Biographical research has often been characterised as a privileged means of analysing the interplay between individual choices on the one hand and non-individual "structures" on the other hand. I will start by describing how I see this interaction and then move on to the main theme of my chapter, i.e. to distinguishing between three levels of biography and discussing the specific contribution of each of them to the biographical enterprise. These levels are set biography (prosopography), group biography and individual biography. I will also say a few words about collective biography, which is often – and in my view confusingly

1 An earlier version of this article was published in Finnish as 'Tasohypelyä. Varhaiset suomalaiset lääkärinaiset ja biografinen tutkimuksen monimuotoisuus' (Hakosalo 2014a).

2 Scholars have conceptualised this key question using different terms. Daniel Bertaux speaks about 'the relationship between individual and collective praxis and socio-historical change', Bertaux 1981, 6; Jane Martin talks about the points of intersection between agency and social structures, Martin 2003, 219–232; while Lorraine Daston and Otto Sibum are interested in the way that the 'scientific persona' is formed at the intersection of 'cultural categories' and 'individual life courses', Daston and Sibum 2003, 2–3. See also Nasaw 2009, 576.
— equated with set and / or group biography. As soon as researchers leave the relatively safe ground of individual biography, or biography proper, definitions tend to become unstable. However, it seems to me both possible and useful to distinguish between these forms of biography heuristically. Of course, it is no less possible to practice them side by side, even within a single study.

The examples that I refer to in this chapter are mostly drawn from the history of science. This solution is motivated by my own background in this field, but also by the fact that scientific biography does not otherwise get much exposure in this volume. In exemplifying concrete methodological steps and choices, I refer to a research project of mine that dealt with early Finnish (and Swedish) female physicians, who trained during the last decades of the nineteenth and first decades of the twentieth century. Only a small minority of them engaged in research, and the study was therefore a professional, at least as much as a scientific, biography. The key concepts of the study were medical knowledge, professional and scientific power and gender. In the course of the project, I found – partly to my own surprise – that the biographical approach was a highly useful way of tackling these issues.

**Horizon of possibilities**

In conceptualising the interaction between an actor and historical circumstances, between individuals and structures, I relied on the notion

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3 On the use of biographical methods in history of science, see, e.g. Söderqvist 2007; Shortland and Yeo 1996; Kragh 1991, 174–196. Some science history journals have published theme issues on biography (e.g. *Science in Context* 16/2003, 1–2). Judging by the number of calls for papers to science history conferences or conference sessions that focus on biographical research, we are likely to have some more edited volumes on the topic in the near future.

4 The overall project was called *Exclusive Treatment: The First Generations of Finnish Medical Women*, and the results have so far been discussed in, e.g., Hakosalo 2012a, 2012b, 2014a, 2014b, 2014c, 2015a, 2015b, 2015c and 2015d.
of "horizon of possibilities". The notion refers to the range of possibilities that an actor has, de jure and de facto, at a specific point in time. A horizon of possibilities is a highly historical phenomenon, susceptible to constant change. It is changeable in at least three respects. First, what is and what is not possible for an individual differs from one historical context to another. Jane Austen could not buy a car, but she could take a diligence from Bath to London. I can do the former but not the latter. Such restrictions and possibilities, the kind that affect everyone living in a certain culture at a given time, are often so obvious that they are not articulated in biographical research. Secondly, different (groups of) people living in the same historical context face different horizons of possibilities. The range and outlook of the horizon depends, for instance, on age, social group, gender and language. Jane Austen could not inherit her father's landed property, but her brother could. Third, an individual's horizon of possibilities changes in the course of her lifetime, as she moves from one phase and age-specific set of circumstances to another. A child's potential sphere of action differs from that of an adult, and the options available to a middle-aged person differ from those available to an octogenarian. In modern societies, formal degree education has been one way in which people have consciously tried to expand their horizon of possibilities. This is also what the women in my research set did.

An individual is typically aware of only part of the possibilities open to her, and will try to realise an even smaller part. Jane Austen did not make use of the possibility of marriage, but she did realise the much less obvious possibility of writing and publishing novels. Biographers have, understandably, been particularly interested in people like her, i.e. in people who make choices that are atypical of their time, social group and / or sex, and, by so doing, sometimes also expand the horizon of possibilities of those coming after them.

The concept of horizon of possibility had the added benefit of being compatible with the basic definition of power that I relied on. According to this definition, we can speak about a power relationship between indi-

\footnote{The term is used in literary studies, but in a different meaning, viz. to describe all the interpretative possibilities involved in the reception of a literary product.}
viduals (or groups) $a$ and $b$, if the actions of $a$ reorder the set of possible actions of $b$\textsuperscript{6}. Thus, a person who significantly and effectively shapes another person's horizon of possibilities also exerts power over her. In addition to individuals intentionally shaping each other's range of possible actions, I also found it necessary to take into account mechanisms of power, that is, the kind of relatively stable practices that clearly had the potential to 'reorder the set of possible actions' of the women of my set but that could not be traced back to any specific individual(s). Professional and particularly the academic culture were and are replete with such mechanisms.

Biographical research does not only ask 'what' but also 'why'. Studying lives, you do not only chart actual and realised possibilities; you also want to know why some possibilities were realised in the lives of some people and other possibilities were left unrealised. The three levels of biographical study shed light on this basic issue from slightly different, complementary points of view.

'A collection of elements' – on set biographical research

I will talk about "set biography" rather than, and instead of, "prosopography"\textsuperscript{7}. Not only is the former less painful to pronounce but it is also well-suited for the purpose as far as content goes: the mathematical definition of a set can be used as the starting point of set biography. According to Georg Cantor's classic definition, 'a set is a collection of elements', or distinguishable objects. As we may (or may not) remember from school mathematics, the objects in a set are called members or elements. The members of the set should be distinct and well-defined. A set can be described either by listing each element or by naming the properties that the elements share.

\textsuperscript{6} Kusch 1991, 122.

\textsuperscript{7} On various definitions of prosopography, see Keats-Rohan 2004; Uotinen 2014, 243–244. On prosopography in the history of science, see Kragh 1987, 174–181.

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Similarly, the set biographical exercise begins with the description of
the research set. In set biography, the 'elements' are human beings. The
researcher defines one or more properties that function as the selective
principles. For instance, the members of my index set shared two basic
properties: they were women and they registered at the Medical Faculty
of the Imperial Alexander’s University (later the University of Helsinki)
between the beginning of 1888 and the end of 1917.

Sometimes the description of a biographical set is in itself a major
undertaking. With sporadic source material and other complications, it
can be a challenge to ascertain which historical actors genuinely belong
to the set, and to make sure that they do not appear there more than
once. My research set was finite, relatively small and relatively easy to
describe, thanks to the meticulous Finnish university bureaucrats and
the cultural convention according to which it was rude to refer to women
by surname only. The process of identification did present some minor
complications, however. For instance, women's surnames changed fairly
often. Changes were occasioned by marriages and by the replacement
of Swedish surnames with Finnish ones, which was common in early
twentieth-century Finland. The identification of the elements of the set
was facilitated by the fact that both Finnish and Swedish first names are
usually clearly gendered. However, I would not have assumed the stu-
dent named 'Venus' was a man, had his second name not been 'Ludvig'.

The second quality that characterised the members of my index set
was that they enrolled at the Medical Faculty of Alexander's Univer-
sity between 1888, which is when the first regular female students were
registered, and the end of 1917, when Finland became independent. The
set thus described had 85 members. Since the Medical Faculty was the
only medical school in Finland until 1943, the set included all women
who studied medicine during this period, including those who did not
graduate. Even in Sweden, where there were three medical schools, it
would have been much more difficult to identify all female medical stu-
dents, the drop-outs included. In the case of Great Britain or the United
States, the enumeration of the members of the set would probably have
been impossible, at least for a single researcher. 70 of the 85 women
in my index set graduated as licentiates of medicine (the basic medical
degree in Finland), the last ones in 1929. During the same period, 976
men began medical studies. They constituted one reference group in my study. Another reference group was formed by the 175 women who registered as medical students at the Karolinska Institutet in Stockholm, Sweden, between 1888 and 1917.

With the limits of the set thus drawn, I could move to the second phase of set biography and pose a series of questions to its members with the purpose of collecting data that was large and uniform enough to allow trends and patterns to be distinguished. I was interested, among other things, in the cultural, social and economic capital that the members of the set had on entering the university (as indicated by father’s occupation and social status, language, place of residence and school); their study paths (as marked by the length of their studies, their internships at various clinics, and special research assignments); their position(s) within the medical field after graduation (as indicated by specialty, sector, place of residence, place in professional hierarchy, length of career); their contribution to medical discourse (as indicated by the number of their scientific and popular publications); and their share in professional and scientific power (as indicated by various gatekeeper positions at the university, in state medical administration and in medical journals and societies). I was also interested in their extra-professional life choices and preferences: family, religion, and major non-professional preoccupations. Information about these matters could be found in the university and faculty student rolls, in the professional register and in the medical register of the National Board of Health. Complementary sources of information included the proceedings of the council of the Medical Faculty as well as documents produced by various hospitals, the Medical Association and the two national medical societies. The data should be as uniform and comprehensive as possible: questions that cannot be answered for all members of the set fall, strictly speaking, outside the set biographical exercise.

Where does the value of set biographical study lie from the point of view of biographical research in general? What does it bring to light that would otherwise be likely to remain unseen? First, merely pointing out the existence of a set can sometimes have scholarly and / or political significance. By describing a set a study can make visible a group of people that has, for one reason or another, not been seen before. To
some extent, this is true also for my set. To be sure, there are some well-known individuals in the set, but early medical women had seldom if ever been seen as a group. In Finland, women’s medical studies were not discussed, let alone debated, in the newspapers, within the Medical Faculty or the Academic Senate, or in medical journals⁸. Neither do women physicians emerge as a distinct group in the historical accounts of medical societies or in the memoirs of male physicians. This ‘invisibility’ partly resulted from a conscious strategy adopted by the women physicians. They strove towards seamless professional integration and were horrified by countries (such as Russia) where ‘lady physicians’ were a distinct professional category. They sought to advance this strategic goal by carefully avoiding anything that might set them apart. (Figure

⁸ The Medical Society (Finska Läkaresällskapet) did discuss women’s medical education once (1873) and the regulations concerning women’s medical work also once (1899). Förhandlingar 1875; Förhandlingar 1900.)
1) In fact, you can still meet people in Finland who think that it is morally and politically questionable to draw attention to a quality as irrelevant, from the point of view of professional competence, as gender by coupling the word ‘female’ with the word ‘physician’.

Secondly, the size of a set can sometimes be an interesting result. Elina Sana made headlines in 2003 by disclosing the number of Jews and prisoners of war that Finland turned over to Nazi Germany during the Second World War. The project ‘Finnish war mortalities 1914–22’ (Suomen sotasurmat 1914–22) changed our view about this historical period, although the database that was the main outcome of the project contains nothing more than the number of people killed during this period, their names and their causes of death. Counting early female physicians did not present any major surprises, but it did show that the proportion of women in the Finnish medical profession was relatively high already by the third decade of the twentieth century (8.9 per cent of doctors licenced in 1896–1929 were female) and the proportion of women dentists was internationally speaking very high. According to the dentists’ register of 1928, women constituted 58 per cent of all dentists active in the country, which might well be a world record. This fact, in turn, called into question the universality of the correlation that is often postulated between the “feminisation” of a profession on the one hand and the decrease in its income and social status on the other hand. Despite early “feminisation”, both the medical and the dental professions have enjoyed and continue to enjoy both high income and high social status.

Third, the set biographical approach sheds light on various life and career patterns, showing which patterns were common and typical and which were, in turn, uncommon and atypical. I found that the study paths of men and women in the index and references sets, respectively, differed only slightly, while the career patterns of the two sets differed significantly. During the first half of the twentieth century, the typical ‘male career’ clearly differed from the typical ‘female career’. Women

9 Sana 2003.
10 http://vesta.narc.fi/cgi-bin/db2www/sotasurmaetusivu/main
11 Lund 1928.
Figure 2. Göta Tingvald-Hannikainen (1896–1982), MD, wearing her "doctor's hat", i.e. the hat that those awarded the doctoral degree are entitled to wear in solemn academic occasions. Ten women of the set earned a doctorate, a necessary but not a sufficient condition for academic advancement. (Helsinki University Museum.)
physicians were overrepresented in private practice and in two rapidly growing low-status specialties, tuberculosis medicine and psychiatry.\textsuperscript{12} In Finland, almost all male doctors held at least one office. Public posts came with a steady salary and high social status. The highest status was attached to state posts. Women were excluded from the majority of these posts until 1926. Very few women were able to climb up the state medical hierarchy, including the university (Figure 2). Several women worked at the university hospital at the early stages of their career, but almost all of them left this path after 2 to 5 years, around the time it would have been time for them to start competing for permanent posts. Women's career paths also steered well clear of the main centres of professional and scientific power, namely, the National Board of Health, the boards of the national medical societies and the editorships of their journals, the leadership of the Medical Association and the Medical Faculty.\textsuperscript{13}

Pioneer prosopographers in the history of science were particularly interested in charting possible correlations between peaks of scientific productivity on the one hand and various social and ideological trends on the other hand. For instance, Robert Merton found a strong correlation between scientific productivity, religious puritanism and rise of the bourgeoisie in seventeenth-century England in his seminal \textit{Science, Technology and Society in Seventeenth Century England} (1938)\textsuperscript{14}. Other historians (and sociologists) of science have also employed set biography to explore the relationship between 'Protestant ethics and the spirit of capitalism'. Steven Shapin and Arnold Thackray showed that the thriving scientific culture of eighteenth century Britain required not only a small group of creative scientists but also a much larger 'audience' consisting of people who actively followed scientific research and supported it. Shapin and Thackray regarded set biography as a means to show how

\textsuperscript{12} Early medical women were well represented in tuberculosis medicine and psychiatry in Britain, too. Elston 1986.

\textsuperscript{13} The only exception is Laimi Leidenius (1877–1938), who was professor of obstetrics and gynaecology in 1930–38.

\textsuperscript{14} Merton 1938, 360–632.
closely science was connected to the rest of society, and ‘a sophisticated tool for establishing links between action and context’.15

I asked whether women physicians’ scientific output correlated with their academic success. Did they get their due? Or did the set include individuals like the anthropologist Hilma Granqvist (1890–1972), whose extensive, internationally acknowledged scientific production the university of Helsinki was not prepared to reward even with an adjunct professorship16, let alone a professorship proper? There were no ‘granqvists’ in my set, i.e. women whose academic advancement was starkly disproportionate to the quality and quantity of their productivity. However, one cannot conclude from this that the Medical Faculty was an islet of gender equality. In medicine, it was simply not possible to carry out major research projects – either clinical or scientific – without access to clinical or other resources, which in turn only came with an academic position. Therefore, an outstanding medical researcher unaffiliated with the university or other large hospital was by definition an impossibility.

By looking at the studies and careers of all physicians I could see the horizon of professional possibilities at its greatest extent. By looking at the much smaller group of women students and physicians I learned something about the ways in which gender affected the horizon of possibilities of female and male medical professionals at different stages of their studies and careers. However, there are many questions that set biographical approach could not answer: it could not tell me whether the gendered differences were here because women were not given the same opportunities as men, or because they chose differently than men. Neither could it explain why women were deprived of certain possibili-

15 Shapin and Thackray 1974, 3. See also Jones 2001, 325–346. In the history of medicine, set biographical approach has been applied by e.g. Crowther and Dupree 2007.

16 Finnish docenti is equivalent to Swedish docent and German Privatdozent but lacks a direct equivalent in the Anglo-American academic system. It is usually rendered in English as adjunct professor. A docentship is neither a degree nor a salaried post, but an honorary title that indicates that you have been evaluated and found qualified for teaching at the university level. In the normal course of things, adjunct professorship, in the Finnish context, was the intermediary stage between a doctorate and a chair.
ties or why they chose differently than men. But by bringing into light the major differences between the study and career patterns of men and women, the set biography indicated where I might usefully start looking for answers to these questions. In order to find answers, I needed to turn my attention from the set to groups and individuals.

No man is an island – the contribution of group biography to biographical research

I prefer to distinguish group biography both from set biography and from collective biography. Not all authors agree with me in this respect. The term prosopography is often used interchangeably with "collective biography"\(^{17}\), and some authors equate both with group biography\(^{18}\). Barbara Caine does not regard prosopography as a form of biography at all, while she is very keen on group biography, which she defines as a subspecies of collective biography\(^ {19}\). As I see it, group biography is the kind of biography that focuses on a restricted, usually smallish group of people, who formed a group already in their own and / or their contemporaries' eyes. A group is not primarily defined by a small number of shared qualities, like a set, but rather on the basis of the relations between its members. A group is formed by people who were related to each other and who influenced each other's choices and, in the case of long-standing groups and relations, also each other's personalities. Indeed, a group biographer is particularly interested in these relationships and influences. A pair biography of two individuals who interacted with each other and influenced each other's choices (i.e. reordered each other's "horizon of possibilities") would then be a subclass of group biography. Such pairs typically include spouses and siblings, as well as parent-child and teacher-student pairs. An example from my own study are Elin and Robert Elmgren, sister and brother, who graduated as licen-

\(^{17}\) E.g. Bruneau 1994, 65, 67.
\(^{19}\) Caine 2010, 48, 57.
ties of medicine within a few months in 1899–1900. By investigating their lives side by side, I was able to analyse the impact of gender in the making of a medical career in early 20th-century Finland.20

With ‘collective biography’ I refer to the kind of research that deals with parallel lives that do not (necessarily) intersect. The targets of a collective biography need not have had any mutual relationship at all. If there were some connections, the biographer is not primarily concerned with them. A biographical study on, say, the Westermark school would be likely to be a group biography, while Suomen professorit 1640–2007 [Finnish professors 1640–2007] is a typical collective biography. A group biography is like a group portrait: a single, integrated work of art, where the way each individual is portrayed influences both the overall composition and the way that the other members of the group are depicted. A collective biography is, rather, like a room – or perhaps a long gallery – whose walls are adorned by separate portraits of individuals (cf. national biographies). Each portrait stays within its own frame and may well differ from its neighbours in age and style. Typically, however, the subjects are portrayed rather stereotypically, from the same angle, with the better side showing. A parallel biography of two people who did not exert any significant influence on each other would then be a subclass of collective biography.

Beginning from the 1980s, many – perhaps most – group biographies have been written by women on women. The protagonists have been linked sometimes by blood, sometimes by other things, such as a shared political goal.21 (An interesting question that cannot be tackled here is why the role of groups and networks tend to get emphasised in the case of women.) In the history of science, group biographies have been written on research schools and groups, on couples and networks.22 I do not know of genuine group biographies of women scientists, perhaps because all-female research groups have been exceedingly rare, but there are plenty of collective biographies on women scientists. My own

20 Hakosalo 2015b.
21 Sibling biographies have been written by, among others, Caine 1986; Leskelä-Kärki 2006. Florin 2006 and Bosch and Kloosterman 1990 have focused on women's suffrage activists' groups and networks.
22 Pair biographies include e.g. Pycior et al. 1995 and Berg et al. 2011.
research on early medical women included elements of group biography: I distinguished within my larger set some smaller groups, whose interaction was particularly intensive and long-lasting. Their letters – typical source material for group biographies – allowed me to look deep into their relationships and forms of interaction.

What is the signature contribution of group biography to biographical research at large? First, group biography can be useful in exploring the historicity and changeability of various forms of human relationships. For instance, the nature of the marital relationship has changed over time, as have sibling and parental relationships. Biographies of groups of professionals can shed light on changing collegial relationships. Group biography provides a way to look into these relationships in action, in different historical contexts. Secondly, group biography can tell us how and why groups were formed, what kept them together and what caused them to dissolve. Why, for instance, did a research group or school emerge where and when it did and take its specific form? What tied the members of a political clique together? What eventually broke it down? Power and emotions – and, in the case of scientific biography, knowledge – are often central themes in group biography.

My own material showed, for instance, the impact of generational change on group dynamics. The smaller and the more distinct minority the women were at the university, the better gender sufficed in bringing and keeping them together. The more numerous the women students, the more heavily their group formation depended on other things too. During the first generation of women students (those who started at the university in 1885–95), gender was enough to bond women together. They formed a semi-official grouping that proved highly significant for many of its members both during their studies and afterwards. This group was first known simply as ‘de kvinnliga’ (the female students), and then, when a new and in some respects different student generation had entered the university, as ‘de gamla kvinnliga’ (the old female students). The group included women from different faculties, from both language groups (although the language they used among themselves was self-evidently Swedish at this point), from different social classes and from different parts of the country. The unofficial but unquestio-
Figure 3. The core group of 'de kvinnliga' during the academic year 1887–1888. Karolina Eskelin is standing in the back, second from the right. (Helsinki University Museum.)
ned leader of the group was a medical student, Karolina Eskelin (1867–
1936). (Figure 3)

The second generation consisted of the women who matriculated
at the university between 1895 and 1905. The number of female stu-
dents was on the rise, and medical students now tended to seek and find
their friends within the medical faculty. One such group of life-long
friends was formed by Viva Lagerborg (1871–1941), Anna Wikander
(1873–1938) and Eva Piispanen (1877–1950). They were all women,
and majored in medicine, but differed from each other with regard to
social, linguistic and regional background. (Figure 4) The group for-
otation of the third generation of female medical students (matriculated
1905–1915) was more socially selective. Friendships tended to develop
between women who shared similar social and ideological backgrounds.
For instance, Selma Rainio (1873–1939), Laimi Leidenius (1877–1938)
and Helmi Heikinheimo (1879–1968) had all grown up in rural parson-
gages in inner Finland, surrounded by a host of siblings. They were all
deeply religious and held similar political views.

What held a group together, sometimes for decades? Sometimes the
bond was constituted by shared interests and goals. The Swedish suffra-
gists that Christina Florin studied in her book Kvinnor får röst (2006)
initially shared a political goal, but, as the struggle for the vote dragged
on, they came to share many other things as well. In my case study,
the letters of medical women contained a lot of references to the things
that contributed to the stability of their groups and networks: They
exchanged information (on all matters medical, as well as on patients
and nurses) and drug prescriptions; lent money to and borrowed money
from each other; guaranteed each other’s loans; treated each other and
each other’s family members, usually for free; travelled together on
business and for pleasure. However, group cohesion did not spring only
from carefully balanced gift exchange23 or shared interests but also from
strong emotional experiences that often dated back to their student and
sometimes even to school years.

23 On the concept of gift exchange in the study of scientific networks, see Vilén
2013.
Figure 4. Viva Lagerborg, Eva Piispanen and Anna Wikander often travelled together, both for business and for pleasure. In 1913, they had their picture taken in Berlin. (Rolf Lagerborg’s Archive. The Manuscript Collection of the Åbo Akademi University Library, Turku.)

Being a member of a group can have an immediate and profound impact on an individual’s horizon of possibilities. A membership can, by itself, open up some possibilities and close others. But it can also exert indirect influence: being a member of a group can explain why a person pursues one possibility and rejects another one. Family often exerts crucial influence on an individual’s career choices, especially so in the case of women. During the first half of the century, having children almost invariably made a woman physician give up full-time work and move either to part-time practice or to a part-time office, for instance to the office of school physician. However, female physicians, unlike teachers and nurses, seldom gave up work altogether when they married and had children. Not only family members but also friends and colleagues often influenced an individual’s career choices. For instance, it was hardly a coincidence that all members of ‘the Lagerborg group’ opted for tuberculosis medicine.
Being part of a group can explain ruptures and unexpected turns in a career path but also account for continuity and perseverance. In the case of early medical women, friends and colleagues were crucial in compensating for the lack of systematic refresher education, supervision and mentoring, which was one of the major problems facing an early 20th-century Finnish physician. Members of a group helped each other to keep up with new medical developments. They provided information on new forms of treatment, offered consultation and shared material resources, e.g. instruments. They also offered each other advice and psychological support, akin to present-day work supervision, thereby alleviating the loneliness and psychological strain that was part of medical work.

One question that often comes up in scientific and professional biographies is the significance of group membership for scientific and professional success. Study of scientific schools and research teams is interesting largely because scientists have, as a group, achieved something that none of them could have achieved alone. In my case study, the impact of women’s own groups and networks on professional success was weak and indirect. Women did get support and sympathy from each other, and sometimes work opportunities, too, but female groups and networks were too weak to effectively assist their members up the professional ladder. As Ulla Vuorela noted when she studied Hilma Granqvist’s career, even strong all-female social networks could not compensate for the lack of male networks in the professional context.24

To recapitulate, the core contribution of the group biographical approach is that it allows us to study the interaction between individuals and to explore the implications of this interaction in the members’ lives. It has the capacity to show the profound impact of long-term, significant relationships on the choices and personality of an individual. ‘No man is an island’, and a woman even less so.

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24 Vuorela 2011.
Individual biography in the study of gender, knowledge and power

My research project on early medical women contained streaks of individual biography: I followed some members of the set for the whole or much of their lives. I would have liked to choose women whose career patterns were in some way exceptionally interesting. In practice, however, the choice was dictated by what Christina Florin once called the 'thick file principle', i.e. fell on those women who had happened to leave major collections of source material in public archives. There were half a dozen of them, which is not much in a set of 85 women. This is probably not a coincidence. Mineke Bosch encountered a similar dearth of source material when she studied women of science. She notes: 'As a historian of women, gender, and science, I have often despaired at the lack of personal archives of women scientists or higher-educated professional women. This rather systematic policy of erasure is in sharp contrast to the way in which suffrage feminists orchestrated their memoirs.'

One consequence of moving from sets and groups to individuals is a wider view on agency. In the set biographical analysis, many of the women physicians seemed curiously passive. They did not hold any offices or publish any research, and there is no information on their practice. However, ego-documents showed that many of them were in fact very active, but in ways and areas that left little or no trace in official records. Some of them dedicated much of their time to their families and households and practiced medicine part-time, while others were active in various societies and associations. The line that separated voluntary from salaried work was sometimes blurred, for instance when a physician did medical work for and within various organisations.

Source material related to specific individuals also gave me opportunities to study the grass-root experience of medical work. In early twen-

25 Bosch 2009, 37, note 55.
26 "Agency" and "experience" have been referred to as the intersection of structures and individual choices. On the concept of agency as an intermediator between social change and personal history, see Heintz and Krüger 2001, 41. According to Ville Kivimäki, 'the concept of experience can be understood as a point of intersection between the social structures and the subject, between the objective and the subjective reality' (Kivimäki 2006, 4.)
tieth-century Finland medical work was tangible and down-to-earth. It often involved physical strain and exertion, required artisanal skill and the use of the five senses. During the interwar period, when the majority of the women of the index set were professionally active, diagnostic and therapeutic methods were crude if not primitive by present standards. Specialisation was taking its first steps, and the hospital network was not particularly dense. Communal physicians, the most numerous section of the profession, were jacks of all medical trades: they prescribed medicines, extracted teeth, operated for hernia and of course assisted in childbirths. The hands-on practical realities of medical work came to the fore in letters, especially in those written to colleagues.

Above all, however, the biographical approach contributed to the problematics of gender and power by allowing long-term observation of individual lives. Both the range of possibilities and the actual choices made by an individual are strongly influenced by her previous choices and experiences. I wondered, for example, why Anni Seppänen (1895–1979), who had taught for years at a university clinic and published a substantial amount of research never applied for an adjunct professorship. The fact that I had followed her life course from her school years to adulthood through her diaries and letters made it easier for me to decide how much weight I should place on her character and upbringing, how much on the way she had been socialised to the female role by her family and school, how much on her more immediate personal goals and wishes, how much on overt and covert mechanisms of power and segregation and how much on coincidental factors.

Indeed, it counts as one of the central observations of my study that the gender inequality that was so obvious on a statistical level in the early twentieth-century Finnish academic world was built on the accumulated effects of small, often overlooked mechanisms of segregation rather than on grand discriminatory gestures or open exclusion. It would not have been possible to notice these long-term accumulations and their effects if I had only studied sets or groups of women and not also followed some individuals' lives and careers at close range for decades.
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