions with 300 or more employees. However, this covers only a fraction of the employed population and the rest need to seek individual arrangements.

The main problem, however is that the timetable of the existing child care facilities does not match the one of researchers, who need to work long hours, often also on weekends, if they are to stay sufficiently active in their field. Especially in the experimental sciences working hours can also be highly unpredictable, so that flexible offers are needed.

7. Conclusions and Recommendations

The analysis above seems to confirm that many researchers face serious difficulties in trying to combine a successful career with family life, and that this is not only a problem of a particular country or environment. Indeed, Germany and Greece are two countries with significant differences in their societal, educational and cultural structures. Yet, in both countries researchers find it hard to cope, with women being particularly vulnerable to the problems that are arising.

To summarise, some of the main difficulties appear to be the following:

- The lack of flexibility at all levels of the system, starting from tertiary education to the most senior academic positions (e.g. part-time arrangements, changing career profiles).
- The absence of a clear status for early career researchers and the related insecurities regarding their contractual situation (in particular with respect to social security).
- The scarcity of long-term career opportunities and insufficient job security below the professorial level.
- The evaluation systems, which do not take appropriately into account career breaks (for family or other reasons) and tend to favour researchers with a linear career.
- The non-sufficient family support infrastructures, which make it difficult to face the practical problems related to family life, particularly when both parents are researchers.
- The implicit assumption that a woman has to undertake a more active role than her partner in housekeeping and the raising of children.
- The difficulty in dealing with violations of the Equal Opportunity principles, which have become less open and therefore harder to trace and deal with.

How can one deal with these problems?

First of all, it is clear that since both partners need to have a career and a personal life, the effort towards work-life balance has to take into account the needs of both. In this direction:

- We have seen that many of the problems arising are related to the succession of short appointments with poorly defined status and conditions. Thus, the establishment of a clear professional identity for researchers at all career stages will be a very positive step. In particular, where no objective reasons speak against it, researchers should be offered employment contracts rather than stipends, so that they are able to benefit from provisions that are already in place for other employees. Also, more longer-term career opportunities (including tenure-track positions with clearly defined evaluation procedures) are needed in order to allow especially early career researchers to plan ahead.
- Awareness-raising is needed towards making the evaluation systems more sensitive to cases of researchers who have proven their ability for high level work, but, due to personal circumstances (e.g. family reasons) did not follow a linear career path. The replacement of “age limits” with the experience criterion, which is the current trend at European level, is a very positive step in this direction.
- Adequate public family support infrastructures that match the time schedule of researchers need to be put in place. For example, the presence of on-site childcare centres would allow parents to spend time with their children during breaks, e.g. over lunch.
- More flexible work schedules for working parents and, where feasible, work from home as long as the child is small, could also be very helpful.
- Dual career service centres should become part of the standard support system of any university and research centre, in order to help both partners find appropriate positions. The provision of information on job opportunities for accompanying partners of mobile researchers is one of the support actions of the mobility centres of the ERA-MORE network, but the coverage of these networks is not yet entirely satisfactory and awareness of this network is still lacking.
- Once certain concrete improvements are made, it will be easier to also fight against prejudice and implicit non-EO policies. Many problems regarding equal opportunities are in fact triggered by the difficulties described above, and a better professional and more supportive framework for researchers will significantly help in this direction as well.

While we have stressed so far that the question of work-life balance affects male and female researchers alike, it is clear that due to traditions and cultural circumstances women are more strongly affected than men by the current shortcomings of the system. This is at least one of the reasons why female researchers are currently under-represented in many areas, particularly at the highest career stages, which by itself creates an imbalance and affects future developments. *It may be required, therefore, for a limited time period, to take some more positive action towards supporting women.* However, this has to be done in a careful and fair way; otherwise it might

backfire against women. A typical example along these lines is the establishment of quotas, which can lead to more women obtaining research positions, but can then also lead to the perception that they did not obtain these positions on the basis of their achievements but due to the quota only ("quota women"). This could have devastating consequences for their further career development, actually aggravating the fact that female researchers do not progress to the highest career stages at the same rate as their male colleagues.

On the other hand, measures that could support female researchers without creating a bias in the opposite direction could be the following:

- Mentoring programmes especially for female early career researchers, to counter act the lack of positive role models.
- Awareness-raising events, lists of contact points and contact persons for gender-related work, databases of female experts in various areas, e-mail distribution lists and appropriate web sites, sharing current awareness on the gender aspects of research.
- Promoting equal opportunity employment and monitoring gender-equality via regular statistical monitoring, ensuring that there is no gender bias at the selection level (for instance verify that the number of female researchers interviewed be at least proportional to the corresponding number of female applicants).
- Concrete and non-stop provisions on training and career development that also target the needs of female researchers. These are crucial and are in fact already being integrated in the practices of many public and private bodies, including the European Commission and International Organisations (however, they are far from being global employment practices). Among the measures adopted, provisions are made for women to participate in expert panels, statutory committees and decision-making bodies. Supervisors are encouraged to identify high potential men and women and provide them with adequate training. Moreover, training seminars are also addressed to supervisors as well, in order to raise awareness on gender issues.

Overall, it should be kept in mind that we are not dealing with a man-woman battle, but with the need to create appropriate conditions for both partners to enjoy a high level of job satisfaction, and to be able to pursue their career visions while also having a fulfilling family life.

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