

Academic Elites in Switzerland 1910 – 2000: between Autonomy and Power

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1. Summary of the Research Plan

This research project aims to understand the evolution of the Swiss academic elites in the 20th century. During this period the modern university became increasingly autonomous, grew in terms of number of students and staff, specialised more and more in research, came under managerialist pressures, experienced a (re)-internationalisation and saw its staff being feminized. These changes have a) profoundly modified the power resources and the structure *within* the academic field and b) altered its *relations to its environment* such as the political, the administrative or the economic field. Informed by these developments our project will address the two following research questions:

- 1) We seek to elucidate the historical evolution of the resources (or capitals) typically owned by the academic elite, the processes of acquisition of these capitals and their distribution within the academic field. What types and combinations of scientific, institutional or social capital do the Swiss academic elites hold at different moments in time? Through which processes of inheritance, educational trajectories and professional careers do they acquire these resources? And how are these resources distributed among the disciplines within the academic field?
- 2) What are the relations of academic elites to other fields (political, economic, and administrative) and how have these relations evolved during the 20th century? Our aim is to understand which fractions of the academic field develop linkages to other fields of power, which forms of interaction (networks, multi-positionality and field-connecting careers) these groups are using and what these connections mean for the autonomy of the academic field.

To address these two points of inquiry we will draw on a historical sample of Swiss university professors. Building on an already existing data base on economic, political and administrative elites, at five benchmarks (1910, 1937, 1957, 1980 and 2000) we will collect data on relevant capitals of all full professors: scientific capital, institutional capital, social capital, cosmopolitan capital, economic capital and cultural capital. On a first level this will allow us to identify the general evolution of relevant resources and their distribution within the field of academic elites. On a second level we will collect more detailed data for three power related disciplines: engineering, law and economics. These two data sets will be integrated into the above-mentioned data base on Swiss elites and analysed by an innovative combination of methods: a network analysis of participation in relevant meeting places (extra-parliamentary commissions, boards of directors, economic interest associations) will allow us to study the formal links of academic disciplines to politics, business and the administration. Sequence analysis will be used to scrutinize academic careers, the connections to other fields of power these careers create and the varying degree of internationality of academic trajectories. Finally multiple correspondence analysis will allow us to understand the distribution of capitals and draw a picture of the structures and fractions of the academic field.

For the first time in Switzerland, this project focussing on academic elites will overcome the particularistic studies of single universities or scientific disciplines. Second, its coverage of the whole 20th century will allow us to understand the evolution of the academic elite in the “long durée” and overcome the limitations of narrowly focused case studies. Third, we will be able to link the academic elite to leading actors in the political, administrative and economic sphere and thus to better contextualise the development of this group. Finally, we will contribute to the advancement of elite research through an interdisciplinary approach and an innovative combination of methods.

2. Research plan

2.1. Current State of Research in the Field

a) *Previous Insights that Provided the Starting Points for the Planned Study*

The literature on academic elites in a narrow sense is not abundant and rather heterogeneous. Even though he does not use the term “elite”, Pierre Bourdieu’s “Homo Academicus” (1984) is undoubtedly one of the key studies on the issue. In this book, Bourdieu analyses the tensions and developments in the late 1960s of the French higher education system. Critical for us is his development of the idea of an academic field with its specific forms of capitals, hierarchical structures and fractions (or poles). Bourdieu argued that the academic field is structured between a scientific pole, which is relatively detached from extra-academic influence (faculty of natural sciences) and an institutional pole, which is close to political, administrative and economic power (faculty of law and medicine). He then concentrates on the faculty of philosophy and social sciences which is typically situated between those two poles and therefore particularly suited to understand the relationship between “scientific capital” (publications, scientific prizes or PhD supervisions) and “institutional capital” (such as Dean and Rector duties, committees of academic associations). These two, often mutually exclusive forms of capitals, function as the main opposition in the field and imply a different relationship to extra-academic fields (Bourdieu, 1984). Other authors also discussed academic elites, often however in a different sense: Merton’s work on the Matthew effect – the asymmetric allocation of research funds according to prestige (Merton, 1968) - and its influence on the hierarchisation of academia inspired for example Zuckerman’s classic study (1977) on the American Nobel Prize laureates and the stratification of American science. Besides this rather qualitative research tradition, there is a whole string of bibliometric research on “invisible colleges” (Price, 1986; Mullins, 1985). Invisible colleges are informal groups of mutually interacting, and productive scientists from geographically distant places who may establish themselves as elite groups within the academic field (Zuccula, 2006). The question here is how certain academics manage, through informal communication, to create a scientific elite around a specific specialisation. More recently, the formation of academic elites has been discussed in the context of the increasing managerialisation of the academic system and its new criteria of excellence (Münch, 2007). Researchers analysed the distribution of research funds, publications or citations as a result of new evaluation procedures at universities (Larivière, 2010). These reconfigurations of the academic field by rankings, external funds or competitive call for proposals could lead to major reconfigurations of academic elites.

In addition to these approaches which explicitly discuss academic elites, two other strands of literature are important. The *literature on elites in general* and the *literature on university governance, higher education and the academic professions* broaden the issue of academic elites and place an emphasis on points that are not at the heart of the afore-mentioned literature on academic elites.

1. The recent elite literature, firstly, sought to explain the mechanisms of *elite recruitment and reproduction*. The central question of this approach addresses the socialisation and the educational trajectories of future elites, for example the attendance of public schools or elite universities (Scott, 1991 for Britain; Bourdieu, 1989 for France) or the choice of a specific curriculum (Hartmann, 2002 for Germany; Rothböck et al., 1997 for Switzerland). Other scholars have also been interested in the (comparative) social openness of different elite groups and could for instance show that political elites often are more open than business elites (Hartmann, 2007 comparatively;

Hjellebrekke et al., 2007 for Norway; for the Swiss case, see: Rothböck et al., 1997). *Elite coordination* became the second central issue of elite research, particularly in research on economic elites. Scholars identified networks of interlocking directorates between firms and explained the role of specific firms (namely banks) and cliques within these networks, some of which seem to monopolise positions of power (Mills, 1956; Useem, 1984). Different hypotheses about the functionality of these networks have been examined – control and monitoring, spread of information and formation of a class identity (Mizruchi, 1996; Carroll, 2010). International comparison revealed that the density and range of these networks varied considerably with respect to the capitalist regime in place (Stokman et al., 1984).

2. A second important strand of literature focuses on higher education, university governance and the academic professions. The institutional part of this approach analyses the transformation of higher education system (see among others Clark 1997; Altbach 2000; Goedegebure et al. 1994; Braun & Merrien 1999). Clark's conceptual model (1983) of the triangle of authority, based on the coordination between state, market and academic oligarchy, has been very influential to inspire studies on the transformation of higher education systems. In addition, certain studies more explicitly focus on the actors within this institutional architecture and look at professors, and more generally at academics, from a perspective of sociology of professions. These scholars examine the social origin and the demographic composition of this group, the academic work (and its variations according to status, discipline or institution) or academic careers and their mechanisms (Musselin, 2008; Schuster & Finkelstein, 2006)

When it comes to the Swiss academic field, one can first find several rich monographic historical studies on the history of all major universities, which sometimes includes biographical dictionaries on professors: Stadler 1983 (University of Zurich), Scandola et al. 1984a and b (University of Berne), Marcacci et al. 1987 and Borgeaud et al. 1959 (University of Geneva), Delessert 1991; Tissot 1996 and Robert and Panese 2000 (University of Lausanne), Bonjour 1960, Staehelin 1960 and König 2010 (University of Basel), Ruffieux 1991 (University of Fribourg), Rebetez et al. 2002 (University of Neuchâtel), Burmeister 1998 (University of St.-Gallen), Gugerli et al. 2005 (Swiss Federal Institute of Technology Zurich), Cosandey 1999 (Swiss Federal Institute of Technology Lausanne). Other monographic studies have focused on the historical development of academic disciplines: Zürcher 1995 on sociology, Honegger et al. 2007 on the social and economic disciplines, Gottraux et al. 2001 on political science or Kley 2011 on public law. Second, in the domain of the sociology of Swiss higher education, one can find various publications dealing with the organisation of the academic field and its recent changes. This literature underscores the historically strong fragmentation and cantonal anchoring of Swiss universities. Since the beginning of the 1990s, the Swiss academic field underwent important reforms, which had no counterparts during the whole 20th century. Federal regulations and new incentives for a better national coordination have been reinforced in order to bring more coherence in the higher education system (Weber 1994, 1999; Perellon & Leresche 1999; Leresche et al. 2009, 2011). Other, partly related studies highlight the increasing importance of research in the academic field, for instance by focusing on the history of the Swiss National Science Foundation (Fleury & Joye, 2002; Joye, 2010). Last but not least, the issue of the gender relations within university, gendered careers and the feminization of academic professions has recently become an object of much studies and debates (Fassa & Kradolfer, 2010; Leemann et al., 2010)

b) In which Areas Research is Needed and why

While elite research generally neglects the academic field, the sociology of higher education and the academic professions focused its attention on the academic system and struggled to relate it to other social fields. As in Switzerland the elites from different fields were traditionally closely intertwined (Kriesi, 1980; Mach et al., 2011), it seems particularly necessary to refrain from a study that is essential and exclusively concentrated on the academic system. We need thus a study on the

relation of the academic field to other fields, such as politics, administration or business. These fields can at the same time serve as comparative cases of elite study and therefore deepen our understanding of the academic elites. It seems also crucial to relate a perspective focusing on institutional changes with an actor-centred approach that examines the origins, careers and networks of the academic elites. When we examine the literature available on the Swiss case, another fact stands out conspicuously: whereas we have at our disposal a fair number of monographic studies on particular universities or disciplines, we lack a systematic and comprehensive overview. What is more, most of these monographs celebrate anniversaries and thus struggle to embrace the whole 20th century with its crucial recent periods (characterised by the internationalisation, managerialisation and feminization). Therefore we need a historically long-ranging study, which includes a more convincing periodization that follows the historical changes rather than random anniversary celebrations. Finally, we will tackle the developments in this field with novel and innovative combination of methods which promise to shed a new light on these phenomena.

c) *Relevant Research Projects Currently Underway in Switzerland and Abroad*

In Switzerland there is currently a string of on-going projects on science and its organisation. Besides the project [“Universitäres Wissensmanagement”](#) by Prof. Maasen at the University of Basle, Swiss researchers are also prominently involved in two major European research projects as principal investigators: [“Re-Structuring Higher Education and Scientific Innovation \(RHESI\)”](#) (Prof. Braun, University of Lausanne) and [“The Academic Profession in Europe: Responses to Societal Challenges \(EUROAC\)”](#) (Dr. Goastellec, University of Lausanne; Dr. Lepori, University of Ticino). These projects are part of the European Science Foundation program on Higher Education (EUROHESC) and partly funded by the SNSF (Swiss National Science Foundation). They concentrate on the institutional changes of the most recent period and therefore, complementary to the planned project, provide background information on potential transformations of academic elites. Another group of projects examines the differentiation of disciplines and asks how they develop institutionally and culturally: Prof. Martina Merz at the university of Lucerne studies the [“Epistemic Practice, Social Organization and Scientific Culture of Nanoscale Research in Switzerland”](#), whereas Prof. Maasen is interested in the [“Epistemic, Socio-political and Institutional Formation of Research Fields”](#) in the case of Science and Technology Study. These studies focus on the recent emergence and development of single disciplines and thus complete the planned project.

Internationally, when it comes to the restructuring and internationalisation of the higher education system, besides the already mentioned projects [RHESI](#) (headed internationally by Prof. Schimank) and [EUROAC](#) (directed by Prof. Teichler) are also part of the EuroHESC program: [“Change in Networks, Higher Education and Knowledge Societies \(CINHEKS\)”](#) directed by Prof. Välimaa, and [“Transforming Universities in Europe \(TRUE\)”](#) headed by Prof. Bleiklie. A part from these projects focusing on recent institutional changes, there is an important French-led coordination effort on prosopographic university databases underway (Jean Hiernard et al., 2011: see pp. 29-37). Finally, to our knowledge two important elite studies do also include academic elites: first, the project *Elites in an Egalitarian Society* by Prof. Johs Hjellevrekke on the recruiting, circulation and reproduction of Norwegian elites, which relies on the excellent data from the Norwegian Power and Democracy Survey (Research Council of Norway, FRISAM 2009-2012; see also Hjellevrekke et al., 2007). Second, François Denord, Paul Lagneau-Ymonet and Sylvain Thine have recently published on the French case and include data on the professors at certain elite universities in their analysis (Denord et al., 2011). These two projects could serve as comparative cases for the planned project, particularly when it comes to the links between academic and political (or economic) elites.

2.2. Current State of our own Research

Felix Bühlmann (main applicant) is assistant professor at the Institute of Social Science at the University of Lausanne. He is a sociologist and both specialised in the study of career and in elite research. For his PhD he studied the careers of engineers and business economists and how they were affected by the economic crisis of the 1990s (Bühlmann, 2008; Bühlmann, 2011). In the domain of elite research he has worked on economic and political elites and the different forms of interactions between these two fields. Together with the co-applicants he has written a series of papers on economic and political elites that are published in major international journals (Mach et al. 2011; Bühlmann et al. 2012). Methodologically, he has acquired a solid knowledge in a series of “alternative” quantitative methods such as sequence analysis and multiple correspondence analysis. He has recently organised a workshop on multiple correspondence analysis in the framework of the “Programme doctoral romand en sociologie” and will in June 2012 co-organise an international exploratory conference on sequence analysis in Lausanne (with Dr. Philippe Blanchard and Dr. Jacques-Antoine Gauthier).

André Mach (1st co-applicant) has an education in political science and is Senior Lecturer (Maître d’enseignement et de recherche) in comparative political economy and Swiss politics at the Institute of Political and International Studies, University of Lausanne. His areas of specialization include Swiss politics, organized interests, Swiss elites, Swiss corporate governance, industrial relations, competition policy, and more generally the impact of globalization on national policies. He has published on these different topics in Swiss and international journals (Mach, 2002; Mach et al., 2011; Bühlmann et al., 2012; David et al., 2012). He recently directed, in collaboration with Thomas David, the four-year research project „[Les élites suisses au 20e siècle: un processus de différenciation inachevé?](#)” funded by the SNSF. One important output of this research project was a systematic database on Swiss economic, political and administrative elites during the 20th century (see: <http://www.unil.ch/elitessuisses>).

Thomas David (2nd co-applicant) is professor of International history at the University of Lausanne. In partnership with his fellow applicants, Thomas David has worked intensively on prosopography, network analysis and multiple correspondence analysis methods (David et al. 2009, David et al. 2012; Mach et al. 2011; Bühlmann et al. 2012). Thomas David is also involved on three projects dealing with transnational elites. First, he is currently participating in a French ANR project (2009-2013) directed by Prof. Christian Topalov (EHESS, Paris) and entitled « European philanthropy and social vulnerability (1880-1920) ». Second, he is a co-applicant of the SNSF Sinergia project « Patterns of transnational regulation: how networks and institutions shaped societies and markets throughout the 20th century » (2012-2015). This project aims to study transnational experts in the fields of insurance, social insurance and public health. Third, he will organize in August 2012 with Stéphanie Ginalska (UNIL) and Gerarda Westerhuis (University of Utrecht) an international conference on national and transnational interlocking directorates in Europe, the United States Latin America and Asia during the 20th Century. Finally, Thomas David is currently working, with Prof. Janick Schaufelbuehl (UNIL), on the history of the IMD. Thanks to new archives, they will shed a new light on this institution which plays an important role in the education of business leaders in Switzerland.

2.3 Detailed Research Plan

a) The Evolution of the Academic Field in the 20th Century: six General Trends and the Swiss Case

Before developing our two research questions we will briefly outline the historical evolution of the academic field. Schematically, we can distinguish six general trends that affected the academic field during the 20th century in general and the evolution of the academic elites’ profile in particular (Rüegg, 2004; 2010). On the basis of these trends, situated at different historical moments, we will be able to establish a tentative periodization of the development of Swiss universities in the 20th century:

1. The growing autonomy of the academic field
2. The numerical expansion of the academic field
3. The growing importance and funding of research
4. The re-internationalisation of staff and students
5. The advent of managerial forms of governance
6. The modest feminization of the academic staff

We will now enlarge upon these six historical trends, first in general and then applied to the Swiss case: 1. In his classical conceptualization of universities governance, Clark (1983) distinguished three forms of coordination: state, market and academic oligarchy (for a more recent conceptualization, see Braun 1999). As Berdahl (1990) emphasises, universities must constantly resolve the tension between autonomy and accountability towards their political and economic environment. Since the 19th century, universities, as distinctive social institutions, and academic elites have struggled to gain autonomy from external powers and to promote endogenous “academic” criteria for their own development (Rüegg, 2004). The quest for autonomy led to the formation of a new category of actors playing a central role in the governance of the field: the academic elite. This new group differentiated itself in the first part of the 20th century from other elite groups, followed a logic of professionalization and developed its own collective identity, its values and its recruitment procedures. 2. The transition from relatively small “elites institutions” to a “mass system” not only corroborated the internal differentiation of the academic elite. It also had a profound impact on the functioning of universities and their relations to their environment. Higher education became a central political issue, and was the subject of specific public policies and funding. As a consequence of massive investments in education and the post war expansion of the academic field, the professional situation of professors was improved through better remuneration and a consolidation of professor’s statute. 3. At the same time the post-war period coincided with a notable extension of research activities within university, often fuelled by the emergence or re-orientation of new agencies of coordination and funding of research (such as the research councils in the UK, the “Centre national de la recherche scientifique (CNRS)” in France or the “Deutsche Forschungsgemeinschaft (DFG)” in Germany). This turn might have reinforced the growing autonomy and professionalization of the academic elite. 4. Since the 1980s, the academic field, which in certain disciplines and at certain periods was already rather international, underwent a further thrust of internationalisation and came under the spell of a growing norm of internationality (Welch, 1997; Gingras, 2002). This again created power-shifts within the academic field between differentially internationalised disciplines, altered the relationship of academia to the (national-) state and brought about new forms of capital (such as for example “cosmopolitan capital”¹). 5. In the aftermath of the growing financial problems of welfare-states in the 1990s and the following managerial reforms, the university came under pressure for more marketization and managerial forms of governance (Clark 1998; Braun, 1999; Altbach, 2000). Often these reforms gave the universities more autonomy and the introduction of indicator based control systems may have led also to a transformation of the criteria of scientific excellence. 6. Finally, in most of the Western countries we can observe a “slow and selective feminization” (Musselin, 2008) of the academic profession and professorship ranks. This may be a hint of slowly changing career patterns and recruitment criteria and has most certainly an impact on the networks and careers of the academic elite. Traditional male networks may thus have changed or lost some of their previous importance.

These six general trends can also be identified for Switzerland – however a series of particularities must be taken into account: 1. The growing autonomy of the Swiss academic field has to be considered in the light of the strong decentralisation of the country. The major competencies in higher education policy are in the hands of the cantons, without, until recently, any federal legislation (except for the two Swiss Federal Institutes of Technology). This strong cantonal anchoring of universities

¹ Cosmopolitan in the academic context could be defined as experience abroad, international publications and participation in international association which provide a particular form of reputation (Welch, 1997; Gingras, 2002).

explains why their development was often related to regional economic or political considerations. As a consequence academic elites historically entertained close relations to local elites in other social spheres and the academic field remained for a long time dependent on the regional context. For example, until recently, the recruitment of professors in most universities was decided by the cantonal political authorities, remained weakly formalized and therefore favoured the predominance of extra-scientific criteria of appointment (Horvath, 1996). 2. Compared to Germany or France the growth of the numbers students and academic staff at Swiss Universities was not as pronounced and began also relatively late – rather in the late 1970s than in the 1960s as in other countries (Honegger et al., 2007). 3. The growing importance of research after the 2nd World War began with the creation in 1952 of the Swiss National Science Foundation and was corroborated by the establishment of new forms of research encouragement such as National Research Programs (from 1975 onwards) or National Centres of Competence in Research (from 2001 onwards) (Joye, 2010). Whereas in 1952 the SNSF spent only 2 million Swiss Francs on research, this amount rose to 140 million in 1980 and 377 million in 2001 (Fleury & Joye, 2002). 4. As in other countries the staff of Swiss universities became increasingly international from the 1980s on. However, already at the beginning of the 20th century, foreign professors were strongly present. In 1915, despite the local anchoring of universities underlined above, the proportion of foreign professors reached a proportion of 27% (Busino et al. 1991). Subsequently, the proportion of foreign professors followed a “U-curve” (on the ETHZ: Gugerli et al. 2005: 238; more generally: Busino et al., 1991): Between the 1920s until the 1970s – similarly to economic elites (Mach et al. 2011) – the professorship ranks underwent a process of “nationalisation”, which was only challenged by the 1970s and 1980s when their proportion began to grow again. More recently, the share of foreign professors was about 30% in 1990 and increased to 35% in 2000 and to 47% in 2010 (Swiss statistics, 2011). 5. From the early 1990s on, Switzerland was also part of countries which introduced managerial reforms (“New Public Management”) in order to face pressures for public expenditure cuts (Weber, 1999). These reforms followed a decentralised logic but in most cases ceded the universities more autonomy. However, whereas the universities became increasingly detached from political influence, they may have come under the increasing influence of the business world and its practices of governance (Weber, 1999). 6. The last period also witnessed a modest but noteworthy increase of the part of female professors at Swiss universities. Whereas in 1991 not even 5% of Swiss university professors were women, this proportion rose to 10% in 2000 and then 17% in 2010 (Swiss Statistics, 2011).

Based on these observations and the existing literature it is possible to distinguish schematically three phases in the evolution of the Swiss academic field. During a first period, until the mid-20th century, the development of universities was characterised by the importance of extra-academic, i.e political, religious and economic criteria. This meant that inherited capitals (family links, religious denomination) and links to other fields of power (politics, business) were important in order to accede to professorship ranks. A second phase, marked by the institutionalised promotion of research and the expansion of universities during the post-war growth period (1945-1980), can be defined as the “golden age of academic oligarchy”. In this phase the autonomy of universities and in fact the autonomy of professors reached its high point. The period from 1980 onward, finally, was characterised by increasing managerial pressures on universities, an increased internationalisation and a modest feminization.

b) Two Research Questions: Structure of the Field and Relations to other Spheres

Following the presentation of these six trends and the Swiss exemplification the major aim of our research project is to understand how these changes have affected the academic elites over time. For this purpose we aim to answer two interrelated research questions: 1) how have the capital endowment of academic elites and the structure of the academic field evolved throughout the 20th century? 2) how have the relations of academic elites to other social spheres changed over the same period? The analyses will be carried out on the basis of a systematic database on academic elites at five moments of the

20th century (1910, 1937, 1957, 1980 and 2000²) and innovative methodological strategies. Theoretically, we will rely on the conceptual toolbox of Bourdieu which proved to be particularly fertile to study phenomena of academic power and which can easily be adapted to the more recent period (Braun, 2001).

1) The Historical Evolution of Capital Endowment of Academic Elites and the Structure of the Academic Field

The first goal of our inquiry is to understand the historical evolution of the volume, the combination, the acquisition and the distribution of six types of capitals: scientific capital, institutional capital, social capital, cosmopolitan capital, economic capital and cultural capital³. For this purpose we will measure the endowment of Swiss university professors with these capitals over the 20th century. We will distinguish between inherited forms of capital and acquired forms of capital: whereas the first result from the social origin and birth (profession of father, sex, and religious denomination), the latter are acquired along the education curriculum and the career (educational credentials, acquired networks) (Bourdieu, 1984). To not only get a picture of the volume of these forms of capitals, but also of their distribution into typical configurations we will carry out an overall analysis of the Swiss academic elite. In Bourdieu's terms, a field is a relatively autonomous space endowed with a structure, rules, stakes, and capitals that engender strategic practices. The structures and rules of a field develop historically and impose themselves upon actors who are interested in "playing the game" (Bourdieu, 1989). In his analysis of the French academic field in the late 1960s Bourdieu (1984) showed that two types of capitals were particularly relevant when it came to the academic field: scientific capital and institutional capital.

Scientific capital embraces publications in prestigious journals or intellectually renowned collections, translation of books into other languages and recognition from fellow scientist, such as positions in committees of prestigious journals or in national academies. *Institutional capital* includes the occupation of position that are crucial for the reproduction of the discipline (PhD committees, nomination committees), prestigious positions in the university administration and or close connections to positions of power outside university (Bourdieu, 1984). Also in the Swiss academic field, the balance of these two types of capitals seems to be central. A key question of the planned project will therefore be how these two types of capitals are combined with each other, how they are acquired through education and career and how they are distributed in the academic field. Particularly the distribution of these capitals with respect to specific disciplines and universities will be of interest. For this purpose we will examine the whole space of all full professors, but also specifically look at three power related disciplines: economics/ business studies, law and engineering (Bühlmann, 2012). In line with the historical ambition of the project, we then seek to understand how the combination, acquisition and distribution of these two capitals changes over time. We can for instance assume that as a consequence of the growing autonomy of the academic field and the growing importance of research in the post-war period scientific capital has gained in legitimacy.

But other, at first sight less obvious types of capitals might have historically played a role. As mentioned above, the regional anchoring of Swiss universities has historically favoured the predominance of extra-academic considerations in the development of cantonal universities. Extra-academic resources were therefore potentially more important during the beginning of the 20th century. Different anecdotal evidence suggests that for example in the early 20th century, a high proportion of professors in Basel and Geneva stemmed from patrician families and formed actual dynasties of professors⁴.

² These benchmarks stem from our former studies on Swiss elites and will be used again to assure comparability of data. In general, they fit rather nicely our research design: whereas 1910 allows us to illustrate the phase prior to the nationalisation of the field, 1937 covers the first, 1957 and 1980 the second and 2000 the third phase of the above-mentioned periodization.

³ See below in the section "data collection" on the operationalization of these different capitals.

⁴ Horvath (1996: 149-50) for instance shows that at the University of Geneva patrician families such as the Martin supplied nine professors and eight rectors between 1850 and 1950 or that from other families, such as the Monnier stemmed three generations of chemistry professors during the same period. Similarly, in Basel and Bern various professors stem from local patrician families (for Basel: Bonjour 1960; Staehelin 1960; for Bern: Scandola 1984b: 233).

The recruitment procedures were very local and the socially inherited capital of foremost importance. Likewise, in the catholic canton of Fribourg, the Dominican order played in the early 20th century a crucial role in the appointment of new professors (Ruffieux, 1991). Finally, the development of the Federal Institute of Technology at Zürich was largely motivated by economic considerations which sought to promote the education of engineers. At the beginning of the 20th century, ETHZ professors often held leading positions in important companies (Gugerli et al., 2005: 99). In the recent period, the academic field has become more international; an experience abroad, international publications and participation in international association have become an increasingly important part of academic careers or even a precondition of a successful academic career (Welch 1997; Gingras, 2002). It is therefore key to examine how in a small country such as Switzerland “cosmopolitan capital” relates to other types of resources in the scientific field and how its increasing importance has modified the structure of the field.

In sum, concerning this first research question, and in relation to the afore-mentioned periodization, we can make the hypothesis that the importance of *inherited social capital* or *political and economic capital* has been progressively challenged during the 20th century by the increasing importance of scientific and institutional capitals through the promotion of research. Second, we posit that the more recent period has led to a further loss of importance of extra-academic social capital, as the traditional (male and national) networks have lost in density and “*cosmopolitan capital*” has increasingly gained in importance.

2) The Relations of Academic Elites to other Social Spheres

While the first research question aims at the structures within the academic field, the second one focuses on the relations of the academic elites to other social spheres. Compared to economic, political or administrative elites, academics were generally considered of secondary importance (Mills, 1956; Hartmann, 2002). As a consequence, we know comparatively little about how academic elites are connected to political, administrative or economic elites. In the Swiss context with its strong tradition of lay politics and a militia army, the relation of academic elites to other social spheres is particularly relevant (Mach et al., 2011). We will conceptualise the relations between elite fields with the notions of *interactional relations*, *multi-positionality*, and *field-connecting careers*.

We will first explore *interactional relations*, i.e. networks and meeting places of the academic and other elites. A large part of the elite literature considers these interactions as the most important elite coordination mechanism (Useem 1984; Mizruchi, 1996; Scott, 1990). It is during regular meetings that members of the elites exchange information, develop common strategies or build a common identity (Carroll, 2010). In Switzerland, besides interlocking directorates, the army, service clubs, extra-parliamentary commissions or boards of directors of large companies are examples of such meeting places (Mach et al., 2011). Applied to the academic elite, it will be interesting to see how the personal connections of the professors of different disciplines to the economic, administrative and political power change over time. According to our periodization we would expect that academia was closely intertwined with other societal spheres in the first part of the 20th century and then increased its autonomy due to its turn to research and more scientific standards. When it comes to disciplines, previous studies show that law, for a long period the central discipline for political, administrative and economic elites alike, has lost a part of its legitimacy (David et al., 2012). At the same time, with the increasing importance of managerialism we witness the rise of business studies and the growing significance of the University of St. Gall and other business schools for elite recruitment (Honegger et al., 2007; Dyllick et al., 2007; Mach et al., 2011). We thus posit that professors of economics/ business studies have reinforced their presence in extra-academic networks, whereas this presence has weakened for law professors. In addition, we will analyse if the recent internationalisation of the academic field or the modest feminization of the professorship have weakened these often national and on male-sociability based networks (army, service clubs). Both

tendencies lead us to expect that in general the network links between academic and other elites have weakened between 1980 and 2000. To understand these linkages of academic elites with other fields we plan to collect a series of membership indicators and carry out a network analysis that will allow us to determine the structure, density and scope of these interactional networks at different moments in time.

Second, we seek to analyse *multi-positionality*. In Switzerland, it is common that elite members simultaneously hold leading positions in different social fields. This explains why one finds numerous economic leaders or army officers in Parliament (Pilotti et al. 2010). As in our previous research we have already identified more than 70 university professors who were also members of national Parliament during the 20th century, we think that multi-positionality between the academic and the political field is also rather frequent. Similarly, we have gathered evidence that shows that law professors, as well as professors in engineering often sat on the boards of directors of important Swiss companies. Kley (2011) for instance showed that professors of public law often held – simultaneously or successively – political or judiciary mandates (such as member of the federal Parliament, of cantonal assemblies and executives branches of cantonal or federal courts). The aim is thus to identify systematically which professors simultaneously occupy leading positions in other fields and to study their position and their capital endowment within the academic field. Again we will investigate whether the internationalisation, the managerialisation or the feminization of the academic field has contributed to a decline of multi-positionality in the last decades.

Finally, we will focus on *the careers* of university professors. From the French system of the “pantouflage” or the American tradition of circulation between the corporate and the administrative world we know that careers play an important role in interweaving different elite sectors (Charles, 1987; Mills, 1956; Freitag, 1975). Therefore we will ask whether in Switzerland careers are used to link the academic field to other spheres of power. The aim is to identify crucial phases and states of academic careers in two respects: firstly, we will examine if professorial careers develop only inside the academic system or pass also through corporate, administrative or political positions. We expect that with the increasing autonomy of the academic field professorial careers have become more homogeneous and more exclusively academic in the second half of the 20th century. Thanks to the use of sequence analysis it will be possible to examine whether academic careers follow a stable positional sequence-pattern and how these sequential patterns vary according to disciplines and historical moments (Abbott & Hrycak, 1990; Bühlmann, 2010). Secondly, we will investigate if “internal careers” in the academic field are related to the degree of internationality of careers, by taking into account the important aspect of foreign professors at Swiss universities. In particular we will examine the time professors spend abroad, as well as the biographical timing and the duration of these spells abroad.

In sum, regarding this second research question, we can firstly formulate the hypothesis that during the first half of the 20th century, academic elites entertained close ties with elites of other fields (in the form of multi-positionality, network connections and field-connecting careers), and were generally well integrated with elites of other social spheres. Second, we can assume that, during the second half of the 20th century, academic careers have become more exclusively academic, but at the same time more international, meaning that connections with other national fields of power have again lost in importance; however, the recent trend of managerialist reforms might have stimulated new forms of cooperation between academic elites and their political and economic environment.

c) *Data collection: Building a Systematic Database on Swiss Universities Professors*

We will collect information on universities professors in Switzerland at five historical moments and integrate them into our already existing database on economic, political and administrative elites. This unique database includes so far more than 15'000 individuals holding a leading position in these three social spheres at five historical dates: 1910, 1937, 1957, 1980 and

2000⁵. The criterion for the inclusion in the sample was the position held by these elites at the five dates⁶. We will proceed similarly for the academic elites, by selecting all professors from the eight cantonal universities (Zurich, Basle, Bern, Geneva, Lausanne, Fribourg, Neuchâtel and St. Gall) and the two Swiss Federal Institutes of Technology (Zurich (ETHZ) and Lausanne (EPFL)) for the five dates. Because their creation is very recent, we have not taken into account the University of Lucerne and the University of the Ticino.

The idea to enlarge our previous research project to academic elites emerged when we realised that university professors were already strongly represented in our database. We have already identified more than 1'100 university professors in the sample of our previous research. This strong presence is mainly explained by their inclusion in numerous extra-parliamentary commissions (Germann, 1991) and in boards of directors of large companies. The sample consists of all « full professors » (professeur ordinaire, Ordinarius). These full professors represent the stable members of the academic community, they exert often a considerable institutional and scientific power within the academic field and in certain cases enjoy a relatively high social prestige as experts or intellectuals. From October 2011 to January 2012, the three applicants have collaborated with Steven Piguet, an experienced scientific collaborator funded by a University of Lausanne grant, in order to develop a data collection strategy. Piguet first identified the names and the basic function (title, discipline, faculty, and university) of the members of our sample based on the *Hochschulkalender* (table 1). This publication lists all university professors with some minimal indication about their year of birth, the title of their chair, their faculty and their university. He checked this list against the names that are already part of the existing database. Secondly, he listed the various sources mentioned below in order to complete these basic data with socio-demographic and career data. Finally, he adapted the database on Swiss elite in order to treat the data on academic elite according to different methodological tools, in particular to sequence analysis which was not used in the previous project.

Table 1 shows an approximate number of all full professors for the different benchmarks. The sample size appears to be impressively large at first sight. However, this will not threaten the feasibility of the project as more than 1'100 professors are already registered in our database. Secondly, a certain share of professors will be in office at more than one date, which will also reduce the total sample. Third, as professors were (and are) often also public figures it is comparatively easy to find data on full professors⁷.

Table 1: Sample of all Full University Professors, 1910-2000 (Sample 1)

	Zurich	Basle	Bern	Geneva	Lausanne	Fribourg	Neuchâtel	St. Gall	EPFZ	EPFL	Total
1910	52	56	92	65	53	46	35	-	162	-	561
1937	52	72	71	82	50	55	46	-	187	-	615
1957	78	97	76	114	59	50	40	17	280	19	830
1980	195	118	162	273	171	92	82	37	222	109	1461
2000	276	145	246	358	224	134	103	62	277	133	1958
Total	653	488	647	892	557	377	306	116	1128	261	5425

Source: Hochschulkalender, various years.

⁵ We have decided to not extend our data collection to 2010 in order to limit the sample to a reasonable size and to keep a certain distance to a field to which we currently belong personally. However, if time and resources will be sufficient we could imagine extending the period of investigation to this date.

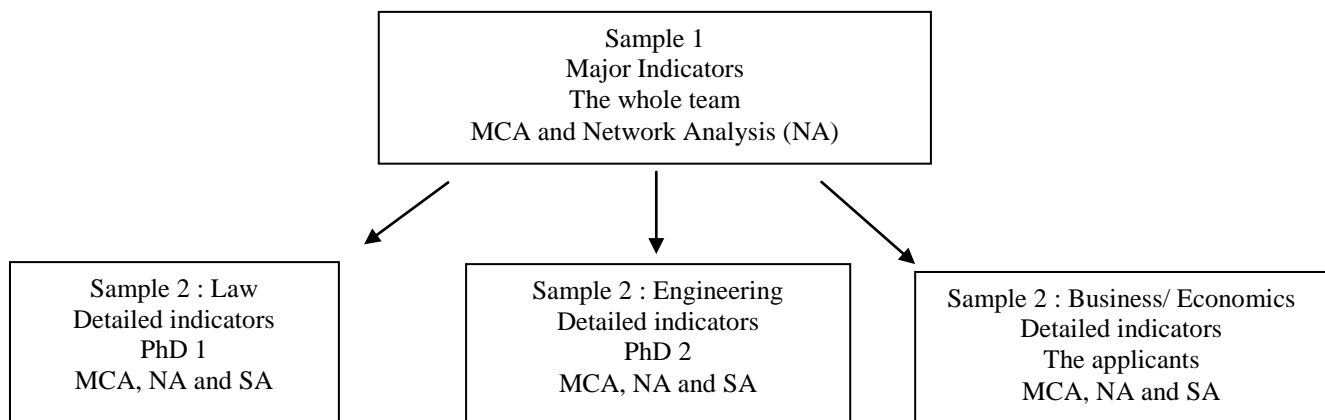
⁶ The database includes the following positions: CEO and members of the boards of directors of the 110 largest Swiss companies, member of the executives committee of the seven major economic associations, members of Parliament and government, members of the cantonal executive authorities, federal high civil servants, member of the Federal Supreme Court and members of extra-parliamentary commissions.

⁷ This is one of the reasons for which we exclude all non-full professors such as “ausserordentlicher Professor”, “professeur associé”, “Titularprofessor”, “Assistenzprofessor” or “Maître de recherche et d’enseignement” – for which it is often more difficult to find data.

The information on professors of our sample will be collected from a variety of existing sources and databases, certain of which already exist in digitalised archives. As emphasised above, existing data on Swiss professors already has been published in different monographic studies on universities (for example Robert & Panese 2000; Stadler 1983; Ruffieux 1991; Scandola, 1984b all provide biographical information on all professors in the respective universities)⁸. Concerning the University of Lausanne, we have already access to a systematic database on all professors since 1890, elaborated by Olivier Robert, Head of the University of Lausanne Archives. Thanks to Mr. Robert, we are also in contact with the “association” of Swiss Universities archivists, which meet twice a year. We intend to present our research project to this group in 2012 and are confident that this will facilitate our access to the archives of the different Swiss universities. We will also rely on our experience gathered during our previous research project. We developed close collaborations with major institutions specialized in data collection: the Swiss Historical Dictionary (www.dhs.ch), the Diplomatic Documents of Switzerland (www.dodis.ch), and the Federal Military Library (Bibliothek am Guisanplatz, Berne). In addition, the reports and archives of the universities, the reports of the Swiss National Science Foundation, the Swiss Academies of Art and Science, and of the Swiss scientific associations, as well as the various Festschriften dedicated to university professors, will also be useful to complete our data collection. Such a prosopographic approach is rather common in elite research and works relatively well if the researched group, as for example the university professors, is well documented (Lemerrier & Picard, 2011).

We plan a two-step research design which involves two different samples (see Figure 1). In **Step I**, we will map the structure of the Swiss academic field for the five benchmarks. For this large sample (Sample 1), consisting of all full professors at each benchmark, we will only need a relatively limited number of indicators (primary indicators), which will not be too difficult to collect.

Figure 1: The Planned Labour Division within the Team



In **Step II** we will focus on three disciplines that are particularly relevant for the question of autonomy and power of the academic elites: law, economics/ business studies and engineering⁹. Our previous studies on Swiss elites showed that Swiss political and economic elites are particularly often trained in these three disciplines and that professors in these disciplines are particularly well connected to other social spheres (extra-parliamentary commissions, boards of directors of companies or political mandates) (David et al., 2012; Mach et al., 2011). Also other Swiss and international studies showed that these three disciplines are particularly present in other fields of power (Honegger et al., 2007; Dyllick et al., 2007; Kley, 2011; Fourcade, 2006; Lebaron, 2000). The depth of the data (detailed indicators) we are going to collect for sample 2 – which is thus a sub-

⁸ Rich internet resources are available on University of Bern professors, with complete information on their professional career : <http://digibiblio.unibe.ch/digibern/>. One finds also rich information on ETHZ professors : <http://www.ethistory.ethz.ch/>. The *Schweizerische Bauzeitung* provides regular necrologies on all professors of the ETHZ and EPFL (<http://retro.seals.ch>)

⁹ “Engineering” is a rather broad and heterogeneous category. We do *not* count as engineering: mathematics, physics, natural sciences (biology, chemistry). Engineering mainly refers to technical education offered in the two federal Institutes of Technology (Zurich and Lausanne), and played a crucial role for the expansion of industries in Switzerland (Gugerli et al., 2005).

sample of sample 1 – will be considerably deeper. This will be possible as the number of professors in sample 2 is smaller than the size of sample 1.

Table 2: Sample of Full University Professors for three key Disciplines, 1910-2000 (Sample 2)¹⁰

	1910	1937	1957	1980	2000	Total
Law	46	64	70	112	171	463
Economics/ business studies	--	23	29	107	192	351
Engineering	89	100	210	230	373	1002
Total	135	187	309	449	736	1816

Source: Hochschulkalender, various years

According to our two research questions, we will gather relevant indicators concerning academic elites which correspond to the six afore-mentioned types of capital. Using Bourdieu's (1984) distinction between inherited and acquired capital and adapted to the Swiss context we have grouped them into six dimensions: 1) Inherited economic and social capital; 2) Acquired cultural and social capital (career); 3) Social, political and economic capital (referring to extra-academic resources); 4) Institutional capital (positions in academic institutions); 5) Scientific capital (recognition by peers); 6) Cosmopolitan capital (international experience and collaborations).

Depending on the historical moment, the salience and relevance of these different capitals will vary (Braun, 2001). As illustrated above, these capitals depend on the rules and functioning of the academic field at each historical period. In addition, certain indicators for institutional and scientific capital which are important today were much less measurable during the first half of the 20th century. By taking these precautions seriously, we will be able to describe the historical development of the mechanisms of reproduction and to show the relative importance of different resources in the Swiss academic field during the 20th century.

Table 3: Major Relevant Indicators of Capitals

Dimension	Operationalization	
	Primary Indicators (Sample 1)	Detailed indicators (only Sample 2)
Inherited economic and social capital	<ul style="list-style-type: none"> Year and place of birth Religious denomination Sex 	<ul style="list-style-type: none"> Social origin (profession of father)
Career indicators for acquired cultural and social capital	<ul style="list-style-type: none"> University education: university, beginning of studies, year of degree and discipline (licence, maîtrise, doctorate, habilitation) PhD supervisor 	<ul style="list-style-type: none"> Occupational career: beginning and end of each spell of the occupational career (outside and within academia) Spatial career: beginning and end of each spell of the spatial career, career place during each spell (Switzerland and country abroad)
Indicators for acquired social and economic capital	<ul style="list-style-type: none"> Military rank Membership in extra-parliamentary commissions Party affiliation and political mandates (federal or cantonal) Board membership in important Swiss firms 	<ul style="list-style-type: none"> Membership in local social clubs (such as Rotary) Participation in think tanks/institutions of exchange with business, interest economic associations

¹⁰ This is still an approximate estimation which will be improved. For example, in 1910 professors of economics/ business studies were often integrated in faculties of law and therefore appear not as economists here.

Indicators for institutional capital	<ul style="list-style-type: none"> • Rector • Member of the committee (or president) of one of the Swiss academies of Art and Science¹¹ • Member of the Foundation Council or the Research Council of the SNSF • Member of the Swiss Science and Technology Council 	<ul style="list-style-type: none"> • Vice-Dean, Dean • Member of the committee (or president) of a scientific association organised in the Swiss academies of Art and Science
Indicators for scientific capital	<ul style="list-style-type: none"> • Academic distinctions: Nobel Prize, Marcel de Benoist Prize, Dr. Honoris Causa¹², etc. • Number of PhD-thesis supervisions 	<ul style="list-style-type: none"> • Number of Publications in the Science Citation Index • Member of the editorial board of a scientific journal • Number of grants/total amount received from the SNSF and other important funding agencies
Indicators for cosmopolitan capital	<ul style="list-style-type: none"> • Nationality • Study abroad • Career and fellowship abroad¹³ 	<ul style="list-style-type: none"> • Membership of the committee of international scientific associations • Member of the editorial board of an international scientific journal

The division of labour within the team will be closely related to the architecture of the project (Figure 1). For the sample 1, all members of the team (the two PhD students and the three applicants) will be involved in the data collection. For the sample 2, the two PhD students will write their thesis on one of the two disciplines (law and engineering) whereas the three applicants will work on the economics/ business studies professors. In this way, the three applicants will be involved in the two steps of the research design and will be able to spread their experience in data collection and their methodological knowledge to the two PhD students. The PhD candidates will thus be able to profit from the accumulated knowledge from the previous research project on Swiss elites and enjoy an interactive and adequate supervision.

d) Methods by which the Research Goals are to be Reached

To study elite recruitment and reproduction, researchers often use either regression analysis (Rothböck et al., 1999) or multiple correspondence analysis (Bourdieu & Saint Martin, 1978; Hjellebrette et al., 2007; Denord et al., 2011). When it comes to studies of elite coordination network analysis is often the preferred method (Useem, 1984; Stockman et al., 1985; Mizruchi, 1996; Carroll, 2010). In the last years several possible combinations of these methods have been developed and tested (Bühlmann et al., 2012). In accordance with these developments, we will rely on three methodological strategies and their innovative combination: network analysis (NA), sequence analysis (SA) and multiple correspondence analysis (MCA). *Network analysis* is a method based on graph theory and employed in elite research to identify linkages between actors or companies. NA allows us to examine the structure of an institution's (or person's) network, to identify important sub-networks (cliques) and to measure its cohesion or centrality. From this, conclusions can be drawn about the structure of a network, its cohesion, and the specific role of certain of its components (Stokman et al., 1985). Interactional relations, such as identified with NA, are important mechanisms of elite coordination and figure as indicators of power in many elite studies. In the proposed project NA will be used to study the interactional relations of academic elites with other fields, i.e. the networks of membership in the army, the presence in extra-parliamentary commissions or membership in boards of directors

¹¹ Notably the four academies and two societies represented in the Foundation Council of the SNSF: Swiss Academy of Humanities and Social Sciences (SAGW), Swiss Academy of Sciences (SCNAT), Swiss Academy of Medical Sciences (SAMW), Swiss Academy of Engineering Sciences (SATW), Swiss Society of Jurists (SSJ) and the Swiss Society of Economics and Statistics (SSES).

¹² The archives of the University of Lausanne have established a systematic database on the Doctor Honoris Causa given by all Swiss universities. See: <http://www.unil.ch/archives/page85177.html>

¹³ For example Fulbright fellowship or Rockefeller's fellowship. For a list of Swiss Professors who received a Rockefeller's fellowship, see: Rockefeller Foundation (1972), The Rockefeller Foundation directory of fellowships and scholarships, 1917-1970. Rockefeller foundation, New York.

of large companies. We will be able to show how these relations have evolved during the 20th century and which disciplines and universities are particularly well connected to other social fields. In addition network indicators can be integrated into a multiple correspondence analysis and contribute to a deeper understanding of the historical development of the field of academic elites (Bühlmann et al., 2012; Mach et al., 2011).

Sequence Analysis is a method that models processes. Researchers using it conceptualise sequences as a chain of states with differential duration and order. The central idea is to compare pairs of sequences by computing the (weighted) number of elementary operations of deletion, insertion an/or substitution that are necessary to transform the former into the latter. This finally allows researchers to classify the trajectories into typologies, to compare a trajectory to a modal sequence or to compute measures of internal turbulence of a career (Abbott & Hrycak, 1990). Applying SA on academic careers, will allow us to identify types of more or less international trajectories or to isolate the careers that contribute particularly strongly to the interweaving of the academic field with the political, administrative or economic field. Can we for example identify careers restrained to a single field and differentiate them from more diversified careers, with spells outside academia before or after the appointment as a professor? Or can we distinguish different forms of international careers and situate them historically or with respect to disciplines and universities? Finally, it will be possible to relate the career-types to specific volumes and configurations of capitals and to use the career type as a categorical indicator within a multiple correspondence analysis.

Multiple correspondence analysis is a multivariate method that condenses the information contained in a large number of variables and allows the researcher to represent this information in a relational graph (De Saint Martin & Bourdieu, 1978). This graph represents a cloud of individuals and a cloud of categories and constructs a “field” illustrating the system of relationships among the variables. The more closely (respectively more distant) individuals are situated to each other, the more (respectively fewer) categories they share. Inversely, spatial proximity between two categories indicates that these categories are shared by a larger number of individuals. MCA is widely used in bourdieusian field analysis and has in recent years experienced a significant and international second spring in elite research (Hjellebrekke et al., 2007; Denord et al., 2011, Mach et al., 2011). At all five points in time (1910, 1937, 1957, 1980 and 2000) an MCA will be used to construct the field of academic elites and to determine its most relevant structures and fractions. This will allow us to test if different types of capital are particularly concentrated in certain disciplines or universities and solidify into hierarchically and functionally different fractions. One of the advantages of MCA will be that indicators of network centrality or typologies of careers can easily be integrated as variables in an overall analysis (Lemerrier & Zalc, 2008). Such a combination of methods has only rarely been used and will constitute a major methodological innovation of this project.

2.4. Schedule and Milestones

The schedule of the planned project is divided into a data collecting and a data analysis phase. In the first four months we intend to hire Steven Piguet in order to continue adaptation of the existing and the preparation of the new data-base. Two PhD students will be hired and integrated to the project. One of the PhD candidates will be working with the main applicant, the other with the two co-applicants. During the first year, all the team members, including the three applicants, will be involved in data collection and linking the new data base to the existing one. In addition, the PhD students will acquire the necessary skills in network analysis, sequence analysis and multiple correspondence analysis. They will have the opportunity to familiarise with these methods in summer schools or during courses. Simultaneously, they will have the time to outline their doctoral project in close collaboration with the three applicants.

Table 5: Schedule and Milestones

	Jan 2013 – April 2013	May 2013 – Aug 2013	Sept 2013 – Dec 2013	Jan 2014 – April 2014	May 2014 – Aug 2014	Sept 2014 – Dec 2014	Jan 2015 – April 2015	May 2015 – Aug 2015	Sept 2015 – Dec 2015
Preparation of the data base									
Acquisition of method skills									
Data Collection sample 1									
Data Collection sample 2									
Analysis of the structures of the academic field									
Analysis of network linkages to other fields									
Analysis of professorial careers									
Synthesis and publications									

In the second part, from September 2013 onwards, the emphasis will lay on the analysis and interpretation of the data. All the team members will work together to analyse sample 1 in order to get a first overall answer to the two research questions devoted to the whole field of the Swiss academic elite. From May 2014 onwards, these analyses will be deepened with data from sample 2 and with additional sequences analysis. In this phase the junior researchers will concentrate on their personal PhD-project and the chosen discipline (law or engineering). The three main applicants will work on economists. Finally, the time from September 2014 on will be dedicated to the synthesis and the writing up of publications.

2.5. Importance and Impact

a) *Scientific Relevance*

Thematically, this study fills a research gap in the international, but particularly also the Swiss research on elites. It will allow us to overcome the particularistic logic of studies on single university or single disciplines which prevailed so far in Switzerland. For the first time we will have at our disposal a historically far reaching account of the transformation of the resources of academic elites and the power structure of the academic field in Switzerland. Examining the Swiss case, where elites are historically closely related, it will secondly shed light on the autonomy of the academic field and its relations to the field of economic, administrative and political power. At the same time, it will complete and nuance the general elite study already carried out by the two co-applicants and complete our picture of the historical development of Swiss elites. The interdisciplinary orientation of the project and the articulation of different strands of literature will contribute to a cross-fertilization of hitherto separated approaches and contribute to the further development of the concepts for analysing elites. *Methodologically* the project will promote alternative quantitative methods (such as network analysis, multiple correspondence analysis and sequence analysis) and allow for an exploration of their possible combination. In particular the complementarity of network analysis and MCA is more and more tested, while sequence analysis helps us to put these methods in a dynamic context. We will also try to develop means to integrate sequence analysis and MCA and promote these methodological innovations among a larger scientific community.

The project will have an important impact on *education and teaching*: it is planned to accompany the research with a corresponding interdisciplinary research seminar for master students at the University of Lausanne. The two PhD students

will obtain a thorough theoretical introduction into elite research and benefit from a solid methodological education (summer-schools, doctoral programs) that will allow them to write a high quality thesis.

Jointly with the PhD students we plan to present the results at series of international conferences (for example at the International Sociological Association conference in Yokohama 2014) and *to publish* a string of substantial and methodological papers in reputed international, as well as Swiss journals:

- One paper on the general changes in the Swiss academic field will be published in an international journal: *Sociology*, *Social Forces* or *European Sociological Review*.
- One paper on the articulation of the academic and the political field will be published in the Swiss political Science review, the Swiss journal of Sociology or the *Revue Suisse d'histoire*
- Further it is planned to write three papers on each of the three disciplines of power (law, engineering and economics/ business studies) in international journals.

The results should finally be brought together in a common book about the academic elites in Switzerland, which will address a larger public.

b) *Broader Impact*

In order to render the data available to a broader public we intend to continue our collaboration with the Swiss Centre of Expertise in Social Sciences (FORS) in Lausanne. In particular we plan to up-date the website on Swiss elites (<http://www.unil.ch/elitessuisses/>) in order to make it even more easily accessible for a wider public. The data will be stored according to state of the art archiving methods and in this way be useful for future research in this domain. In addition, this research project is a contribution to the on-going public debate on the role of universities and science in modern Switzerland and the related debate about its internationalisation. It should contribute to give this debate a sounder scientific basis, which will allow Switzerland to face the challenges of the future. The applicants plan to participate in the public debate in the form of carefully chosen articles and contributions to high-quality newspapers and magazines.

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