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Navigating treacherous waters

Exploring the dual career experiences of European Research Council applicants[******]

Abstract: Careers of scientists do not unfold in a social vacuum. According to the concept of linked lives (Moen, 2003), the career of one partner has implications for the career of the other. Using a quantitative survey and qualitative interviews we explore the experiences of navigating dual careers for a sample of scientists who applied for a European Research Council (ERC) grant. While the notion of an ideal scientist is built on an individualistic model of unrestricted international mobility and dedication, our quantitative analysis shows that the majority of ERC applicants have an employed partner, who is often also a scientist, and children. The majority of ERC applicants with an employed partner say both careers are equally important, but the proportion is higher among women ERC applicants. These scientists experience difficulties in coordinating and combining dual careers, even if their own career is considered more important. This is evident for established scientists as well as for scientists who are in the 'rush hour' of life. From the scientists' lived experiences it becomes evident that the ERC applicants want to comply with the notion of the 'ideal' scientist but face limitations, especially when mobility opportunities are constrained by the portability of the partners' careers. Dual-career cycling dilemmas are raised by mobility events, often resulting in priority shifts through a competing rather than synchronic process. These dilemmas arise for both men and women scientists, but some of the consequences–where and with whom the children live and who has primary care responsibilities–are quite gendered. We conclude with recommendations for employers and funders in supporting dual careers in science.

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Keywords: linked lives; dual career couples; scientific career paths; international mobility; academic couples; Europe

Durch tückische Gewässer navigieren

Die Erfahrungen mit Doppelkarrieren von Antragsteller_innen beim European Research Council

Zusammenfassung: Die Karrieren von Wissenschaftler_innen entwickeln sich nicht in einem sozialen Vakuum. Nach dem Konzept der „linked lives" (Moen 2003) hat der Karriereverlauf eines Partners Auswirkungen auf die Karriere des anderen Partners. Wir untersuchen die Doppelkarrieren von Wissenschaftler_innen, die sich auf eine Förderung durch den European Research Council (ERC) beworben haben, auf Basis einer quantitativen Befragung und von qualitativen Interviews. Während das idealtypische Bild von Wissenschaftler_innen auf einem individualistischen Karrieremodell mit uneingeschränkter internationaler Mobilität und Karriereengagement beruht, zeigt sich quantitativ, dass die Mehrheit der Antragsteller_innen beim ERC erwerbstätige Partner_innen, häufig ebenfalls Wissenschaftler_innen, und Kinder haben. Das Gros der ERC-Antragsteller_innen mit berufstätigen Partner_innen bewertet, dass beide Karrieren in der Partnerschaft gleich wichtig sind. Bei den Antragstellerinnen ist der Anteil jedoch höher. Selbst wenn die eigene Karriere wichtiger erscheint, erleben die Wissenschaftler_innen die Koordination zweier Karrieren als nicht einfach. Dies gilt sowohl für ältere etablierte Wissenschaftler_innen als auch für Wissenschaftler_innen, die sich noch in der "Rushhour" des Lebens befinden. In den erlebten Erfahrungen der ERC-Antragsteller_innen zeigt sich, dass sie dem vorherrschenden Idealbild in der Wissenschaft entsprechen wollen, aber an Grenzen stoßen, insbesondere wenn Mobilitätsanforderungen durch fehlende Übertragbarkeit des Job der Partner_innen eingeschränkt ist. Vor diesem Hintergrund stellt sich die Frage, wie sie zwei Karrieren koordinieren, für sie immer wieder neu. Diese Anforderungen bestehen sowohl für Wissenschaftler als auch Wissenschaftlerinnen, aber einige der Konsequenzen – etwa bei wem die Kinder sind und wer vorrangig die Betreuung übernimmt – sind geschlechtsspezifisch. Wir ziehen Schlussfolgerungen zur Förderung dualer Karrieren in der Wissenschaft für Arbeitgeber_innen und Forschungsförderung.

Stichworte: Doppelkarrierepaare; Wissenschaftskarriere; Internationale Mobilität; Akademikerpaare; Europa; dual career

1. Introduction

If contemporary career paths in science are like "braided rivers" (Batchelor et al. 2021), trying to coordinate dual careers may be like navigating treacherous waters. A successful career in science is often assumed to require absolute dedication, high productivity, and unrestricted international mobility. As the lives of partners in dual-career couples are closely linked (Moen 2003), meeting these career requirements has to be continuously coordinated between them (Livingston/Ryu 2020). The effort needed to sustain dual careers can be demanding, particularly when couples have children. Early-career scientists in the so-called 'rush hour' of life, the period from about age 30 through to mid-40s, may thus find it hard to reconcile career requirements with family obligations. In addition, dual careers pose challenges to universities in hiring and retaining scientists (Baker 2004; Rivera 2017; Tzanakou 2017). Yet, evidence on the experience of dual careers in science is scarce (Baker 2004; Rusconi/Solga 2011).

Pathways to career success in science have been elaborated previously, typically with a focus on gender differences. Career gaps between men and women emerge, with mothers likely to progress more slowly, to hold less prestigious jobs than men, or to leave science altogether (e.g., Baker 2010; Buber et al. 2011; European Commission 2021; Joecks et al. 2014; Xie/Shauman 2003). Among the selective group that stays in science, career similarities between men and women are often stronger than the differences (Joecks et al. 2014; Jungbauer-Gans/Gross 2013; Vinkenburg et al. 2020).

In this contribution, we explore the experiences of scientists with an employed partner in navigating dual careers. We make use of quantitative and qualitative data to examine the following questions: Whose career has been/is more important, and how easy has it been to combine dual careers? How do scientists reflect on and make sense of navigating dual careers given demanding career requirements?

Our analysis is based on survey data and interviews collected in 2013 from scientists who applied for a grant from the European Research Council (ERC), source of the most prestigious research grants available in Europe. This population is a select sample of scientists, not only because they have embarked upon a career in science following their PhD, but also because ERC grant applicants, due to the elite nature of the funding scheme, are unique among scientists in general with regard to ambition and excellence. In this context, we describe the dual-career situation of the ERC applicants at the time of application and examine their reflections on their lived experiences up to that point as a potential area of conflict that has to be navigated between career norms and family requirements. The goal of the original project in which the data was collected was to explore gendered career paths in science (Vinkenburg et al. 2020), and in doing so, dual careers emerged as a highly salient theme for ERC applicants. Dual-career couples are often distinguished from dual-earner couples, assuming that coordinating work and family spheres is easier

when at least one partner 'only' has a job to earn money (Rapoport/Rapoport 1969; Rusconi/Solga 2007). Focusing on scientists, we prefer the term 'dual careers', and we let the data speak to the coordination of a career in science for those with employed partners.

2. Dual careers in science

Associated with the rise of women in academia (European Commission 2021) is a significant increase in the number of dual-career couples with two highly-educated, often academic, partners (Connolly et al. 2011; Ferber/Loeb 1997; Schiebinger et al. 2008). Dual-career couples have to navigate and coordinate individual career goals and ideals and reconcile these with work-family requirements. Among academics, those who pursue a career in science face very particular career requirements in addition to these dual-career challenges, for example shared beliefs that a successful career in science is indicated by their output (e.g., publications, funding), assessed through rigorous peer review, often focusing on early achievements (European Commission 2004). Absolute dedication is demanded and the early stages of successful careers involve very few promotions along the status hierarchy. Mobility is generally expected (in terms of longer stays or positions abroad), ideally including employment with distinguished scholars at elite institutions (Morano-Foadi 2005), preferably in the United States (Uhly et al. 2017; Zippel 2017). Scientists must turn professional and institutional demands to their advantage (Herschberg et al. 2014). Fitting the implicit but normative image of the ideal scientist is important (van Veelen/Derks 2022) for being hired or promoted or securing a permanent position (Herschberg et al. 2018; O'Laughlin/Bischoff 2005).

The expectations of individual performance for scientists are built on particular partnership and family arrangements (Rusconi et al. 2013). Historically, ideal scientists were "free standing individuals that have in fact been male heads of households with relatively mobile family units" (Schiebinger 2011: 163). Emphasizing the challenge of deviating from the ideal, Brouns and Addis (2004: 28) concluded that "the dominant image of the excellent scientist is more or less grounded in a male career pattern with an absolute dedication to science. Many people – especially those with family responsibilities – find it hard to live up to this image".

In her work on linked lives, Moen (2003: 238f.) states that contemporary career development is a conjoint process between partners, embedded in institutional arrangements. Findings on patterns in couples' career biographies are key to understanding couples' reflections. From a conceptual perspective on the dual-careers interface, Moen distinguishes between competing, synchronic, and independent processes (ibid.). Other scholars describe similar relative constellations within dual-career couples (Rusconi/Solga 2007). It is often assumed that if partners agree on whether one partner's career is more important, at least temporarily, this can make it easier to coordinate the two careers. However, when couples face changing

demands, especially when job opportunities require relocation or there are other changes in family arrangements (Rusconi et al. 2013), dual-career cycling dilemmas arise in navigating the demands of two careers (Rapoport/Rapoport 1969).

Different theoretical models are used to explain how couples arrive at dual-career coordination. While relative differences in economic resources and bargaining power explain couple decisions in general (e.g., Steiber/Haas 2012), this is less evident among those with highly-educated partners with similar resources and bargaining power (Abele/Volmer 2011). Disparities in position and career prospects may still make a difference within the couple, such as career advancement at the beginning of the partnership, and different opportunities according to the partner's profession or discipline (Rusconi/Solga 2007). An offer for one partner may shift priorities so that the other's career must take a back seat, at least temporarily, especially if this involves relocation. In many couples the man is one career step ahead, which results in gender-specific patterns where men are hired first and women follow (Schiebinger et al. 2008). However, having a partner who is also a scientist might also come with advantages (Astin/Milem 1997; Uhly et al. 2017), such as providing mutual understanding of requirements, support, and networks (Rusconi/Solga 2007).

Navigating dual careers becomes even more complicated when the available time for a career becomes limited by care responsibilities for children. Becoming parents is often referred to as a 'traditionalizing push' in couples (Grunow et al. 2012) and a pivotal point for early-career scientists (Vohlídalová 2017). At this point small disparities in career opportunities as well as traditional gender norms of behavior become crystalized (Livingston/Ryu 2020) and affect decisions even in situations when resources are equally distributed in couples or to the woman's advantage (e.g., Rusconi/Solga 2007; Steiber/Haas 2012). Couples' negotiations may be influenced by the adoption of traditional gender roles, reflecting the prevailing model in the social context, or matching statutory rights (e.g., existence of paid parental leave) (Krüger/Levy 2001). Women in dual-career couples are more likely than men to give priority to the career of their partner (Abele/Volmer 2011), at least temporarily, to accommodate partnership and family (Becker/Moen 1999). As a consequence, women scientists might find it more difficult to navigate dual careers than men scientists.

External conditions play a decisive role, especially when it comes to the choice of a joint place of work. Whilst mobility in the form of commuting may provide an opportunity to pursue careers individually (Kilpatrick 1982), many prefer two jobs nearby or at the same institution (Wolf-Wendel et al. 2003). This is especially challenging for scientist couples, because finding even one permanent position is already difficult (Rivera 2017). When couples have children, the question of mobility and choice of workplace can be posed anew. Couples may move closer to other family members or to institutions where support of dual-career couples is

available. Dual-career programs in academia aim to provide joint job arrangements (Tzanakou 2017), which, if found, benefit both partners (Moen/Sweet 2002).

Employers' recruitment procedures are critical in the formation of gender differences. The decisions of selection committees are often framed according to gendered perceptions of the ideal scientist (Herschberg et al. 2018). Mothers (or perceived potential mothers) are believed to be less dedicated to their careers (Herschberg et al. 2018; Nikunen 2012; van Veelen/Derks 2022), and moreover, there are assumptions regarding mobility, portability, and 'trailing' spouses (Ferber/Loeb 1997; Rivera 2017). Recruiters may believe that women scientists will be less mobile than men, resulting in their job applications being taken less seriously (Rusconi/Solga 2007). However, if women are mobile, they are often penalized for leaving their families behind, again resulting in lower chances of being hired. While the portability of men's partners and children is rarely discussed, the portability of women's partners and children is a doubt raiser (Rivera 2017). The extent to which gender differences emerge varies by discipline (e.g., life sciences, see Lockhart 2021), the number of positions available, and also by requirements on research outputs and international mobility (Jungbauer-Gans/Gross 2013; Zippel 2017).

In conclusion, the course of dual careers is shaped by a multi-layered environment–the individual, the partnership, and the institutional level (Abele/Volmer 2011). There is a lack of knowledge on how scientists navigate these complexities. With so many scientists with partners also in science, and because of the very particular requirements of scientific careers, they form a specific subgroup of dual-career couples. Although others have addressed the dilemmas that men and women face in dual careers per se (Rapoport/Rapoport 1969; Rusconi et al. 2013) and dual-careers in academia in particular (Ferber/Loeb 1997; Schiebinger et al. 2008), we contribute specific insights from scientists in Europe providing empirical evidence for a select sample of scientists who are (working to be) the future leaders in science by showing how they reflect on the process of navigating dual careers.

We proceed in two steps: We first draw a quantitative picture of prevailing dual careers among ERC grant applicants in terms of relative career importance and perceptions of how difficult it is to combine two careers. We show how they are framed by career and partnership characteristics. Here, we look at early career scientists applying for an ERC Starting Grant (StG)[1] and established scientists applying for an ERC Advanced Grant (AdG). Second, we present narratives on dual-career cycling based on qualitative interviews. We show how ERC applicants reflect on their lived experiences of difficulties in navigating dual careers posed by career norms and the partner's career. We focus on the lived experiences amongst the StG applicants as a specific reflection of the 'rush hour' of life.

1 At the time of our study, the ERC provided a track for 'starters' (within 7 years of the PhD) and 'consolidators' (8–12 years after the PhD). The two grant programs have been separated since 2013, after our data collection.

3. Data and Methods

The data we use in this paper stem from a research project commissioned by the Gender Balance Working Group of the ERC that aimed to explore careers of men and women applying for research grants. Quantitative and qualitative data were collected from the same group of ERC applicants. Whilst careers in science are relatively stable in structure, where behavior and perceptions can be captured by a quantitative survey among individual scientists, dual careers are non-stable entities. They involve complex navigational issues that are more often than not multi-faceted, layered, and emotional. This calls for a qualitative research approach. We believe that a mixed methods approach applied here adds value by bridging the gap between structure and meaning.

A data-based strategy for integrated data analysis is applied (Baur et al. 2017; Kuckartz 2017). We also applied a parallel design that involves quantitative and qualitative analyses at every stage, with multiple points of integration of the two approaches (see also Figure A1 in the appendix; see also Kuckartz 2017: 166); for example, a document analysis of CVs and written applications for funding by the ERC generated questions for the survey. From the survey results an overview emerged on the prevalence and structure of dual careers in the sample. This information in turn was used in the qualitative analysis of how dual careers are lived, coordinated and, quite literally, worked on–meaning and knowledge that could not be inferred in-depth from the survey alone. In our study, we deliver inferences, for example, with regards to opportunities scientists have taken but also about the many scientifically attractive offers that they have not accepted because of their dual-career situations.

3.1 Quantitative survey and analysis

We conducted retrospective online surveys with samples of StG and AdG applicants in three disciplinary domains of Life Sciences (LS), Physical Sciences and Engineering (PE), and Social Sciences and Humanities (SH) (see Vinkenburg et al. 2020 for more details). A personalized email invitation with a link to the online survey was circulated to those StG applicants (the 2012 application cohort) and AdG applicants (who applied between 2007 and 2012) who had given consent to the ERC for the use of their data for research (33 percent of StG applicants, n= 1,588; 39 percent of AdG applicants, n=4,088). The response rate in the survey was 20 percent in the StG sample and 18 percent in the AdG sample. The sample for the following analysis consists of all survey participants who fully completed the questionnaire (322 StG applicants, 737 AdG applicants). Comparing the samples with their respective population, we find no selectivity in terms of discipline. However, funded grantees and women are overrepresented. We therefore use probability weights relating the sample population with the ERC applicant population based on gender, discipline and grant success.

The surveys included retrospective questions on job positions, institutional affiliations, career breaks after the PhD,[2] questions on employment at time of the application to the ERC and future career expectations. Information on children, partnership status, employment of partner, and combination of careers was also collected. Both surveys were supplemented with information from the ERC on host institution, domain, and application outcome.

In the survey, the ERC StG and AdG applicants where asked whether they have a partner at present. Those with partners were asked whether the partner is employed. For those with an employed partner questions on career *importance* and dual-career *difficulty* were also posed. Self-reported career *importance* was measured with the question "During your relationship, whose career has been/is more important?". The possible responses were: "mine", "mostly mine", "both equally", "my partner's", and "mostly my partner's". For the following analysis, responses on career importance are grouped as "both equally", "mine" ("mine" and "mostly mine") or "partner" ("my partner's" and "mostly my partner's"). *Difficulty* in combining careers was captured with the question "How easy has is it been over the years to combine dual careers?". The possible answers were: "very difficult", "difficult", "neither difficult nor easy", "easy", and "very easy".[3] Here, the analysis groups categories as "difficult" ("very difficult" and "difficult"), and "easy" ("very easy" and "easy") respectively.

We take a more in-depth look at the career and life stage of the StG applicants. We explore career stage by whether or not the StG applicants have completed their PhDs in the previous seven years. We allow for career logics to vary across domains (LS, SH, PE). We use two indicators for international mobility, whether the host institution for the ERC application is outside the applicant's home country and whether the applicant has spent any part of their career in the United States.[4]

3.2 Qualitative data collection and analysis

3.2.1 Data collection

Semi-structured interviews were conducted with 26 ERC applicants (5 AdG, 21 StG) from the Life Sciences.[5] This ERC domain historically shows the largest discrepancy between the share of women applicants and women grantees (European Research Council 2012). From the ERC database, more than 420 applicant CVs were manually extracted. Of those, 140 applicants had requested an exemption. Based on an analysis of these CVs, we purposively selected applicants from seven

2 The survey design for StG and AdG applicants was slightly different, to reflect the relative career stage.

3 For both questions, respondents could choose the option "not applicable". Given this answer, we excluded five respondents from the analysis.

4 Syntax files of the descriptive analysis are available under https://doi.org/10.7802/2543.

5 By CH, SC, CJV.

countries (UK, NL, DE, FR, ES, SE, AT), to ensure dispersion across the European continent, grantees and non-grantees. As a selection method we used a number of items such as (international) mobility, care responsibilities, dual-career issues, institutional support, career conventions and career steps. Nineteen women and 7 men agreed to participate in an interview between July and October 2013. All interview respondents had partners, and were facing dual-career issues at the time of the interview.

The interviews provided rich data for understanding the lived experiences behind the careers of the ERC applicants. We used an interview topic guide (Bryman 2003) around three themes: 1) retrospective career experiences, 2) science, ERC, and career conventions, and 3) work-life and dual-career issues. The interviews were conducted in English. They were recorded with respondents' permission and transcribed verbatim. These transcripts were analyzed and a coding tree was developed in 2013/4 in Atlas.TI with multiple codes and sub-codes, including (among others) dual career*, mobile*, and parent*.[6]

3.2.2 Analysis

We started this analysis by reviewing the relevant quotes collected in Atlas.TI, starting with the "dual career*" code. We proceeded by rereading the complete interview transcripts. While reading, we highlighted excerpts related to career decisions, mobility events, and dual-career experiences. At the same time, we made notes of our first thoughts. We then used results from the quantitative analysis on difficulty and importance to categorize the interviews. We selected interviews from participants where we concluded from their words (sometimes implicit, often explicit) how difficult they had found combining two careers and whether their own career had been most important or both careers had been equally important. We did not look for evidence where the partner's career had been most important, because this category is very small among the survey respondents, and almost non-existent among the interview participants.

We directed our analysis to the respondents who had applied for a StG rather than an AdG because at the time of the interview they were in situations where dual-career decisions and difficulties were more prominent. Our aim was to present the variety in the stories among women and men scientists across Europe rather than 'typical' examples. We use a subsample of eight interviews with six women and two men basing the selection on the dual-career experiences that the respondents reflected upon. In the process of selecting and bracketing relevant quotes, we returned to the original transcripts in an iterative process of analysis, sense-making, and reflection.

In giving voice to the participants, we give them a fictitious first name. We describe their dual-career situation and the presence of children. Because of confidentiality,

6 by CJV, CH.

we omit names of institutions, research groups or laboratories, and physical locations (country, city), even if this information is sometimes crucial to the story in terms of statutory rights, economic situation, and (absent) institutional support.

4. Results

4.1 The dual careers of ERC applicants

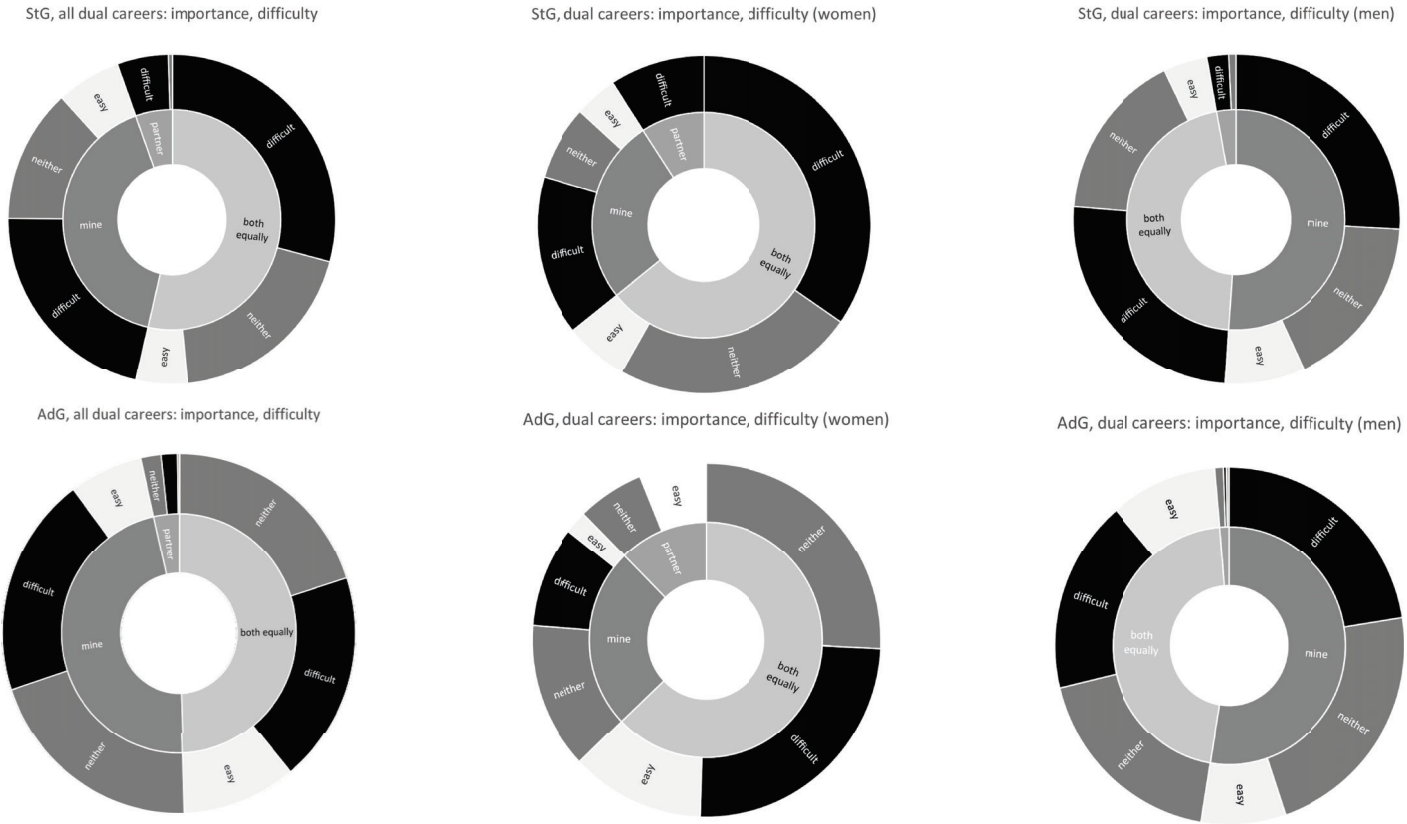
Amongst the ERC applicants, 88 percent of the StG and 90 percent of the AdG applicants have partners at the time of the interview, 76 percent (StG) and 68 percent (AdG) respectively have employed partners. Of those with employed partners, 85 percent (StG) and 76 percent (AdG) have partners working 30 hours or more per week, 50 percent (StG) and 52 percent (AdG) have partners who are also in science, with 25 percent (StG) and 28 percent (AdG) working in the same institution. The figures illustrate that dual careers predominate among both StG and AdG applicants, and dual careers in science are also common.

Of those with an employed partner, 51 percent of the men scientists reported that their career has been *more important*, and a slightly smaller share (46 percent) reports that both careers have been *equally important*. In contrast, most women scientists report that both careers have been *equally important* (64 percent) and 27 percent reported that their career has been *more important*. In both groups, there are very few scientists who report that the partner's career was more important (3 percent of the men StG applicants, 9 percent of the women StG applicants). As with the StG applicants, the majority of men AdG applicants (60 percent) report that their career has been most important, and most women scientists report that both careers have been equally important (56 percent). Again, relatively few AdG applicants report that the partner's career has been more important (1 percent of the men, 12 percent of the women).

The majority of the StG applicants report that it has been difficult or very difficult to combine dual careers (52 percent of men, 60 percent of women). Slightly smaller shares state that the combination of both careers has been neither difficult nor easy (35 percent of the men, 30 percent of the women) and a small proportion that it has been easy to combine dual careers (13 percent of the men and 10 percent of the women). Compared to the StG applicants, a lower share of the AdG applicants report that the experience of combining dual careers has been difficult (39 percent of men, 42 percent of women). A slightly larger share reports that it has been neither difficult nor easy (42 percent of men, 44 percent of women) or easy (19 percent of men, 14 percent of women). In contrast to the statements about the importance of careers, gender differences in the evaluation of difficulties are not obvious.

Figure 1 illustrates the intersection of self-reported career importance and difficulty in combining careers. Answers to the question on career importance are presented

Figure 1: Dual career arrangements, circle diagram, StG and AdG applicants with working partners, by gender



237 StG applicants, 139 men, 98 women; 497 AdG applicants, 395 men, 102 women;
Answers to questions: "During your relationship, whose career has been more important?" "How easy has it been to combine dual careers?"

in the inner ring of each circle and those on difficulty in combining careers are shown in the outer ring. The figures clearly show that high shares of scientists experience difficulties in coordinating two careers both when the ERC applicant's own career is more important and when both careers are equally important.

Having established the difficulties encountered in combining careers, we now investigate the dual careers of StG applicants (Table 1) more closely. Most StG applicants have *children* (72 percent). In terms of *career progression*, StG applicants are split evenly between those at more advanced (more than 7 years since their PhD) and those in relatively early career stages. In terms of *discipline* the largest shares of applications come from the Life Sciences, including medicine, and Physics and Engineering. Finally, regarding *international mobility,* a quarter of the StG applicants applied to the ERC with an institution outside of their home country, and 28 percent have spent time in the United States.

Next, we use the intersection of career importance and difficulty in combining careers to take a closer look at the sample and explore any potential relevance to navigating dual careers for women and men scientists.[7]

The men StG applicants who assign greater importance to their own careers (table 1, columns 1 and 2) are slightly more established in their careers in terms of time since PhD. Amongst those who say that their career is more important and who did not find the combination of dual careers difficult, there is a lower share of fathers–61 percent report having children as opposed to 83 percent of those reporting difficulties in combining two careers. We also observe less mobility in the group of men who report that both careers were equally important–about a quarter reports employment spells in the United States as opposed to a third among those who report that their career is more important. Turning to women StG applicants, more of those who report that combining careers has been difficult, especially when careers were equally important, are mothers–81 percent compared with 67 percent amongst those who reported that careers were equally important and that combining them had not been difficult. Women StG applicants who have applied to the ERC from an institution outside their home country are more likely to report that their career was more important and that combining two careers was difficult. Finally, both men and women StG applicants are more likely than AdG applicants to report that combining careers was difficult. Despite the heterogeneity of the sample, it can be seen that the partner's profession, the presence of children, career stage, and international mobility are to some extent related to the difference in experience of navigating dual careers, and this is largely similar for women and men scientists. In the next section, we supplement this descriptive account with insights drawn from the interviews on the lived experience of navigating dual careers.

7 The group of StG applicants who say that their partner's career has been more important is not included in the in-depth description due to the small number of cases.

Table 1: Characteristics of the men and women dual-career StG applicants, by career importance and difficulty (weighted %)

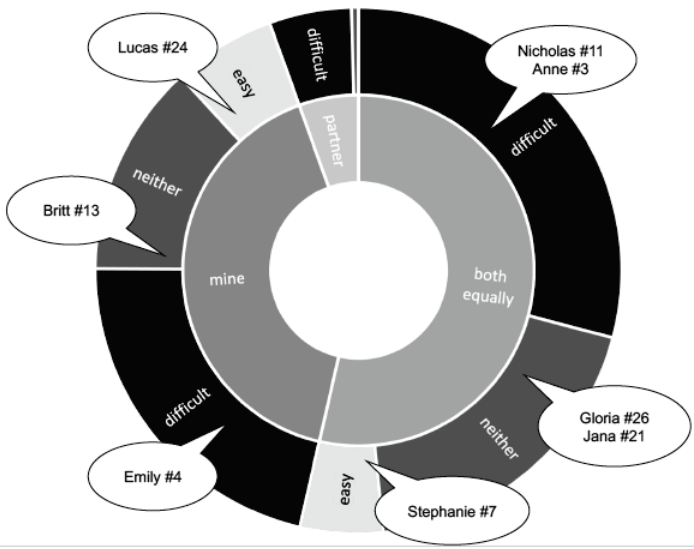
	Total sample	My career, not difficult	My career, difficult	Equal, not difficult	Equal, difficult
Partner academic	*45*	*40*	*38*	*40*	*58*
men	44	40	37	41	57
women	48	43	40	40	62
Children	*73*	*62*	*81*	*71*	*79*
men	73	61	83	72	77
women	73	69	73	67	81
More than 7 years since PhD	*52*	*56*	*58*	*42*	*54*
men	51	60	56	35	51
women	56	(36)	64	54	61
Domain					
LS	*39*	*28*	*40*	*44*	*43*
men	38	24	40	45	43
women	43	51	39	42	44
PE	*41*	*51*	*39*	*39*	*37*
men	46	55	47	49	34
women	29	(27)	(12)	23	43
SH	*20*	*21*	*21*	*17*	*20*
men	16	21	13	(6)	24
women	28	(22)	49	35	(13)
ERC host not in home country	*24*	*37*	*29*	*16*	*17*
men	22	36	23	16	15
women	28	40	50	16	23
Any spell in US	*28*	*32*	*36*	*26*	*22*
men	31	33	43	27	22
women	21	(25)	(9)	24	23
n	*224*	*46*	*51*	*58*	*69*
men	135	35	36	29	35
women	89	11	15	29	34

Cell frequencies n<5 in parentheses

4.2 Reflections on lived experiences of ERC StG applicants

In the interviews we have identified compelling stories on navigating dual careers in science. Informed by the quantitative results, we present the stories according to the prevailing impression of how difficult it was for the ERC applicants to combine two careers–although nuances and shifts may become apparent. We provide substantive excerpts that show these stories, combined with our own short reflections.

Figure 2: Dual-career arrangements of the selected interviewees



4.2.1 Difficulties in combining two careers

Nicholas speaks about the difficulties he and his partner experienced in navigating dual careers during the early stages of his career in science when he got a postdoc fellowship. At that time, they had two young children.

> Well I-I went before the family to the [United] States for um-for a few months and as I said I haven't been to the place. I was prepared to take my suitcase and go back. Um-but it turned out to be nice and-and I found a good house to rent and they came over, but in this um-period my-my wife got a job and she just couldn't resist. So here in [home country], and then um-so she moved back after a few months only and um-with the children. And um-well, being a [medical doctor] she couldn't easily be working in the States without doing numerous tests and um-. Yeah, it was really not worth the effort. And we had, the children were small. And um-well she was anyway not so um-happy just being there quite alone at home and so. So she moved back with her stuff. And um-. So um-during the [short silence] I still felt that it was so rewarding that-the the postdoc work was so I wanted to pursue and um-to enjoy this five-year postdoc fellowship I had to be abroad at least two years and um-. So that was somehow a minimum limit and um-Um-so I simply had to go back and forth. Well, not too frequent, but say every two to three months I went over for a week or two. And um-so after two years in the States I moved back. I probably would have stayed longer if-if the family situation was um-was different. But um-somehow we um-we managed to-to survive haha. And I realised also that um-my wife might have had a tougher time being alone with small children.

> I could bury my sorrow with work and you it is um-and then um-well [short silence] since then [short silence] well I-I have tried to-to um-um-quit work early enough to-to spent time with the kids and-and still do now they are teenagers. (#11, careers equally important)

The experience of Nicholas shows how combining a career in science with a career outside academic science can create an "obstacle", as he referred to in their situation. Moving to the United States, a requirement of the fellowship he received, resulted in a dual career cycling dilemma for him and his partner. While Nicholas expresses some ambivalence before taking up the postdoc, having arrived in the United States, his experiences of his postdoctoral position there are very positive. His partner, in contrast, was unhappy because she could not pursue her own career in medicine in the United States without certification. After a few months in the United States, she moved back to their country of origin with their children because of a job opportunity that "she couldn't resist". Their solution was to live apart together, and for Nicholas to visit regularly while staying in the United States for the minimum possible period. However, he argues that he would have acted differently if the family could have stayed with him. Nicholas' career has been influenced by his partner's career decisions, reflecting a competing process (Moen 2003).

Nicholas explains how, due to these shifts in prioritization, the combination of a dual career with care responsibilities had been hard for him and his partner. He missed out on some of his children's early years, but he plays down his own situation with the recognition that it was harder for his partner. Nicholas also indicates the strain on their relationship when he looks back at that time: "Somehow we managed to survive".

We next listen to *Anne*, who tells us she has never lived in the same country as her partner, who is the father of their two children. She explains how structurally living apart together works for her and her partner, in navigating dual careers in science. However, a recent job offer has forced her to reconsider their situation.

> And-um… and-um... yeah, it's a bit-we have a bit of a special arrangement, because actually since I went to the U.S. I'm with my, well we're not married, but with the same-the father of my children..., but we never lived in the same country, so-um, he now still lives in [country x].and-um... and let's say the job offer in [country z] would have a position for us both..... and-um, so [partner] um-um, comes in for weekends since we have children, and then he works four days, and so he's three days here [in country y] and four days in [country x]... and-um, that works great. So-um... and-um... yeah, so it's um-I waited with having my children 'til I-'til I got a permanent position... And that-that's nice so it's-it's all going quite well, um-.. also with the children, they're doing great, and-um... so-um... and the only-um drawback is that-but that's basically because my husband lives abroad, is that it's quite difficult for me to go to conferences... so I don't do that often enough, because it basically means that-um he has to take a week of holiday, to be here... and-um, that's not always possible. So I-I-I... I don't go as often as my colleagues...
>
> […] *And at the time you had your first child, was your partner abroad as well?*
>
> So he was in [country x] also at the time. He actually missed the birth because it was qui- so early-um-it-it was two days after my maternity leave started, so it was four weeks early. And

> then-um... she was born within three hours or something... […] and then with the second it was also... because then, she was a th-threatened to start very early so I was in the hospital for a week to stop everything, delaying everything... and then he stayed with me, but then it... still took another three weeks so... [laughs]. And then they-he actually got into a bit of a conflict, with his boss over there... who thought that was not okay, to just stay here for so long. […]
>
> But the thing is, yeah I know, we are together for a long time already and it, it goes very-very well, but […] if we are there in [country–z – where the job offer is], and it wouldn't work out, and we would get separated...and our children wouldn't see their father often anymore, and I would be there on my own, for what? So I didn't wanna do that. I felt this is it, this is great as it's going now. (#3, careers equally important)

In talking about their "special arrangement", Anne explains how it is "great as it is going now". Through living apart together, a synchronic process has been achieved. However, there is evidence of a (possible) dual-career cycling dilemma. She recently received an attractive job offer in another country, where there would be a very good position for both partners. In talking about turning down the job offer, Anne mentions trying to avoid disrupting the current arrangement that works well for everybody, including the children. For Anne, the main drawback of their arrangement is not being able to fulfill the academic requirement of attending conferences as easily and often as her colleagues. Looking back, the most difficult time was when their children were born. The wait for a permanent contract, the absence of paternity leave, and the career expectations raised by the partner's supervisor and colleagues are part of this couple's dual-career navigating efforts.

The complexities around navigating two careers and possible consequences of a future mobility event are also evident in the story told by *Emily*. She will be moving with two children to the other side of the country for her new position, while her partner (who is training to become a medical doctor) stays behind:

> Everybody's situation is very different. I think that's the first thing that has to be understood... and when- we only got married in 20** and my husband was living in [country a], he's from [country c] originally, and when he first um moved here [to country b] he didn't have a job, he had to work for free […] as his qualifications are not recognized by the system so he had to do his training all over again. Um, and to get a foot even in the system he had to work for free for a year, which included, um- we were pregnant fairly quickly after we got married, so...um, that included after the first child was born, which contributed very much... a lot actually, to me choosing not to take much maternity leave. I'm not sure I would've done it differently anyway but I can't go back and do the experiment, and this organization only provides, at the time, it was only 12 weeks at full paid maternity leave, um, and if you took any longer than that, then um, you only got, can't remember, six weeks of full pay and then- it-it was ridiculous we never would've been able to survive, because we were only surviving on a single wage anyway. Um, so I took the twelve weeks plus four weeks holiday that I had accrued... and that's how I ended up having sixteen weeks off. Um, and because that actually worked... and wasn't so dreadful...that's what I did again with the second one. Cause it really was ok actually, to an extent that... to me, working was still the norm.

In the story about the time they started their family, Emily talks about how her partner had to restart his training after moving to her country of origin when first married because his medical qualifications were not recognized. During this time, they lived on a single income and she took relatively short maternity leave

by local standards. It helped her that she felt like "working was still the norm"– which is why she decided to do the same with the second child. Mobility, absence of accreditation of international qualifications, and limited paid maternity leave resulted in a dual-career cycling dilemma manifesting as a competing rather than a synchronic process.

In their current situation, Emily finds that the complexities lie in trying to meet their career requirements with their ideals of sharing childcare:

> Right, so the biggest problems for us […], is I want, and he wants the childcare to be 50/50. We want it to be 50/50. What that actually translates to is that the weekends we're taking shifts rather than doing parenting together... and on a personal level that makes me extremely sad, 'cause we both need our down time, we need a little bit of rest, so we end up just not seeing each other, and I'll take the kids away at this point, you take them away at that point. But it's mu- it's much worse than that. He's on call two weekends a month, so that means every other week... I am simply childcare at the weekends, which is fine, I like being with the kids, but it's a bit exhausting, because I've also worked all week. […] Cause I actually felt that maybe- 'cause his job is more vocational than mine, nobody else can run the [her last name] lab except me... I did wonder if he, you know, might want to do four days a week for example... but he really didn't... he said that he didn't feel it would be conducive to his career progression at all, actually.

Again, there is evidence here of ongoing dual-career cycling dilemmas and a competing process. While Emily describes her partner's job as "more vocational" than hers, she also recognizes that "nobody else can run" her lab. However, her husband is regularly on call and does not want to work part time, as it might adversely affect his career. Trying to achieve a 50/50 split in responsibility for childcare whilst each meeting their career requirements leaves Emily sad and exhausted. Taking shifts in parenting and not seeing each other adds to the burden. She next talks about how she is moving across the country with the children, while her partner stays to complete his training:

> Yes, I'm moving, yes. Um, yeah I'm not looking forward to this bit. That's gonna be difficult. I'm really looking forward to the move, I'm really looking forward to working in [town]. I think it's going to be- I think I'm going to be much happier there actually. But-um, I'm not looking forward to the 10 months of being a single parent. I'm really not looking forward to that. […] He will move eventually, yeah. He can't- he tried to get a transfer, but it wouldn't been- it was never really gonna happen, he's only got a year left, so it will be next August…he's only got a year left on his training, over a six year training course. […] So, we did um… and ah… about leaving the kids here, although I felt physically sick actually at the thought of not being with the children... I know he's not unhappy about it but it's not as visceral with him, and I don't know if that's how it should be, or you know [laughs]. Um, but maybe 'cause they're still quite young, maybe if they were a bit older I wouldn't feel... quite the same..., but it made me feel like "Agh, no I really don't want that", so I also then rationalised it and thought "if I move and take them with me, it's disruptive, but they'll have their mum with them and then dad will join us..." Whereas if I move...and leave them here, then they're without their mum for a year, and then they still have to move and be disrupted anyway... 'cause we are moving and this is happening. So, you know? I think that's-um... [...], yeah, I wanted to go, to... I guess it's sort of my fault really [laughs]. I wanted to go and now is a good time. But it's-it's not anlike you-you have to, right? Because it...Yeah no it's been an awkward- it's been a difficult year. (#4, own career primary)

Emily mentions that whilst she is very much looking forward to working at this new place she is concerned about the year ahead. The decision to move with the children and to live apart was not easy but it will only disrupt the children's lives once instead of twice. She prefers for the children to be with their mother, even though this means she will have to be a single parent for the time being. The expected benefits of the move and shift in priorities and responsibilities outweigh the negatives.

The stories from Nicholas, Anne and Emily show how the mobility and dedication required in science, combined with the non-portability of a partner's career, can create difficulties and disruptions in the linked lives of dual-career couples. All three stories relate to sacrifice in trying to reconcile often competing career and family demands. An opportunity for one partner (whether it is taken or not) generates dual career cycling dilemmas and may necessitate shifting priorities. A synchronic process is difficult to achieve but taking parental leave or working part time (if possible and paid) can help navigation. These stories also reflect gendered expectations of who is the primary caretaker of children, internalized as well as voiced by supervisors. In these stories, the scientists have all spent (or will spend) some time living separately from their partner, during which time the children (will) stay primarily with their mothers. Therefore, also while living apart, mothers provide more childcare than fathers. Regardless of perceived career importance, structural factors such as the accreditation of professional qualifications and the length of parental leave add to the lived and voiced experiences of difficulty in navigating dual careers.

4.2.2 Difficulties and ease in combining two careers

Gloria lives with her partner, who is also a scientist, and two children, in their country of origin. When they were postdocs, they moved together to the United States. She reflects with great joy on their experiences abroad:

> My husband was waiting until I defended my PhD, because he was postdoc. So, he was a higher level than me at this moment, in [home country]. So, after that I proposed him, "Okay, uh, come on to the postdoc outside, abroad," and I wanted to go to a very, very good university. And I started to write to different universities, and he was making the same as me. In order to try to go to very close universities. We had to combine our family, and our personal situation with work. So, we know a lot of couples that, uh, was happening the same, and they are making the same things, so trying to combine, and in California we found, finally, this […].I decided after the interview that it was fine, and that they were interested in me, and in the same time, my husband was, uh, looking for another laboratory in this place, no? […] We wanted to go to California. [Laughter] And the – the West Coast than the East Coast. [Laughter] And because there is a level – a very high level on science, and there are a lot of universities in which you can go.
>
> […] So, we just married one week before – before going to [town z]. […] I went with a D1, and he coming with me; he was coming with me with a H1, like a dependent on me. Uh, he got – he got a contract with [A] before, but uh, he was to wait for the documents. He needs to take the documents from [A], come back to [home country], change the visa, and then come back again to – to [town z] […] So, uh – initially it was a little difficult just for this detail, but – but after that we were working in both universities- and it was really great. So, we like it, and – yeah. […] He was a doing

> a postdoc in [A], so we were living in the – initially we were living in [small town y]. It was a little, uh, silent for us [compared to] – living in [city in home country]. [Laughter] So, after six months we decided to move to the center of [town z], and uh, in the mornings, my husband – I usually drove my husband to the [train], and he took the [train] […] to [A] every day – every morning. It's morning, and then I was driving to [C] in one hour each morning, and this was our life – From 9:00 a.m. to 9:00 or later – later – uh, the laboratory working — making science, – and after that, uh, we decided to come back. […] Yeah. It was – it really was a – we had to make this decision, and um, for me it was very, very difficult, because I didn't want to come back. No. I didn't want to come back. I wanted to stay there […], but my husband wanted to come back. He was happy because, um, he was very, very happy with the laboratory, and with the research. He got, uh, publications, and it was fine. But sometimes you miss the family; you miss your – Yeah, much or more, you usually miss your country, and I am really much more happy than him, and – [laughter] – he was happy, but, uh, he had clear – a clear idea that he wanted to come back.

Despite the initial difficulties with her partner's visa, seeing other couples doing the same was a source of inspiration for Gloria, and we hear a sense of achievement that it worked out. Moving to the United States shifted priorities but also resulted in a synchronic process about which Gloria reflects positively. Moving back to their country of origin was not what Gloria wanted, but her partner was homesick. Following the move (and presumably after the children were born), Gloria felt it was necessary and possible to invest more time in her family:

> And this is because I started to invest much more time in my family, and less time on science, […] and when you have children you have to invest to them – in them these hours, no? So, usually you have less time to write, less time to read. You have like emergency – emergency situations, like suddenly you're in the middle of experiments, and you have to go to attend the child at school, or things like that, no? And in my case I used to combine with my husband, so 50/50. So, it's, uh, 50 percent my husband, and 50 percent for me. My husband being a scientist, too. So, we used to try. […] I mean the kind of experiments that we are making that usually are different, so we try to combine the experiments of the mother and the father with the family hours, and the schedule of the times, no? And I believe – I have a lot of – I'm very lucky with that. Because I mean women, that have a husband working in an enterprise, that they have less flexibility in the schedules. (#26, careers equally important)

Gloria and her partner appear to have resolved the dual-career cycling dilemma that followed from their return to their home country. Feeling the need to invest more time in her family, and with both partners trying to balance their lab experiments, Gloria perceives herself as "very lucky" because as a couple they manage a 50/50 task distribution and can deal with emergencies. She sees this as a consequence of both being life scientists, which provides more flexibility than other lines of work. Both the move to the United States and the return home generated some difficulties but the lived experience shows enjoyment, relative ease, and mutual support.

Jana and her partner are also both scientists who have two children. They do not live and work in their country of origin. At the time of the interview, they both work in the same research group. Jana tells about the path that led to their current position.

> Um-so my boss at [city Jana is currently working] she wanted to um-to have such a lab like the method which I knew and um she called me haha in [city in the same country Jana was previously

working]. This is how I moved. So actually my husband is also in science so we looked together for positions. We have a dual group now so haha to make careers parallel. And we had like um-shortlist choices between [city in the U.S.] and [current city]. And then somehow we decided for kids and [current city]. Haha and that is how we moved there. [...]

Okay. And was it um-the lab that made you decide for [previous city]?

Yeah, it was first it was the lab and second um-because they had two positions also for my husband and um-that um-we um-like in the end we also had the choice between [other city in the same country] and [previous city]. And we also thought of practical reasons haha.

[…] *when you had to make that decision a long time ago between the U.S. and-and [current country], what was the reason for you to…*

Pure social reasons. It was kids and citizenship […]

Haha. Yeah. So um-and did your husband also apply for the [other European country]?

Yes. First applied for the [other European country] and I think [a second European country] also. He had an interview in [this second European country] and then he also started applying for [current country] and um-finally we found the optimal um-position. And end in [current country]. [...]

You already said you and your husband have both a career, … you have dual careers. How do you experience that-that combination?

Um-we never tried different way, so it is difficult to compare. um-I think it is not easy. I-I um-I wish we would have sort of I don't know mentoring or training or whatever, there are only few such couples. For now another four couples altogether and we know several hundred scientists. For couples that have this sort of career. um-but yeah of course we have some struggle for power haha so like this but um-yeah it works in some at some stages it is really optimal because I can ask him to do something and I do something else. Or if I am concentrating on grants then he can supervise students or vice versa. So we um-can combine and also in terms of collaborations it is easier to me for me to work with some particular people and for him with other people, but it works so haha it is also sort of easy in a sense. (#21, careers equally important)

Jana explains how she and her husband navigated their dual career simultaneously in terms of timing and location. They had applied in various countries and had been invited for job interviews. Because they were both pursuing scientific careers, finding two positions in the same area or institution was the decisive element in choosing from multiple options. Their children and obtaining citizenship informed their decision to stay in the country where they currently live.

According to Jana, they have found the "optimal position" for both. At the same time, Jana says that combining her career and that of her partner is "not easy"; there are also "struggles for power". Moreover, she speaks about the lack of role models, due to the very few couples she knows that "have this sort of career". This motivates her desire for external support like "mentoring or training" to learn how to cope with the difficulties of combining two scientific careers. Still, working in the same research group has multiple benefits and she refers to their situation as "sort of easy in a sense". When reflecting on their situation, Jana addresses both the ease and the difficulties of navigating dual careers. In searching for and deciding on these positions as well as in establishing a dual lab group, they escaped the dual-career cycling dilemma inherent with one partner relocating. However, their

lived experiences reflect some difficulties and power struggles on a day-to-day basis. Zooming in on the apparent synchronic process reveals evidence of competition. From Jana's story we learn that a "lab" is important in determining the place of work, but the (future) benefits for children and citizenship also influence the decisions of a dual-career couple in science. Next to job opportunities, social and practical factors are considered in navigating dual careers in science.

Britt's story also shows how career decisions are intertwined with factors that are not related to science. Her story starts when they were living in her partner's country of origin with a very young child, and she reflects on the next step in her career:

> Um, I had been offered, um... two postdocs. One in [European city], and one in [the U.S.]. But [city] was not do-able for my husband because it's too expensive to live there on one income... So... he couldn't-we couldn't afford living there on one postdoc salary, and he wouldn't be able to find a job there [because of the language]. And the same with [U.S.], he wouldn't be able to get a green card. [...] So when I got a fellowship, I moved.

When asked whether she moved by herself, Britt explains that they relocated together, as a family, back to her home country and the institution where she had also obtained her PhD.

> So my husband's a plumber, so- and he's been incredibly supportive so he's come with me wherever I wanted to move. And-um... when- like I said, when I turned down my postdoc grants, that's because we couldn't afford it, not because he said "no". So we decided it was too expensive. And-um being a plumber he can work anywhere they speak English. I mean, it takes him four days to get a job and it takes me four years.

Financial aspects and existing (in)formal support played a considerable role in their decision-making. When their child was born in her partner's country of origin, she had extensive maternity leave but there was no statutory paternity leave.

> My husband was not allowed to take paternity leave, because that doesn't exist there. So, he had to negotiate a lot with his company to be able to work, he also worked four days a week, so he could counterbalance, like shuffle around, [the caring] between us.

Since their move to her country of origin, her husband has been taking on most of the care responsibilities for their child.

> My husband's taken most of it- which is great. Um, because he doesn't want a career, he works to get money and nothing else. So he's almost taken all the sick days, he's taken like- he's used a lot of paternity leave to extend holidays, and so he's taken the... yeah, more than me. So he's been... it's been very-very good. That he- because he wanted to be more involved. Um, and it took him a while, because I'd been the main carer before then… [It was made possible] because of the support by the... by the government, because we had the financial support to do it, and because it was- because-um... I guess because of legislation... because you can't... legally dads are as much parents as moms here. [...] When female undergraduates ask me for career advice I said "choose your husband wisely!" It's like- it's-it's the biggest- if you look at people who are successful in science, you have to have a supportive husband. Like if he's not, if he's not supportive, you just not- it's gonna be impossible. (#13, own career primary)

Britt's story shows how her career has been primary. She explains that her partner has become the primary caregiver since relocating because he does not "want a

career". Even though it took a while to get used to this shift, Britt elaborates on how his involvement has been "great" for her career. She says having a supportive partner is necessary to be "successful in science", and even "impossible" without one. However, there is a dual-career cycling dilemma evident in their decision on where to move, because of language barriers and work permits. Even if she says his profession is not a "career", deciding between her postdoc offers was largely based on the likelihood of a job for him. Additionally, navigation is made easy (or difficult) because of the availability (or lack of) financial support from the government for parents, paid leave, and informal support. Living on one income would not have been possible, so it was necessary for them to find a location where they both have an income and/or generous financial support for care. The local norms tied to statutory rights around care help, when "dads are as much parents as moms".

From the stories of Gloria, Jana and Britt we learn that combining dual careers can be both easy at times and difficult at other times. Mobility, and especially international mobility, complicated the navigation of dual careers for Gloria, Jana and Britt, resulting in dual-career cycling dilemmas, shifting priorities, and intense decision-making between partners. A synchronic process is sometimes achieved or alluded to, but competition may still occur. These stories show us how working on precarious, temporary contracts creates difficulties, forcing scientists to find new positions. However, they also give us an insight into times when navigating dual careers is easy and joyful, and how statutory rights (e.g., paid leave) and relative flexibility can help. Working in similar places, finding an optimal place for both, and shifting who is the primary caretaker can ease the navigation of dual careers.

4.2.3 Ease in combining two careers

Lucas is supported by his partner in pursuing his career ambitions. At the time of the interview, Lucas and his partner live with their three children in their country of origin. His partner also has a PhD and did a postdoc. Their careers started off quite similarly. The timing of their positions abroad and their return to their home country is interwoven with the birth of the children.

> And she didn't start to work in-um-in [foreign country], because we had the baby and then-um... we-we-we said, "ok, for a year there is a break". And-um, and she found a postdoc in the second year while we were there. So we said, "ok, I will postpone my return on this position I was just awarded, um for a year. So that's why we s-stayed three years. Basically after two years and a few months I could've come back in [home country] with this [institutional] position but we delayed that a bit. That's why we came back only in January the-um-the-um... the year after". "She did a PhD, um... and then postdoc, and then after she found a position-um in-um -as-um a manager of-um scientific platform – technical platform when we came back to [country]. Then she stopped again to...work um for three years because we had another kid in um... while we were [abroad], and when we came back to [home country] we had the third one. So she stopped for three years, and now actually she starts again. But, well I must say that what was also very easy is that my wife was not-um driven by her career, you know. Um, her career was not her main lead- is not her main lead in her-in her life. So this made...really the-um- all the path very easy. Because-um if we had to... find a way

> to accommodate her scientific career and my scientific- this would have been more challenging, but-but in her case it was like, less pressure on that side. That-um... So I could be leading my-um, my-my-um career-um very ambitiously, and-um, and she was-um... supporting me a lot..... for that. So this is great. I mean you've seen we moved and then I could start the postdoc and-um my wife was looking after the-the kids and-um this was really helpful. (#24, own career primary)

Before returning to their country of origin, Lucas explains, he and his partner both worked as scientists and took each other's careers into consideration when deciding between opportunities. This resulted, for example, in a longer stay abroad than anticipated because of her postdoc position. Yet, it was Lucas' partner who stepped back when each of their children were born. Relocation and having children resulted in multiple dual-career cycling dilemmas. While this started off as a competing process, the return to their country of origin and the birth of their third child resulted in a shift in the importance of the two careers.

When reflecting on this shift, Lucas says his partner being less career-driven made the "path very easy" for him. He believes that accommodating two scientific careers "would have been more challenging". In his experience, he could pursue his career "very ambitiously" because of the support from his partner.

Stephanie experiences support from her partner which helps in pursuing her career. They live with their three children in their country of origin. Stephanie explains how her career so far has unfolded "very smoothly" and how the support of her partner, a pediatrician, and the sharing of care responsibilities have facilitated her career.

> Yeah and that is also how I see, for-for me […] is the critical position in your career after your PhD for postdoc to group leader I think that is the um-the tricky point where a lot of people yeah. If you can past that point then um-that is the most critical point. And for me that went very smoothly. […]
>
> Yeah. And then um-after that [maternity leave of the first child] I um-started working again for four days a week. And that was what I continued after. And that is um-works fine although I realised the work you are doing is not fu-fitting four days. Because it is more a fulltime job, but yeah, that is how it is. But um-um-for-for me and also for our family it works fine to-to do it like this. Because I work four days a week. My husband is a paediatrician, he also works four days a week and nah that works…
>
> *That works out.*
>
> Yeah, that works out. And um-then also for the second um-child also the same pregnancy leave and the third. And what you realised that in the second pregnancy leave you continue some activities and for the third even more. […]
>
> *Do you have another network of support outside work or?*
>
> Yeah.Um.my parents and my parents in law take care of the children every Wednesday. And especially my parents um-are very helpful when I go to conferences or meetings and to be honest without them it would not be possible to do it like this. And my husband is a paediatrician so he doesn't have many um-conferences, but he also has night shifts so we can combine that very well and he is also very um-um-support that we really share the care. So when um-he is off on Monday and he does everything the children and bring them to school and to the swimming and um-swimming lessons and um-So he does really a lot. So we-we really…

Equally divided it.

Yeah. Yeah. And he also supports me in the um-in doing-doing this. So that is good. (#7, careers equally important)

Stephanie reflects on how she and her husband combine their careers and share the care responsibilities for their three children. In their country, it is increasingly common among educated parents to move from a five-day to a four-day work week following the birth of the first child. However, Stephanie explains how, for her, a job in science "is more a fulltime job", which she seems to accept because "that is how it is". Consequently, she continued working on tasks that she could do from home during the maternity leaves for her second and third child.

Stephanie experiences ease in combining two careers. She attributes this ease to sharing care responsibilities, to both working four days, to her partner's work (with night shifts but no conferences), and to the active role of the (grand)parents. There is little evidence of dual-career cycling dilemmas.

Lucas' and Stephanie's stories show how partners and (grand)parents play a vital role. The arrangement of Lucas and his wife is more traditional or gendered, but both show how support from their partner in combining work and family has been crucial to their own career. Also, shifts in priority can result in the perception of ease in navigating dual careers.

In conclusion, these six stories provide rich insights into the question of how dual careers are navigated, and how career opportunities, decision-making, sacrifice, and compromise all play a role in the pursuit of dual careers. The stories and lived experiences of the ERC StG applicants interviewed bring dual-career cycling dilemmas to the surface (Rapoport/Rapoport 1969). What may seem independent turns out to be deeply linked, especially when relocation decisions need to be made. While career commitment is rarely contested, both productivity and mobility including conference travel are said to be restricted due to the dual-career situation. The extent to which a synchronic process is achieved is related to opportunities but also to the availability of (in)formal support from (grand)parents, supervisors, institutions, and government (Moen 2003). While there are many tales of pressure and problems, knowing or seeing other couples successfully navigating dual careers and care responsibilities serves as a source of inspiration. When partners are both scientists and especially in the same discipline, they are better able to understand and support each other. This could be an advantage when it comes to joint mobility, but is also where individual norm-bending navigational strategies are found, such as living apart together.

5. Discussion

We explored the lived experiences of difficulties and ease in navigating dual careers in science by surveying and interviewing a unique select sample of European

scientists; those who have applied for an ERC grant. Our study shows that scientists do not navigate their career in a vacuum. The majority of ERC applicants have a partner, most often an academic partner, and children, meaning that dual careers and parenthood are the norm among scientists. In the coordination of dual careers there is not, per se, a prevailing type of relative career importance. The numbers of men ERC applicants reporting that their career is more important than that of their partner and those reporting that both careers are equally important, are about the same. However, among the women ERC applicants, the majority reports that both careers are equally important. As the ERC grant applicants surveyed have already invested heavily in their career, and future career investments are needed, it is not surprising that only a few regard the career of their partner to be more important. However, giving priority to the partner's career may be the reality for scientists not in our sample who are in less demanding research positions or institutions, or who have left the research system altogether. In fact, some of the partners of those scientists interviewed for this study have left science following the birth of children. Navigating a career in science alongside the requirements of a partner's career and family life is not easy. Difficulties in combining careers are widely reported by the ERC applicants–amongst those who say that their career was more important as well those who give equal importance to both careers. This is not only the case for StG applicants who are emerging scientists in the so-called 'rush hour' of life but also for established scientists (AdG applicants). Thus, the dual-career experiences of the scientists seem to be relatively universal and are not limited to certain life stages.

The qualitative interviews with the StG applicants reflect the lived experiences of prioritization and difficulty in navigating dual careers. It becomes apparent that they want to comply with the ideal scientist norm, which is built on an individualistic model of unrestricted mobility and dedication, but experience this to be a myth. In dealing with dual-career cycling dilemmas that arise following a job offer and (potential) relocation, there is evidence of the conceptual competing and synchronic processes of the dual-career interface identified by Moen (2003). Interestingly, there is no evidence of an independent process, perhaps because all of our interviewees have care responsibilities. Striving for an equal distribution of care responsibilities is important to the ERC applicants, but it is also a constant struggle alongside a scientific career. While most people follow strategies that bend their personal lives to their professional career (Moen 2003), the dual-career cycling dilemmas and location decisions of the interviewees can also be viewed as evidence of bending careers to personal lives.

International mobility is one of the most important factors that makes continuing coordination necessary and difficult, challenged by restricted portability of the partner's career to another country. Against this background, the scientists' stories are not only about opportunities taken, but also about attractive offers that are not. As job offers can also enable new options, the search for an optimal position for both still requires effort and assessment of external factors. On top of considerations

regarding working opportunities for the partner, considerations about what is best for the children also play a role. Children and partners can be a primary reason to stay in one place–often the home country–or to choose a specific place. Interviewees mention the opportunities that occur with specific funding and parental leave legislation, nationally regulated work opportunities as well as the restrictions imposed by their partners' employers. Against these complexities, the scientists' narratives are testimony to how navigation rests on their shoulders. It should be mentioned here that all scientists in dual-career couples struggle, even when the partner 'only earns money'. Finally, difficulty and ease go hand-in-hand in the scientists' lived experiences of navigating two careers, such as that when family life seems to run smoothly, the requirements of a scientific career may nevertheless still be perceived as difficult to meet–or coordination may be temporarily difficult or easier. Even scientists who report that the combination of two careers was easy for them, gradually nuance this in the interviews.

Our study also comes up with important issues with regard to gender. The requirements at the interface of family and work are similar for women and men scientists. The share is similar between men and women ERC applicants when it comes to having partners who are also scientists, and to having children. Hence, the importance of managing dual careers for both and the constraints set by the portability of the partner's job concern women and men scientists alike. However, gender differences become apparent in the quantitative data as more men and women scientists say that their career is equally important as that of the partner. With the data we have, we cannot comment on whether the responses to the survey or the interviews follow from egalitarian norms or (less or non-)egalitarian practices. Even if egalitarian ideals appear to be common in scientist couples, such as "50/50" models mentioned in the qualitative interviews (see also Daminger 2020), the scientists' stories about caretaking are quite gendered. Gender differences and gendered norms arise when (re)location decisions need to be made for the children. In the interviews, retrospective sensemaking occurs where parenting norms take center stage, such as when couples have to commute, or decide to live apart together. Gender norms exert significant pressure on scientists who are mothers. The prevailing argument that the children are better with the mother illustrates how the decision-making of the couple is framed by internalized gendered norms regarding work and family (Livingston 2014). Normative, gendered ways of behaving are hard to separate empirically from deliberate choice (Moen 2003). However, these non-egalitarian practices can turn into a disadvantage for women scientists, making it more difficult for them to meet career requirements and to fit ideal scientist norms. In some countries the statutory rights for mothers and fathers are equal and parenting norms are less gendered, which is clearly beneficial for the scientific careers of women.

Our study has limitations and offers points for future research. First, the findings represent a snapshot of the scientists' retrospective dual-career experiences. The

stories from the interviews show that priorities and difficulties shift over time, and that there are even difficulties for those with a partner who "does not want a career", or for those without children. To explore dual career navigation over time, longitudinal data are needed that follow scientists over career transitions and family transitions. This is important in order to capture how two careers affect each other instantaneously, the temporality or so-called local interdependence of linked lives (Fan/Moen 2015). Second, as we do not have couple data, we cannot investigate whether partners have similar perceptions of importance and difficulty, and when discrepancies arise. Third, in our quantitative study, we could only capture that the scientists' experience of their dual careers has been neither difficult nor easy. Future questionnaire designs should, therefore, unravel perceptions and ask about what was hard, what was easy, and when. Finally, it is beyond the scope of our study to examine dual career arrangements in conjunction with scientific discipline and national context, which are important contextual factors. We limited our interviews to ERC applicants in the Life Sciences because they make up the largest share among the applications. Moreover, this allows us to control for the disciplinary background, in terms of working conditions and career logics. From the interviews, however, we can conclude that there exist marked differences already within this discipline.

The findings of this study contribute to the scarce literature on dual careers in science. Although this is a select sample of ERC applicants, our findings are relevant beyond this group. Regarding the high frequency of employed partners, academic partners, and importance of careers, our sample is very similar to scientists in other studies (e.g., Connolly et al. 2011; Jacobs 2004; Schiebinger et al. 2008). Moreover, ERC applicants are particularly important role models if we aim to support scientists in becoming the future leaders in European research. Thus, this study informs government, employers, and funders. While decisions for awarding jobs and funds may still be based on notions of the ideal scientist, interference with family is commonplace.

The COVID-19 pandemic has made it clear we need to reconsider linear career expectations and extreme work models in science, as these are incompatible with external shocks such as lockdowns, travel restrictions, and homeschooling. The same holds true for how the pandemic has changed how we view and live the mobility requirements in working in science. Offering remote work can alleviate strenuous commuting or living apart together. Collected well before the pandemic, our findings on ERC grant applicants can be used as a guide to build dual-career programs aligned with scientists' needs. Even if those needs are heterogeneous, employers and funders should recognize that applicants typically have employed partners and children, and act to facilitate the navigation of dual careers. This also means that there is a broader responsibility for dual-career support of the science system and its institutions.

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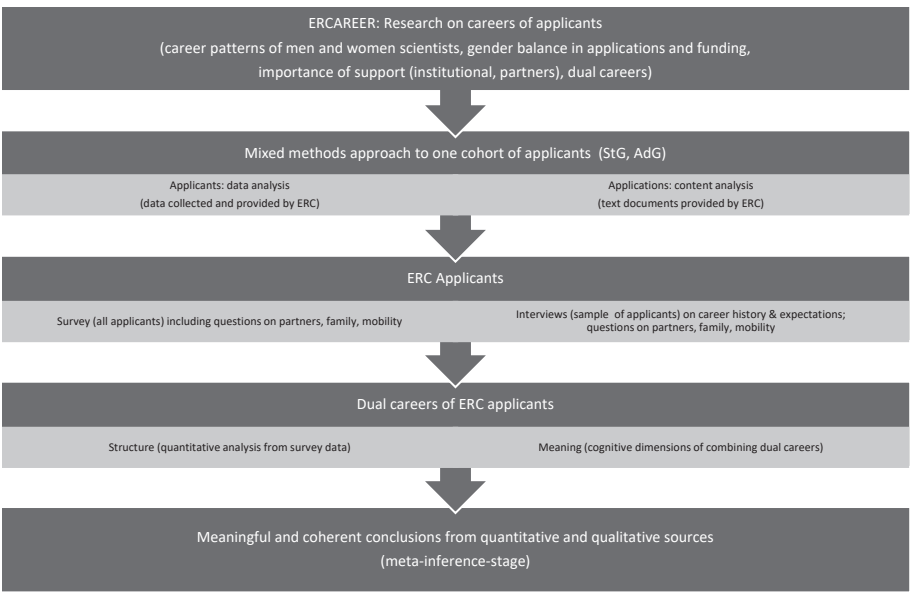
Figure A: ERCAREER Research Design



own illustration based on Kuckartz 2017: 166