# POCARIM policy report 7 : The importance of networking to the careers, mobilities and impacts of POCARIM respondents

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# MAPPING THE POPULATION, CAREERS, MOBILITIES AND IMPACTS OF ADVANCED DEGREE GRADUATES IN THE SOCIAL SCIENCES AND HUMANITIES (POCARIM)

## Policy Report 7:

## The Importance of Networking to the Careers, Mobilities and Impacts of POCARIM Respondents

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**Background: The POCARIM Project**

Between 2011 and 2014 a multinational team of academics and researchers collaborated on a research project funded by the European Commission under the Framework 7 Programme: Mapping the Population, Careers, Mobilities and Impacts of Advanced Research Degree Graduates in the Social Sciences and Humanities (POCARIM).[1]

One aim of the project was to further our understanding of the role of networks in the careers of social science and humanities (SSH) researchers: how they are formed, how they are sustained or fall out of use, how they link researchers across disciplinary, sectoral and national boundaries, and what impacts they have on careers.

In this policy report we present the project's key findings on the nature of networking in the careers of SSH researchers. Our findings are based on original work carried out in each of the POCARIM countries and which includes: a review of the literature, policy and existing data, as well as original empirical survey and interview research. In the conclusion we draw out the implications of our findings for policymakers.

**Methods**

The project consisted of two core phases. Each phase was coordinated by a key partner and carried out across the 13 countries by all partners.

Phase one of the research consisted of:

- A review of over 350 studies on the themes of: employment trends, career paths and graduate destinations; and impact, engagement and the contribution of SSH research (Gustafsson and Hansen, 2013).
- A review of policy approaches to interdisciplinarity, doctoral education as the first phase of an academic career, and responses to the economic crisis in terms of funding of doctoral education (Bitusikova, 2013).
- A review of existing statistical data sources on the population of social science and humanities researchers in the POCARIM countries and beyond (Canibano *et al*., 2013).

Phase two consisted of:

- An online survey of 2,723 SSH doctoral graduates which asked a number of questions on the key themes of the project. These included the perceived impacts of respondents' work, and their international, intersectoral and interdisciplinary mobilities. Survey data was cleaned and analysed in SPSS and EXCEL (Kupiszewska *et al*., 2013).
- In-depth, qualitative interviews with 25 respondents in each of the thirteen POCARIM countries. Each interview was transcribed, translated into English if necessary, and entered into a single NVIVO project file for analysis.

**Introduction**

This Policy Report focuses on the subject of networking. Networks are critical to many aspects of the POCARIM project. On the one hand they play an important role in career development both in terms of disseminating information about positions and research opportunities. In many cases they

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[1] The countries in which the study was carried out were: France, Germany, Hungary, Italy, Latvia, Norway, Poland, Portugal, Slovakia, Spain, Switzerland, Turkey and the UK. For further details of the project see http://www.salford.ac.uk/nmsw/research/research-projects/pocarim-home.

lubricate access to those positions. In a more general sense they shape flows of knowledge and ideas building bridges between disciplines, sectors and international actors.

The role of networking in the promotion of knowledge exchange and the realisation of the 'Fifth Freedom' (Free Movement of knowledge) is clearly spelt out in the Commission Communication on the 'Innovation Union':

> *Increased mobility is strongly associated with the creation of knowledge networks, improved scientific performance, improved knowledge and technology transfer, improved productivity and ultimately enhanced economic and social welfare* (European Commission, 2010, p. 21).

Given the significance of networks to critical processes that lie at the heart of POCARIM objectives, we have been interested to understand the dynamics of network formation, the characteristics and qualities of networks in the social sciences and humanities and factors shaping their growth, evolution, sustenance and demise. With these concerns in mind this sections addresses five questions:

1. How and when are networks formed?
2. What are networks like?
3. How are networks maintained and encouraged to evolve?
4. What obstacles exist to network formation and evolution and how can they be overcome?
5. What do networks achieve for the researchers involved and for research itself?

**Network Formation Processes**

The qualitative data reinforce the findings of other research emphasising the importance of the early career stage to the formation of social capital through critical networks and the pivotal role that doctoral supervisors play in this process.

Although individual doctoral supervisors play a particularly important role, respondents referred to a slightly broader group of key actors encompassing the wider doctoral committee including examiners, members of collaborating research teams and also the research environment and general 'milieu' including peer friendships.

The data also highlight the value of conferencing and business travel both as a mechanism to facilitate network generation and an outcome of social capital (see below). Interestingly the data also point to the role that 'serendipity' or 'happenchance' plays in critical network formation indicating the value of facilitative and creative environments conducive to 'chance' encounters.

*The Role of Supervisors*

Supervisors typically played a very direct role in the career progression of doctoral candidates. This may have had an impact prior to the doctoral phase with supervisors having previously supervised an individual's undergraduate or Master's thesis.

In a number of cases respondents noted the importance of joint degrees for networking – especially when their doctoral thesis was formally supervised across two universities in different countries. These situations generated valuable international networking opportunities.

Similar value can be seen in cases where doctoral researchers were jointly supervised by researchers in academic and non-academic contexts, promoting strong potential for inter-sectoral relationship-building.

The following respondent explains how their Masters thesis arose from relationships established at undergraduate level which then, eventually, lead to doctoral research through their supervisor's networks:

> *In looking around at the Master's programs that were available I'd found one that appealed to me, and I remember I asked for advice from my professor and basically he was happy with the idea at the time. Then Professor [X] told me that professor [Y], who was a long-standing colleague and friend, had the intention of putting together this doctorate in applied research. I didn't know him at the time but they said he was really well grounded in methodology [and] was basically putting together this doctoral programme, and if I were interested, then it was practically the natural continuation of the Masters and, Professor [Y] let me know that the competitions were starting, et cetera* [IT23].

The findings suggest that, in the majority of cases, relationships with supervisors had a continued significance over the career. Many researchers continued to publish and develop joint work with their supervisors. This was particularly likely to happen where both parties continued to work in the same sector and field:

> *[Interviewer: Do you still have contacts with your previous supervisor?] Yeah, quite a bit actually, at the end we were working in that research project together and now we are actually trying to get a paper published so we are very much in touch* [CH14].

In some situations researchers continue to work in the same faculty as their doctoral supervisors.[2] This provides a very fertile environment grounded in co-presence (see below) for future collaboration:

> *[My supervisor] is a lecturer here in the department. I have a very strong relationship with her. She is crucial in the development of my career* [ES09].

In other scenarios where either the doctoral researcher or their supervisor moves to another institution after the PhD, this can extend the networks into a new national or international context:

> *I invited [my supervisor] to the country so that he would give some conferences when I was at the University of [X in Spain] and we worked together occasionally* [ES02].

> *My thesis advisor is part of a Latin American network of researchers in the field of science and technology studies. With this network I have had the opportunity to interact and cooperate for publications. Some contacts in this network, I keep them. Those in Mexico thanks to this Mexican professor still are important. It is also a little bit the case for some relations developed in France thanks to my PhD supervisor* [FR13].

Of course this is not always the case and in some examples researchers referred to relationships breaking down or simply decaying:

> *We're not in contact. We didn't part on good terms and he's not interested in the work that I am doing* [CH15].

The examiners or 'PhD committee' (depending on the national system) are often mentioned as key elements of network enhancement for all parties involved:

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[2] Policymakers in some countries (e.g. Portugal, Japan) have expressed concern at the 'inbreeding' of doctoral candidates who remain in the same institution and continue to work with the same people (including their supervisors) after graduation. Such practices are perceived to be indicative of institutions and systems which are not open to new relationships and ideas, and are likely to be less productive (see for example Horta, 2008; Horta *et al.*, 2010).

> *I extended my national contacts because after my PhD I had got to know [X] who was in my PhD committee. At the beginning [he] was just a contact [in South America], had never worked in Switzerland, never worked on social policy, but was simply curious to know more - so we are still in touch* [CH16].

Very often researchers refer to a wider research environment embracing not only their supervisors but other academics and peer doctoral researchers. This emphasises the importance not only of research supervision but also the research environment in which doctoral researchers find themselves. In the next case the researcher refers to strong relationships with their supervisor in Germany but also with the research group in Spain. The case illustrates the benefits of 'network stretching' as onward international mobility extends the social capital of a whole range of actors:

> *I've still got a good relationship with my professor there (he's emeritus) and also people from the department that are now at other universities. Basically, there are 3 people with whom I keep in excellent contact, one professor emeritus, and 2 professors at different universities – I go to Germany about twice a year. I've done short visits, given lectures, participated in conferences and lectures that they've organized. However, the [research] group at the University [in Spain] is very strong and well-known and I'm still in that. I never unattached myself from that* [ES18].

In the following case the researcher refers to his relationship with a fellow doctoral researcher, which fostered powerful inter-disciplinary and inter-sectoral impacts:

> *Some relations are maintained. For instance, with my doctoral partner. He was an engineer doing his thesis with the same supervisor at the same time and on a close research subject. He was working on drawing and design combining historical and ethnographical approaches. Sometimes we were doing fieldwork together, for instance in a design office in the automotive industry. He, an engineer, played the social scientist and I, the anthropologist, was playing the engineer. We were confusing our partners in the firms. We developed a solid intellectual friendship which we still pursue. It's the same with some mechanical engineers. From before my thesis, yes with the physicist I was observing, who was interested in social studies of sciences and now he is working only as social scientist, playing with scientometrics, network analysis and computer simulation of socio-scientific dynamics* [FR23].

The next example is similar, illustrating how peer relationships may deepen and evolve:

> *My professor encouraged me to join the network of international contacts. That was also interesting because the person I worked with for a year in Germany was a student of one of my professor's German contacts. So the two students worked together, that's how it goes* [HU09].

*The Role of Conferences, Workshops and 'Business Visits' in Network Formation*
Participation in conferences and meetings-related travel emerges as a powerful factor shaping network development. Involvement in this kind of mobility at early career stage has a very significant impact on future relationships and career progression:

> *[Interviewer: How do you establish your networks?] Virtual conferences and then it's basically the formal/informal talks around events like conferences* [CH09].

The next respondent explains how the role of international travel has evolved from a concern with fieldwork during her PhD to a concern with networking after her doctorate:

> *During [doctoral] studies my cross-border mobility was essentially dealing with fieldwork, but after studies, it dealt with conferences. It's sometimes interesting to attend this kind of conference, in order to make oneself known and to enlarge one's network* [FR02].

The following respondent talks of the particular value s/he attributes to more focused project meetings as compared to larger conferences for effective relationship-building:

> *The most significant advantage is that a small team is formed of members working in similar areas, in contrast to a conference, where in most cases, people come from a great deal of areas, and you are put in a section where there are only 1 or 2 students who more or less understand what you are talking about, while the rest just happily sit there and listen. You cannot get any feedback there. In the case of a project, people come from a smaller circle, you can get better feedback, and because you work with others, working relationships can be formed that can determine your career for years to come* [HU08].

Conferencing and meetings are also valuable in extending the geography of networks to a wider range of locations:

> *I [formed my networks] through the conferences that I attend for my personal research or through the visits that I pay to other institutions for my position here or people coming here to teach programs so it's different locations. That helps to expand also the network* [CH17].

In addition to the value attached to attending and/or presenting at conferences, some respondents referred to the value of being involved in conference organisation, which they associated with a 'deeper' kind of networking:

> *I am very well connected because two years ago I organized the Scientific Conference on [X] which is every two years. It made it possible to establish a lot of connections. [I had some] before, of course but it made them stronger, and after that we are finishing a special edition about the Congress so I was the main editor which also makes contact with people. So in fact, if I have, now, to think about a project I know exactly where I will go to be connected, to have collaboration* [CH10].

The following respondent makes a similar point:

> *For my research it's important to organise panels and conferences. These are places and moments when you expand or deepen your contacts, your network* [CH17].

It is important to remember that networking is a skill and one that is closely linked to personality. Some people are more disposed to networking than others and some researchers find it quite difficult. The following researcher explains that she is not so good at 'active' networking:

> *I guess there are people that are better at this than I am. At least [in an] active way* [CH22].

### Serendipity and Happenchance

Ackers and Gill's (2008) work on the mobility of Polish and Bulgarian scientists found that unexpected opportunities played an important role in mobility and career choices. It is interesting to see that in POCARIM, too, many researchers talked about the 'chance' element of networking. The environment of conferencing and meetings associated with research generates opportunities for knowledge encounters but it is rarely possible to predict specific outcomes. One German respondent, for example, explains how her career happened 'really by accident' (DE06). Others referred to 'coincidence' and serendipity:

> *I ended up in this department not by choice but by chance and now I'm kind of building something so again it's a mix of planning and unplanned things* [CH16].

*There have been some collaborations with one or two people that I think I will also work with in the future but as I said it's not clear what will happen* [CH22].

A recent presentation by a very senior and established researcher talked of the role that 'serial serendipity' played in career evolution. This does not suggest that organised meetings and planned events are not important but rather that outcomes are unpredictable. And many researchers would not have made the collaborations that have been of such great value to their research and their careers had they not been able to participate in such events. Engagement in creative spaces that create the potential for such chance encounters are critical to research relationships.

**Network Quality**

The concept of a network is quite complex and means different things to different people. Individuals often talk about the diversity of their own networks in terms of the quality of relationships and their distinct roles. The case below is cited to convey the breadth and complexity of researchers' networks before examining specific qualities in more depth:

*[Networks] play an important role. My professional journey is full of personal relations which open new perspectives. Some are punctual discussions like with [famous academic] I met three times but others are relations which constitute my network. Some are weak ties which open opportunities and facilitate relevant connections. Others are strong ties like with my PhD supervisor, or with this engineer – philosopher who heads a design office and with whom I have maintained close relations for more than 15 years. Others are relations I re-activate every 3-4 years but they seem like friendships as if we were just separated the day before. Networks are important for scientific discussion, finding a grant for the thesis, finding a research contract. For employment, it was another network with hobos (homeless people) and social enterprises. These two networks have few connections. My network on ethno linguistics and anthropology is also a different network* [FR23].

*Networks as Friendships*

As noted in the case above, the research revealed a strong tendency to use the language of friendship when referring to networks. Many respondents either could not or indeed would not distinguish professional networks from friendships with these two circles fusing together entirely. Others did try to make a distinction often with a great deal of 'overlap'.[3]

The following researcher explains how his network developed during his doctoral research when his professional colleagues formed an integral and indistinguishable part of his friendship circle to more recently when he has tried to separate relationships a little. Nevertheless, he continues to see his colleagues more as friends than formal 'social capital':

*I think they need to be separated and at the same time I really do appreciate when I am able to connect them. The kind of distinction is mainly the frequency of the changes and being available. For my personal network I tend to be available all day long. For my professional network I try to get the connection when I come back home and I am trying to put more [time] into my personal network because it is really tempting when you have this background in anthropology or in a company to spend all your time working. When I was a PhD student, nearly all my friends were anthropologists. And after one or two years it was very difficult for me because we just thought about anthropology all the time and for my wife it was also very difficult too. Even for me it was too much, so I need to have two separate networks but*

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[3] The dual friend-colleague quality of scientific networks was noted by Kiopa and Melkers (2010). Interestingly, they found the close overlap of professional and personal networks to be more common in international networks compared to domestic networks.

*beside that I really do appreciate when I have very friendly relationships with colleagues and my professional networks. I did not like the competition. I am not comfortable with people who pretend to play a role because they want to show themselves in the best way possible. So I tend to collaborate with people I have a kind of friendly feeling with and then we tend to transform our relation from a professional one to a personal one* [FR18].

Other respondents spoke of the merging of professional and friendship relationships:

*I can just see little difference between professional and personal networks. Very often both overlap. The small difference is that professional networks are dedicated to strict scientific exchanges but professional networks also supply personal networks* [FR02].

In some cases professional relationships had become friendships over time either because they had deepened or because, to the contrary, the professional element had become less significant. The following case illustrates how relationships that commenced on purely professional basis (such as supervisory relationships) then became more like friendships over time:

*Due to lack of productivity my professional network has tended to become a personal network. My masters and doctorate supervisors are friends* [FR11].

In other cases respondents referred to the damage that professional mobility caused to personal networks and friendship relationships:

*In academia there are a lot of difficulties. You have to be very mobile, and so it means to your private networks, you don't see them too often and of course if you come to your place, your colleagues become also your friends. So it's not entirely possible to separate these two things* [CH19].

These issues are discussed in detail in Research Report x (The Impact of Caring, Partnering and Family).

*The International Quality of Networks*[4]
The majority of respondents referred to their involvement in important international networks. In the first case the respondent was registered in France but did their empirical work in South America generating complex international networks:

*During my PhD, mobility has been constant because my research topic was about Mexico but the thesis was made in France. All my fieldwork was conducted in Mexico, which led me to spend half the time in France and half in Mexico. Inside Mexico, I had to make a lot of travel into various regions where nanoscience and nanotechnology is made. Moreover, in the group where I make the doctorate in France, they were very dynamic and had contacts in Latin American networks in the studies of science and technology [FR13].*

In many cases these international networks were first instigated during doctoral studies (as in CH19 above). The following doctoral researcher had established links across Europe and Africa:

*During my PhD studies and after that I got involved in a project which included 5 countries: France, Portugal, Central African Republic, Togo and Burkina Faso* [FR02].

In some areas of research the international scope is defined by the subject matter. Researchers in some areas of law, for example, may take more of a national or regional focus in their research:

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[4] International mobility and its relationship with networking is discussed in more detail in Policy Report x.

*My professor is German-oriented, and the particular dogma and branches of criminal law that my professor and I were working on is most highly developed in Germany. So I had to go through the German academic literature. For various historical reasons, the Hungarian legal system has been influenced by German law, via the Austrians, so our roots definitely lead us back there. I joined the department, and my professor encouraged me to join the network of international, German contacts. That was also interesting because the person I worked with for a year in Germany was a student of one of my professor's German contacts. So the two students worked together in Germany, that's how it goes* [HU09]

The relationship between discipline or field and international networking is discussed in more detail in Ackers (2013a).

The following case shows how those respondents who are currently working outside of the academic sector have also retained and built extensive international networks:

*I am asked to connect with people from Argentina or the USA, or Canada, because [I work in] marketing and sales and the legal sector. It's a French multinational. There are offices in Italy, London, Great Britain and Germany and in Holland there is something too* [ES22].

The 'international' quality of networks can be seen not only in nationals' links with researchers in other countries but also, and importantly, in the networks that mobile researchers retain and build with colleagues in their home countries (diaspora networks). Researchers often refer to the importance of these networks both symbolically and emotionally but also in quite concrete terms shaping their ability to return and secure employment. In the following case the respondent talks of how she has been able to build on her diaspora networks to promote research internationalisation in her UK institution whilst simultaneously invigorating her personal relationships:

*I'm continuing to work with [Italian University]. The relationships are partly informal because when I'm in Italy I live [there] and I continue to visit the department on a private/personal point of view. The contact has also been in a more professional sense in these two years. One of the things that I was asked to do as a post-doc at [UK university] was to draw on my international ties. They give bursaries to foreigners essentially to increase the internationalisation of British universities; so I tried to develop a series of relationships with the [Italian] university. We arranged an encounter [in Italy] and we're trying to work out a series of seminars together. My colleagues have also begun to look into an Erasmus exchanges so that's the type of relationship I have* [IT15].

*Research Diasporas*
The existence of a diaspora enhances the transfer of knowledge. A stock of skilled human resources abroad can act as a conduit for flows of knowledge and information back to the home country, and social and other links increase the probability that knowledge will continue to flow back, even after individuals move back or move away. In some emerging economies, diaspora networks play a vital role in developing science and technology capacity. The Indian diaspora, for instance, played a vital role in developing the IT and business process outsourcing industry in India. Chinese Taipei has also benefited from its USA-educated engineers and entrepreneurs, who have linked the two economies and contributed to the development of the IT industry (OECD, 2008).

The European Commission recognises that

*a very large number of European researchers are working abroad [...] This represents a potential asset for the European Research that has been largely unrecognised until recently [....] Europe wants to build and maintain links with its expatriate researchers. For this reason*

*the European Commission has been actively pursuing Euraxess-Links Abroad* (European Commission, 2009).

The first Euraxess-Links was launched in the USA since EU countries had the strongest diaspora policy in this country.[5]

The research and policy literature typically links international networks with concepts /metrics of excellence.[6] Researchers, on occasion (but not commonly) also make this immediate link, perhaps reflecting career stage and the role that networks play at different phases in career paths. The following French researcher immediately links the networking concept to key actors on the 'global' scene and the role that these networks play in the exchange of knowledge:

> *Yes, there are key people and key centres, not only I have access with them but sometimes I am in conflict with them. That is one of the other problems. So yes, I have access to some key researchers in France, in America regarding my subject. And friends in Europe as well, I mean, for example, Portugal and UK. We develop as well some controversies, right now I am in a middle of a controversy with some colleagues in Paris but that is part of the job. I mean we don't agree on the descriptions of what we have. But yes, I do have access to them and it is a really small world. I mean once you start publishing on your own on a specific topic, you are becoming like a specialist on them. And then I would say that the field is like maybe ten or fifteen people really aware of that on a global scale. Yes, ten or fifteen people maximum* [FR01].

*Inter-Disciplinarity and Networking*[7]
The discussions with researchers about their networks raised many issues connected to the inter-disciplinary quality of their work. In some cases inter-disciplinary working extends researchers' networks in interesting and dynamic ways. In other cases researchers suggested that engaging with different disciplines over their career resulted in the declining significance or relevance of networks.

Perhaps one of the most striking features of the interviews, and the POCARIM study as a whole, is the role that researchers in the social sciences and humanities play as 'boundary spanners' bridging disciplines, countries and sectors to create important knowledge fusions and translations. The following examples give a flavour of the complex inter-disciplinary teams that respondents engage in:

> *I work with historians, sociologists, businessmen, engineers, technology transfer office managers, people linked with the politics of science and technology* [ES03].

> *The topic is multidisciplinary. I work with economists in particular. I have also worked with archaeologists, forensic anthropologists [and] Navy officials. It's more than collaborations, they are involved in the same group setting up meetings and events and knowing what everyone else is doing* [ES10].

> *I'm an innovations sociologist; so all the domains dealing with innovation I'm part of them. I work will mechanical engineers, designers, agricultural engineers, technologists… working in private firms, enterprises, academics* [FR02].

The European Commission's Communication on the 'Innovation Union' (European Commission, 2010) echoes the findings of key social science research[8] emphasising the importance of 'boundary

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[5] The service was called ERA-LINKs at the time.
[6] For a critique of the development of metrics linked to networking and internationalisation see Ackers (2010)
[7] Link to inter-disciplinarity and lone scholar section

spanning' or 'competent intermediaries' in building inter-disciplinary and inter-sectoral relationships and promoting innovation.

A number of respondents who had worked across a range of disciplines suggested that whilst the networks may look very impressive on paper, in practice they may represent high risk and could have limited impact in some areas (such as career progression):

> *That's maybe another problem the network is facing. As for me as I come from an interdisciplinary thing and I meet a lot of very different people, very interesting people, anthropologists, sociologists and lot of people, geographers and, but then when it comes to say, 'Okay, okay now I am trying to find a job. I need to find a project. I need to do'. Who is ready to go with me? I collaborated so much with people not from my discipline but I am kind of alone* [CH12].

> *Now that was the problem I had. Almost each conference was related to a different scientific community - people who were doing technology assessment, people who were doing urban planning, you name it – because I was working on very different research projects all related to different communities. So it was quite fragmented I would say* [CH24].

In contrast the following researcher, when asked if they maintained contact with their doctoral peers, replies:

> *Ethnography is a relatively small field; we have shared forums and you can't lose track of each other. We're all members of the Ethnography Society, we get a newsletter about events, there are national professional training sessions on ethnography/museology. In October we had 80 people here from all over the country. There are four university departments and a research institute, some joint research projects – so there are active contacts. I can easily get in touch with anyone, and we keep track of one another's work* [HU04].

*Inter-sectoral Relationships*[9]

The kinds of networking noted above in the context of inter-disciplinarity can also be seen with reference to inter-sectoral relationship-building. Indeed inter-disciplinary work is often linked to inter-sectoral engagement (as in ES10 above). It is here that our population of social science and humanities researchers can once again be seen to act as critical boundary spanners. Equally, moving between sectors can result in a loss in relevance or activity in some relationships. In the first example the respondent moved out of academia in the past 3 years and describes the experience of 'wearing two hats':

> *In addition to the pure scientific input my new position allows me to think in two different ways; so still in the way of a researcher and on the other side, in the way of a public servant. Sometimes I have some discussions with colleagues here and suddenly I start thinking again like a researcher* [CH06].

One respondent refers to his links with 'local political' actors [ES16] and another, to sharing knowledge with the senior policy makers in Mexico (ES22).

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[8] The crucial role of individuals who act a 'brokers' across organisational boundaries (Wenger, 1998) has been argued to apply to international migrants also (Williams and Baláz, 2008).

[9] Research Report x focuses on Inter-sectoral Engagement

The following respondent has moved out of the university sector but retains his research links with the University where he did his doctorate. He now co-supervises a PhD intern with his ex-supervisor, illustrating the long term benefits of supervisory relationships:

> *I speak with my (ex) supervisor a lot. We are part of a research group at the university. We continue in that research group and we develop group projects. Right now we have a PhD thesis which this company is carrying out because we have a PhD intern who works on the thesis from here supervised by me and by my thesis supervisor* [ES26].

The role of researchers in spanning inter-sectoral boundaries is not restricted to certain disciplines – in the following case a sociologist researching religions explains his relationships with non-academic sectors increasing the impact of his work:

> *I have personal relationships with, for example, the head of the protestant media in [x] and protestant journalists work within the public media. So I have really close relationships with them but as well with leaders of main movements within the evangelical world, for example, the head organization of the evangelicals in [x]. So that has an impact as well not only on the public opinion but as well on the policies made about them* [FR01].

The next respondent explains the inter-dependency of relationships across disciplines and sectors in his research, but goes on to suggest that collaboration is becoming more difficult as a result of 'suspicions' presumably linked to perceptions of competitive advantage:

> *I'm an innovations sociologist; so all the domains dealing with innovation I'm part of them. I work will mechanical engineers, designers, agricultural engineers, technologists working in private firms, enterprises, academics. As a far as I'm concerned, the key people I'm working with are academics and private enterprises. They're central because without them I'm useless. Their concern is my concern. I have to assist them to promote their activities. Talking about collaboration, let's say that it sometimes difficult; people are becoming more and more suspicious; they are not open enough to collaboration because more often they think that one will cheat them* [FR02].

*Formal and Informal Relationships*
In most cases respondents talked of informal and quite personal relationships they had forged over their career. It is interesting that some people felt that more formal and structured links between institutions and communities were necessary to facilitate and embed these personal relationships:

> *Even with my friends at the Institute, we didn't manage to really work together. We need an institutional framework that will help us* [CH12].

The following respondent illustrates the merits of these more formal 'communities':

> *There is a whole comparative social policy community in Europe that I came to know over the years. And now I'm somebody who is known in this community. I just came back from a historical conference in London where I met again all the Germans, so I know these guys* [CH16].

> *I don't have a clear-cut network. I belong to several international extensions for research, for personal research for example, in the USA, but that's only on a formal level, so that I get the magazines. In reality, I don't have a set network* [ES20].

In the last case here a respondent explains the importance of more formal channels to enable doctoral researchers to develop international relationships at doctoral level:

*Either you found your contacts on your own or you wouldn't have any. There's no system per se, like there is at Rome for example, where in your second year they send you abroad. It's not specifically provided for that there would be activities, projects. Instead it has to be the individual that finds them. Even a colleague of mine that didn't have these kinds of considerations, and who could have gone, then she couldn't succeed in getting anything because she didn't have the right network. She asked her supervising full professor, for some contacts to go to [Austria] but he didn't do anything. She tried, no-one answered, and so in the end she didn't do anything* [IT22].

The ERA Expert Group on Research Careers argued that sustained, formalised interactions were essential for successful interactions across sectors also:

*Collaborative institutions. The framework conditions for academia-private sector collaboration require a long tradition of partnerships (see the EMBL good practice below) or new settings such as regional clusters, competence centres, science parks, etc.* (Ackers et al., 2012, p.29).

A study of doctoral mobility in the SSH conducted on behalf of the NORFACE group (Ackers and Gill, 2008) found that doctoral mobility worked most effectively when it took place in the context of structured schemes and, most notably, joint doctoral programs. The authors concluded:

*…it would seem that mobility (during the doctorate) works best and offers greatest added value when it operates through existing scientific networks and relationships* (Ackers and Gill, 2008, p.51).

**Network Maintenance and Evolution**
The interviews were designed to assess not only the processes of network formation but also some information about the tenacity and sustainability of networks. The existence of 'contacts' in itself conveys nothing about the value or impact of research relationships. Having said that, an apparent lack of 'outcomes' or impact associated with social capital does not in itself mean that such networks lack value or potential. Many may lie dormant or latent for some time and it is impossible to predict how and when a relationship may yield productive outcomes. This section addresses some of the issues raised by respondents.

*Network Decay*
One researcher describes his relationships with his supervisors as 'one-off collaborations' that had since come to an end [ES03]. The second case suggests that the relationship decayed over time but had been productive in the post-doctoral phase:

*There's little contact because since I left academia it's kind of difficult to keep in touch. I didn't expect it that when you are out of academia that you lose the contacts so quickly, it's a bit difficult to keep contact with people you haven't been really friends with because you don't work on the same things anymore. It's not like meeting in conferences. It's difficult to keep in touch because it's not just around the corner and we don't work together anymore, like we have no common topics. You lose contact very quickly being in a very different environment* [CH13].

*The relationship becomes more distant with time. With time you keep in contact but it's quite unusual. The only link that I kept with my thesis director was that we worked on the development of a book. And that's it, we haven't worked together since* [ES07].

In some cases those researchers who had moved out of academia into the business sector suggested that the doctoral period did not help them to develop relevant networks that had a continued relevance in the non-academic sector:

> *There is nothing there that is still useful […] I had really very few people who had contact with the outside world* [CH04].

Having said that, he goes on to informs us that he maintains some links,

> *I'm in touch with my former colleague who is a friend and my former professor and another professor. And I also regularly speak at their seminars* [CH04].

In another case the researcher said that she had not kept in contact with her academic supervisors but she had retained links with some of the professional associations she had engaged with, empirically, during her PhD:

> *I did some interviews during my PhD with people working in the mental health field. I didn't keep contact with them but with the associations I was also quite in contact. At the beginning of my PhD I did an evaluation of the associations so we were all the time in contact. With individual professionals] it was more like an effort […] to find a common ground* [CH08].

In other cases researchers spoke of maintaining strong and productive relationships. In the next example joint doctoral projects (so formalised relationships) appeared to have kept a momentum going:

> *We maintain relationships, we keep in touch with the world of university. We remain connected. There are people within this team that are doing PhD's within the company. They are doing doctoral projects which allow us to stay connected to university. Those who are doctors also maintain relations with our original departments as well as with those pre-doctoral research groups that I talked about... In short, we maintain relations with the world of university. And also we have gone to conferences etc. thanks to those university institutions* [ES01].

*Co-Presence (Distance/Time Decay/ Dormancy)*
The above respondent [CH13] indicated that geographical as much as substantive proximity (i.e. '*not just around the corner')* played a role in the decay of relationships. Many other respondents made reference to forms of 'co-presence' (spending time together in place) and its impact on the longevity of relationships. The value of face-to-face meetings in cementing relationships and building international networks is recognised with regard to business migrants (Beaverstock *et al.*, 2009) and research careers (Ackers, 2013b; Ackers and Gill, 2008), and reflected in the following comments.

> *If you are not close geographically or within a place it's very difficult to keep the things going* [CH12].

> *If I look back at the way I was collaborating with people I found out that the closer the people are [geographically] the more productive is our collaboration* [CH24].

> *[My relationship with my supervisor] is a personal relationship more than anything. Sometimes I call him and we chat… I am now detached from the university. So for work reasons, regarding (geographical) space I can't have a relationship that I would have if I lived in Valencia* [ES21].

Asked how her networks have formed the following respondent replies: 'Mainly through face to face contacts and through publication' [FR10].

In other cases respondents referred to the role that virtual communications played in keeping relationships active:

*I maintain the contacts that I had during my PhD even if quite a lot of them are based in Northern India where I travel less frequently now. Because my activities are mostly in Southern India but we are in touch by email* [CH17].

*Academia has changed a lot. It's really network management that is important. You need to build up a network and stay in contact with them, send them emails every day, just to say hello. The most important thing about the network thing is that you stay in contact with people and not just when you need something* [CH20].

*Fortunately, nowadays Facebook and LinkedIn help a lot to keep in touch. The reason I signed up for Facebook was to keep in touch with different people I meet at conferences. So these contacts exist with less or more intensity* [HU02].

In this form of mobility, place is often not relevant in an immediate geographical sense (national location), but is in terms of the institutional and/or individual reputation of participants. Whilst co-presence continues to play an important role in this network-building and intellectual investment process, this is of particular significance at early career stage than later in careers when network maintenance can often be managed with more limited co-presence through a combination of virtual mechanisms substituting for or enriching physical encounters (Ackers 2010b):

*[I have contacts] in many countries and have kept building them up ...your address book is kind of all done for you virtually ... it's become much easier to communicate by internet. Nobody really asks which country you're based in any more. It's more like, what you do is the important thing and so I am working with groups in Bulgaria, Romania and Hungary, in Germany, the States ....*

Whilst virtual communication has revolutionised transnational academic contacts, Jöns suggests that 'personal interaction remains pivotal for experiencing different research contexts, for mobilising new and unexpected scientific resources and for building up trust for successful collaborations and informal networks across the globe' (Jöns, 2007: 101).

For others it is not so much the geography of contacts that is important but their status:

*[Interviewer: How have your networks tended to be formed: face to face contact in workplace or conferences?] Personal relations, but with persons in a good political position* [FR12].

In the next case the researcher was trying to establish networks with his home country (Switzerland) from his base in the UK and describes how difficult this process can be in the absence of co-presence:

*It was only when I got to the US, just because it's a transition, I was thinking about what I was going to do next and I did start to get in touch with people in Switzerland. In some way it doesn't really work. As they don't have, if you are not in front of them it's really hard for them to connect* [CH15].

*I wouldn't say [I have maintained relationships from my PhD] I have maybe good relations with many, and many remember me and may appreciate me as pal and scholar, but unfortunately 'weak ties' don't matter. Only everyday embeddedness plays a role* [IT27].

The following respondent refers to the importance of retaining networks in her home country when she is employed elsewhere. She suggests that an important mechanism facilitating the retention of strong ties is some form of formal link via a Fellowship. In the absence of that, regular visits facilitated by low costs travel are critical to the retention of relationships:

> *For those who don't have a fellowship, as in my case, I was practically out of the country all the time. Then it was necessary for me to be in [Italy]. Two or three times a year there would be weeks of intense seminars, and for those you had to be present, so I had to come back. We're living in the period of low-cost flights and all this was possible. For me it was possible only because there's now this system of travel, basically with such low expenses* [IT21].

*Latency and Potential*

It is interesting to note that, once formed, perhaps with strong initial co-presence, even networks that have become somewhat inactive have a latency that can be rapidly re-energised when the right circumstance arises. In that sense many networks will go into a period of dormancy but nevertheless retain significant potential.

> *I think even if you have -- you won't be in touch for like for some years or so but I think that's something you can go back to and say -- and closer to these people again and ask questions and/or ask favours or whatever, and yes, I think that it works* [CH19].

> *I was last year in a meeting in Sicilia they invited me to talk about the future of computer games and I met two people that I met years before. I didn't know they would be there. I mean we lost contact but then we met again. So it's not a continuous interactions with those people but time to time on different topics, we meet again - it's easier to develop new things with these colleagues* [CH24].

> *Relationships do exist. I've a visiting researcher status at the University of [X] but we don't interact much. Anyway I'll try to activate the relationships in order to impact my career* [FR02].

> *I have had no time for my old relationships so I will have to re-heat them. International relations require a lot of effort and you cannot just wait and sit on your merits. You need to be active* [HU10].

**Obstacles to Network Formation and Evolution**

The interviews also pursued questions around the factors that facilitate or restrict relationship-building. These factors include accessing funding for active networking (and especially the co-presence aspects), the time they had available to them to invest in relationships – taking family and life course into account, the effect that language has on the scope of networks and, finally, the effect of disciplinary specialism or methodological approach to the need for and scope of networks.

*Funding Networking*

Unsurprisingly, funding is a major factor shaping the ability to network and lack of funding, especially after the doctoral phase, is a critical obstacle to networking:

> *Funding for mobility is important because we need to discuss our findings with colleagues elsewhere. During the doctorate, at the institution where I have made my PhD, there was a fund for PhD students and so we could communicate and participate to conferences. The mobility was also funded from of projects of my thesis supervisor. I also use my scholarship to fund the mobility. After the doctorate, I tried to continue participating in these networks, but this has been difficult because I do not have support from the institution to pay travel and hotel expenses. Being young and new into the institute where I am now, I have not yet many rights to use the funds for travel, but on the other hand, they ask me that we discuss the advances in international forums. This means that I have to find on my own funds. It is for this reason that mobility in recent months has declined in my work* [FR13].

> *I still work and publish what I can, or rather, I always take into account the limits that restrict you when researching on a small budget, using methodologies or techniques which are low*

*costing, and I am always moving in the environment close to my home, because I don't have possibilities* [ES14].

*Let's say the necessity of international mobility is obvious: to be in contact with others researchers, to learn more about some scientific subjects in order to be more knowledgeable, to raise funds…; but very often, mobility is impeded by funding; you may plan international activities but no means to achieve them mostly when you have no sponsor to finance them* [FR02].

In the next case the respondent refers to the importance of funding to the location of meetings:

*Usually we invite them for various conferences because they have more opportunities for mobility. There are very good connections between Dutch and Hungarian researchers (a couple of Hungarians are working there) and we often send PhD students to the Netherlands. They have quite good facilities there which help a lot in our own research* [HU05].

*Family*
Certainly international mobility presents something of a challenge for researchers with family commitments both in terms of long stays and repeated or unpredictable short stays:

*It would have been interesting [to go abroad]. I had a dream for quite a great number of years when I was young. And it was not so easy with two and then, three children to move everybody, cutting them from school. So, it was easier to go one week or some days, alone [for conferences]* [CH25].

In other cases researchers pointed to the impact of work-life balance on their ability to build relationships in their own workplace. Linked to perceptions of 'commitment' and competitiveness, the following Italian mother of two children refers the impact that having maternity leave and subsequently working part-time has on her productivity. She says that for her it wasn't so much a prejudice against people with children per se but the fact that if you are not there you are 'invisible' – out of networks/ group etc. and unable to be as productive and in academic research. You are at the end of the day only judged by one form of productivity and this is a direct relationship with time invested. Effectively, not working full-time results in you being less competitive. So it is an indirect form of inequality:

*The problems are that if you want to take time [out of academic research] whether it's in the private sector or maybe for maternity, in effect you disappear, and in my department if you're not there then you don't exist. So if you don't come in , if you're not there then people forget you exist, you don't get into projects, you don't figure in the research groups, you don't get in, and so according to me in fact it's impossible to have the maternity leave that's necessary, in a responsible way.*

Finally, a German woman makes an interesting comment that women have to focus even their networking energies on different kinds of networks to support their role as mothers. She refers to a neglected aspect of time. Namely the time investment needed to maintain social networks with other women and mothers – who may provide a critical part of a mother's support network. She suggests that men don't invest in this kind of personal support network:

*Men, they possibly have professional networks. What they really do not have are personal networks in connection to childcare. When mums have an afternoon off they grab their telephone and meet with five other mums. Men go to the zoo. They would not think of meeting another dad. Mums are dependent on social capital - to know as many other mums as possible and to maintain their networks. But you can only maintain them if you have the time. When you are busy from the morning at seven o'clock until seven o'clock in the*

*evening, you don't have time for this anymore. That's also alright when you are happy with it and don't point a finger at mums who want to take time for their children* [DE17].

The tension between managing personal and family life and research productivity is discussed in more detail in Policy Report 6 on 'The Impact of Caring, Partnering and Family'.

*Language and Networking*[10]
Language emerges as an important factor shaping the quality of networks. Certainly, language skills enhance the geographical scope of networks:

> *Sometimes I ask myself why certain people collaborate and why others don't. If you go to these conferences sometimes it might be very superficial in the manner you interact with all those people. However, sometimes you have the opportunity to talk a little bit more with a person who might be interested in collaborating with you. For example, for writing an article together, things like that. And I think that if you have a more direct access in terms of language it might be more easy to convince a person to collaborate* [CH06].

In the next case cited, the respondent suggests that it was not so much language that created obstacles to international networks but prejudicial attitudes towards other nationalities:

> *Language wasn't a problem, other things were. [Interviewer: Like what?] Being a Hungarian. I think that we really have to fight to be accepted, even in places where we belong. I don't know why it is – maybe because Hungary is a former socialist country, or because it's small or in the east. I went to an international seminar in Lyon, and my feeling was that people who were Brazilian, American or Mexican didn't have to work as hard to be recognized for what they could contribute. Once you get this recognition, then you're fine. But I think there is this gap that you have to cross. This is what I have seen* [HU06].

*Lone Scholar and Field/Discipline Specialisms*
Some areas of research (or fields) demand larger or more complex networks than others. This can best be described as field/discipline specialisation and, more specifically, 'lone scholar' models of research.

The following philosopher is engaged in quite an intense and intimate specialist network:

> *It's a small world, the world of people studying Renaissance and 16th century. Everybody knows everybody* [CH25].

Another philosopher when asked whether he teamed up with other researchers outside of philosophy answered simply, 'No' [ES12].

In another example, a philosopher researching a particular philosopher replied, 'Nobody is interested by Heidegger', suggesting that his research is both highly specialist and not of any direct interest to non-specialists [CH09]. Team working for this kind of 'lone scholar' researcher may not be a high priority in any event. On the other hand trying to develop more inter-disciplinary ways of working or translating research findings to promote impact may require even these scholars to consciously develop broader networks.

Networks may also be very place-specific. In one case, the respondent (an archaeologist) suggests that their research is tied very much to one locality:

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[10] Language is discussed in more detail in Policy Report X (Internationalisation and Mobility).

> *It being a medieval archaeology doctorate with a specific line of content, it didn't even make much sense [to go abroad] because, let's say the excavations that we were involved were in essence our line of research – the doctorate was a bit tied to the territory, and so the scientific work too* [IT07].

However facilitating the environment may be, personality also plays a role in how individual researchers respond to opportunities. Networking is in many respects linked to personal skills and attitudes of both parties and, in cases where these skills were lacking or perhaps not recognised, doctoral researchers failed to achieve a high level of social capital:

> *The mentors I worked with [...] were not really in good networks or they didn't do the job at introducing me to people. So when I left, I didn't have [good networks]. At that time I didn't necessarily realize how critical it was* [CH15].

*Hierarchy and Protectionism*

Respondents also identified issues connected to attitudes towards hierarchy or prestige that may promote a more elitist or competitive attitude towards networking. In the following case the respondent explains how his thesis supervisor adopted a 'territorial' approach:

> *[I no longer have a relationship with my supervisor] because he works in [a place some distance away] and I work here. He is quite a 'territorial' person and he didn't want to work together with anyone, in fact the opposite, he was quite confrontational. And this harmed our relationship to the point that we don't have a relationship now* [ES23].

In some cases, respondents linked these attitudes to cultural differences:

> *The academic world in Bolivia is quite different from the academic world in Switzerland so I struggled a little bit at the beginning in Switzerland. It was clearly defined who is a Ph.D., who is the professor and who is a postdoc. In Bolivia it was more horizontally organized* [CH02].

> *People in Switzerland don't really want to collaborate. They're being protective. So it's really hard to create a new contact, whereas here, you can email people and say look we have similar research and trust, let's do something together, and they're really happy to do that* [CH15].

One researcher describes another form of territoriality linked to discipline, which impeded her attempts to form relationships:

> *I'm treading on eggshells because I have a network of contacts who are lawyers but I don't trespass. I offer them up to date information, I share knowledge with them, but basically I don't go into depth on anything because [they feel] I don't understand. I don't have a Law Degree [ES22].*

The next respondent underlines the critical importance of inter-sectoral networks but suggest these may become quite competitive and 'suspicious':

> *As a far as I'm concerned, the key people I'm working with are in academia and private enterprises. They're central because without them I'm useless. Their concern is my concern. I've to assist them, to promote their activities. Talking about collaboration, let's say that it is sometimes difficult; people are becoming more and more suspicious; they are not open enough to collaboration because more often they think that one will cheat them* [FR02].

Some of the Italian respondents referred to the relationships between doctoral researchers and their professors:

*When the doctoral student wants to go out of the country for experience, it's happened that people say, about their adviser 'but I had a difficult relationship because I wanted to go abroad and they wouldn't send me', 'or else I had to slave for the chance'* [IT21].

Another Italian respondent was keen to challenge these perceptions:

*I don't like it because in a sense I'm like [professor 1's] 'illegitimate offspring'. Meaning I'm stuck with this aspect that I belong - but I mean you really belong, as if you were some kind of object, to the professor with whom you did your bachelor's. And so in this kind of absurd view of things, since I did my bachelor's with [professor 2], then I belong to her, while [professor 1], who's let's say the cock of the walk down at the department even though he's pleased with me, impressed with me, I mean he always gives me projects to work on, but he still doesn't feel that he has any obligation to look after my future, meaning that it's not his business. And he doesn't interact with anyone outside of what's necessary and doesn't interact with me except when it involves giving me things that only I know how to do and so he gives them to me. But really in that department actually I don't really fell like there are any opportunities for growth left* [IT22].

The European Framework for Research Careers report[11] notes the continued impact of forms of hierarchy and 'feudal' relationships that continue to characterise supervisor/doctoral researcher relationships in some national contexts:

*At present the Principal Investigator (PI)-researcher relationship is far too dominant in the careers of researchers and could fairly be characterised as a semi-feudal relationship, which places even experienced researchers in an inappropriate 'apprenticeship' position to more senior academics, which greatly restricts their autonomy* (p.18).

**The Impact of Networks**

Respondents were invited to talk about the value or productivity of their networks. Responses evidenced the disparate roles of networks, including the role they play in career building (through accessing positions, funding or teaching opportunities or opportunities for dissemination and publication), or from a methodological point of view, in accessing research populations and data and methods training or, more generally, in morale and confidence raising.

A very small minority described their networks as 'unproductive', with one respondent expressing surprise that the language of productivity be associated with something as personal as human relationships:

*Productive? What a strange word when talking about friendship… Intellectually they were very productive, yes* [FR23].

The following respondents suggested that their networks had remained 'Unproductive':

*They helped me but it was a failure. Thus, they are not productive* [FR11].

*I don't expect them to be productive* [FR21].

On one hand, these contacts are unproductive because they do not lead to common projects or studies. But from another point of view these are productive, because I get more information about literature, projects, and conferences *[HU02].*

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[11] 'Towards a European Framework for Research Careers', European Commission DG for Research and Innovation, Brussels 21st July 2011
http://ec.europa.eu/euraxess/pdf/research_policies/Towards_a_European_Framework_for_Research_Careers_final.pdf.

*Networks, Social Capital and 'Open Recruitment'*

We have grouped the following responses about impacts under a generic heading of 'open recruitment' because they illustrate the importance of social capital to accessing positions and career development more generally.

The European Science Foundation places a similar emphasis on transparency:

> *The importance of transparency of recruitment criteria and their accountability in order to ensure equal opportunities in all stages of the career process is a precondition to excellence and innovation in research. The lack of transparency and accountability.... appear to disadvantage women scientists and other minority groups of researchers. This leads to a limited pool of potential candidates at the expense of scientific excellence* (ESF, 2010:28).

For a recent and detailed study of open recruitment and recommendations for policy see Technopolis (2014).

A significant number of respondents indicated that their networks played a major role in shaping their ability to access critical actors. In most cases, personal relationships intervene to undermine formalistic, purely merit-based, approaches to open recruitment. Although in the main we are reporting here on networks developed during and post-doctoral research, it is important to remember that for many researchers, especially in the SSH field, research does not commence at doctoral stage but often before that with researchers often spending years as pre-doctoral research assistants. Networks at this early career stage, perhaps during their Masters research, play an important role in accessing doctoral opportunities (funding and supervisors):

> *I really benefited from this project; first I got funded to complete my PhD studies, secondly I discussed many chapters and papers at workshops organized by the project; and I grabbed a lot of experiences in terms of research methodology building, work practices related to diverse human science domains* [FR02].

> *[Interviewer: Your current position you got through your links you had in the university, right?] Yeah, exactly and then all my other consultancy work I've done, sort of partly, because of the fact that I'm doing Ph.D. Partly through contacts that I made at conferences and partly through just my own sort of going out and networking* [CH05].

Although the respondent in the following case starts by suggesting his position was gained through an external advert (in keeping with the principles of open recruitment), he goes to explain the role that networks played:

> *[Interviewer: How did you find out about this position?] I saw it in the newspaper. [Interviewer: It was not related to your personal networks?] No, nothing at all. I saw it actually; I was looking at the job offers on the website of the Swiss Confederation. They have a central website where they list all the jobs available in the Swiss government and it was listed there. And I applied. I didn't know anybody there. But I had one advantage - after my studies in [x] I did an internship at the same Swiss Federal Office. And these were the same people who were offering the job in [another country]. So, they saw I had done an internship with them a few years back. And that was very much in my favour actually* [CH01].

> *Thanks to the mobility and these networks, I could present and publish my results, and also was recognized and called to be involved into projects, collaborative publication, and get temporary job and a position* [FR13].

*Networks for Dissemination and Publication (co-authorship etc.)*[12]

One of the most commonly cited outcomes associated with networks was research dissemination. Conferences and events play an important role both in generating networks themselves but also in providing opportunities for researchers to disseminate their research. Networking development and dissemination thus go hand in hand in a circular and mutually reinforcing process.

The next case illustrates this circularity well:

> *The main aim is to learn more and to share experiences by doing so, you become knowledgeable. When you are knowledgeable enough, you get promoted and you can enlarge your networks and disseminate your works through the world. If the mobility has been a success it may foster you to engage in future mobility maybe towards other countries in order to diverse and enrich or fill out your networks* [FR02].

> *[Networks and relationships] were really essential, to make my work known and to have access to empirical field* [FR10].

> *The results that were obtained during my doctorate were discussed in different forums organized by these scientific networks. It consisted of seminars and conferences. This has been very enriching for my career, it has allowed me to know both young and senior researchers from other countries and with someone I continued to have contact* [FR13].

*Publications*

Unsurprisingly, networks and relationships play a critical role in accessing opportunities for publication. And publications lie centre stage in terms of career entry and advancement. This may take the form of opportunities for co-authorship, relationships with journals or editors or peer reviewing papers.

> *Sometimes you have the opportunity to talk a little bit more with a person who might be interested in collaborating with you. For example, for writing an article together, things like that* [CH06].

> *I have contacted different people on occasions, trying to submit our papers to international colleagues where I think they might give an interesting feedback on this paper so [CH11].*

> *If you are not within a research project with someone then it's difficult to write a paper. I was to write a paper with someone who was in Vienna but now she is in UK. I think she moved to UK but finally she wrote the article with someone she was working with in a project. You know that's always… so I know a lot of people because I have been knowing them through conference, through contacts I made for research projects and something like that. But when you don't have really a real collaboration you don't write articles with them. You need to really work with someone if you want to write that article so that means that I don't have a lot of articles written with people. I am kind of, on my own, you know, writing articles and when you see that in science, you know, the real science* [CH12].

> *She gets me published* [ES09].

The importance of networks to dissemination also applies to people who have left academia:

> *My academic career has continued given that once a year I have to publish something. Firstly just in order to not lose contact with the university, in order to not lose the personal contact*

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[12] See section above on conferences.

*with the thesis director and then also just to stop from growing old, so I don't arrive home from work and say "hand me my slippers and dressing gown* [ES26].

*Networks for project generation (co-applicants – large grants etc.)*
Other respondents referred to the role that networks played in enabling them to become involved in grant applications and funded research – another factor critical to career progression:

> *I got a lot of help with people reading my proposal or the one at the legal department helped me to develop the form to obtain the consent of the parents. Yes, so I had a lot of, yes, a lot of people who helped me. And helped me to see what must be inside and the ethical things* [CH10].

> *We had submitted a joint project but it was not funded. Currently, we don't have a joined work but we exchange opinions over research* [CH17].

> *They were very important, for funding and for scientific cooperation* [FR23].

*Networks to access Teaching Opportunities*
A smaller group talked about the role that networks played in accessing teaching opportunities:

> *It's very important for the activities I have in my position because I have to organize teaching involving colleagues from other universities whether in Switzerland or from other European or non-European universities. So it's important to have this network* [CH17].

In the next example, the researcher refers to placement opportunities she has accessed via her networks for her students outside of the academic sector:

> *What I've done is to -- in the second or third year of biology, with these individual topics of the students. I proposed them to phone or send an email to different people and to make interviews and this was always a good experience. People I knew just once was very interested in answering, helping the students, answering to their questions about the topic so this was a good experience* [CH25].

*Accessing Research Populations and Data*
The role that networks play in supporting the research process perhaps through accessing data archives or populations for empirical research and also research training is perhaps less recognised but emerged as an important factor in the interviews. Respondents referred to the importance that relationships played more directly in facilitating access to research populations, libraries, archives and data:

> *The shorter trips, of a week or two, were focused on visiting libraries or archives. I went on research trips to Vienna, once for one month and once for two months, when I was gathering materials for my PhD. I also had a longer, one-year trip to Germany. I also travel to give presentations at conferences. So there are two types of mobility: project collaborations for longer or shorter stays, and conference invitations and presentations* [HU09].

> *For my thesis, it was very important to develop the network because to begin interviews, you had to be introduced by someone else, someone they know so that they felt they could trust you. And through the network I also got this position at the Chamber of Commerce for about a year. But I don't think it can really qualify as work. It was also as observation, means I could learn a little more about the dynamics, the events, the passage* [FR19].

In the next case the respondent talks of the role that networks played in gaining 'insider' knowledge and trust:

> *I always respond in a professional way; so that they are confident in me. They trust me a lot* [FR02].

In a number of cases, respondents referred specifically to the role that networks played in supporting their engagement in methodological developments and, broadly speaking, learning about methodology:

> *I've really benefited from this project; first I got fund to complete my PhD studies, secondly I discussed many chapters and papers at workshops organized by the project; and I grabbed a lot of experiences in terms of research methodology building, work practices related to diverse human science domains. I was quite interesting* [FR02].

> *[...] discovering others approaches* [FR13].

> *Working practices and most of all methodologies. That's quite difficult to grab if collaborations are limited in time and... scope* [IT01].

In some cases, researchers referred to the value of having contacts with people in institutions with good facilities and infrastructures:

> *They have quite good facilities there which help a lot in our own research, too* [HU05].

In the last example the researcher suggests that networks can have a morale raising effect:

> *I have my expenses paid and it raises my morale* [ES11].

The link between time, productivity and competitiveness is raised in many cases, with reference either to blocks of time off for maternity/parental leave, or shorter working hours (part-time work) and between time, and dislocation from networks (professional and personal). This links to the point above about 'critical transitions' from PhD to first post doc. The following Latvian woman is working in high level public policy position:

> *I never could orient myself for longer study or work travel abroad, because of the family. I have to [take care of my] children. May be that is an excuse, maybe I am not as smart. May be I would not [succeed] those programs and then I [use the] excuse that because I have my family it is not possible. We will never know! But it is clear, that I miss such kind of international experience a lot. To live somewhere, to engage in some activities. Or to study, or to work, in some kind of... some other place. Not only in Latvia [Interviewer: I can tell you it is no so! Women tend to think like that. An older professor told that to my adviser, when she said exactly the same thing. She said, 'All women say this']* [LV03].

### Concluding Comments

This report has highlighted the role that networks play in the careers, mobilities and impacts of doctoral graduates in the social sciences and humanities. The doctoral phase in research careers is critical to network formation. This has a long term impact on the career progression and opportunities of researchers. Networks are central to all forms of mobility at international, intersectoral and interdisciplinary level supporting the creation of boundary spanning roles.

Many of the networks developed at doctoral level continue to play an important role well into researchers' careers supporting access to employment opportunities, research collaborations, future engagement in doctoral supervision and dissemination activities. Building and maintaining effective networks does not necessarily require long stay mobilities. However opportunities to visit and keep relationships active and fresh are important.

Obstacles to the development or maintenance of networks include financial support for stays (including travel costs and time off work); the presence of family and caring responsibilities (especially for women), language issues and obstructive attitudes (territorialism and hierarchy). Perhaps f greatest importance however is exposure to networks in the first place. And doctoral supervisors have a key role to play in this respect.

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