Serving Different Masters
The Communication Doctorate in the Knowledge Society

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ABSTRACT

The doctorate is a degree that has been influenced by developments in society and higher education over the last decades. The international literature has widely acknowledged differences in the doctorate between disciplines as well as between national contexts. In some contexts, new types of doctoral degrees, including professional doctorates, have emerged.

This piece of research is interested in the doctorate in a specific national and disciplinary setting: communication sciences in Switzerland. Communication sciences represent a field of study that is characterised by diversity and blurry boundaries. Higher education in Switzerland is to a large extent regulated on the regional level, thus also characterised by diversity, enhanced by the presence of higher education institutions in three different linguistic regions.

The study at hand looks at the doctorate in this field from different perspectives. It includes the political and organisational context, based on official documents, statistics and an analysis of the regulations on the doctorate at all universities currently training doctoral students in the field, as well as an analysis of the institutional, social and cognitive structures of the field of communication sciences in Switzerland. Based on this contextual information showing the diversity of the field, the actor's perspective is looked at through in-depth interviews with 41 doctoral students and 14 supervisors.

The study shows that, even though there is no official differentiation in the doctorate in Switzerland, there is diversity. A categorisation of typical situations of doctoral students, including three categories, is identified, formally based on the dimension of integration in a scientific community. *Academics* are doctoral students employed by a higher education institution who participate very actively in a mostly international scientific community. Their supervisors are most often also active contributors in the community, and they encourage and support them in their way into the community. The category of the *workers* includes doctoral students with and without an employment in an academic organisation, who do not, not yet or no longer actively participate in a wider scientific community. They are often highly engaged in local activities such as teaching and administration or local research projects. Missing organisational integration most often goes along with missing or low scientific integration. Between *academics* and *workers* are the *multifunctionals*, doctoral students who are rather strongly engaged on the local level, but who also participate in a scientific community, thus experience a whole range of activities that are constitutive of the academic profession.

From the results of this study, it seems that the degree of formal organisation of the doctorate (for example in graduate schools) does not influence too much on the doctoral experience and the future career of doctoral degree holders. Small disciplinary and linguistic differences can be observed. An influence of the general social and cognitive structure of the field clearly emerges. An important role is visible for beliefs about the doctorate, as well as the interaction between the doctoral student and his environment, including the supervisor. Beliefs of doctoral students often evolve during the process. Conflicts emerge when beliefs of the doctoral student and the environment are not compatible; most often, they can be resolved through smaller adaptations, rarely a supervision relationship breaks.

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During this doctorate about the doctorate, I have learned a lot about what it means to do a doctorate – both from the study I conducted and from my personal experience. It was a great learning experience, about the doctorate as such, but also about myself. This was possible only thanks to people and institutions that supported me in this process – on the academic, scientific, financial and emotional level.

In first place, I would like to thank the individuals that participated in my study – doctoral students and supervisors who contributed to this piece of research by giving me insight into their own situation, and sharing their (sometimes very personal) experiences and point of views. These interviews constitute a substantial part of my thesis. Also, doing these interviews was surely one of the most important highlights in my own doctoral process.

The study at hand gives examples of the importance of supervision. In my doctorate, I could benefit from the supervision of two senior researchers: Prof. Dr. Edo Poglia, who contributed to this piece of research with challenging questions and comments and who gave me freedom and support to pursue this study, and Dr. Benedetto Lepori, who guided me through this process and introduced me to the scientific community, but also to the essentials of scientific work. This combined supervision allowed me to experience academic life in many of its facets. Thank you!

I wrote this thesis while being employed at the Università della Svizzera italiana in Lugano, first as an assistant at the Istituto di Comunicazione istituzionale e formativa of the Faculty of Communication sciences, and then as an assistant at the university's Research Service. This institutional context gave me the necessary infrastructure and space for pursuing my research.

Additionally, during 8 months I had the chance to benefit from a "fellowship for prospective researchers" of the Swiss National Science Foundation, which allowed me to spend time exclusively devoted to my doctorate while staying at foreign research institutes. This was an extremely valuable experience, which allowed me also to start creating my own network in the scientific community. I therefore would like to thank the people at the Center for Higher Education Policy Studies CHEPS (University of Twente, the Netherlands) and at the Centre de sociologie des organisations (SciencesPo/CNRS, Paris, France) for their hospitality.

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Finally, as also comes clear in the study at hand, writing a doctorate is not just another job, it is rather a project that involves a person as a whole, a project that can hardly be put out of one's mind after working hours. These final lines of thanks are therefore devoted to my husband, my family and friends. Thank you – you know for what.

June 2009, Carole Probst Schilter

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PREFACE

This thesis submitted for the Ph.D. in Communication Sciences is interested in the doctorate in communication sciences in Switzerland. It therefore stands at an observation post looking at the field of communication sciences, and analyses this field through the lenses of higher education studies.

To look at the doctorate in communication sciences in Switzerland can be of interest for scholars both in the field of communication sciences and in higher education studies.

To scholars in communication sciences, this thesis offers the possibility to look at the field's practices, cognitive and social structures as they are reflected in the doctorate. It thus adds to the self-reflection of this field, which, at least in Switzerland, has grown over the last decade and currently undertakes some activities of self-monitoring, also regarding doctoral training.

To scholars in higher education studies, this thesis offers an example of a comprehensive study on the doctorate, a degree that is currently subject to developments in and requirements from society and economy. It provides an in-depth look at this degree in one particular field in one national context, which however is characterised both by linguistic and disciplinary diversity.

The text is divided in three parts. The first part introduces the subject matter of the study, provides an overview on its context, and addresses research questions and methodology.

This first part starts in chapter 1 with reflections on the international discussion on the doctorate. Developments in society and higher education that have an influence on the doctorate are addressed, and research questions are deducted.

In chapters 2 and 3, the organisational and disciplinary context of the study at hand is presented. First, characteristics of the Swiss higher education system that are of relevance for this study are addressed, and some information on the doctorate in Switzerland is given. Chapter 3 looks at the field of communication sciences, by first pointing at the international discussion on the disciplinary identity of this field and then giving an overview on the field's social and cognitive structure in Switzerland. Some information on doctoral training in the field is included as well.

The first part is concluded with a chapter that provides information on the methods used as well as information on the sample of doctoral students interviewed for this study (chapter 4). This chapter presents how the sample was constructed, and mainly gives general information on characteristics of the sample. It also relates the sample to the whole population, thus addressing the topic of representativeness and presenting some general characteristics of doctoral students in communication sciences in Switzerland.

The four chapters of the second part are dedicated to the presentation of results of the study, presenting the doctorate in Swiss communication sciences according to four dimensions. First (chapter 5), the formal and organisational dimension is addressed. This chapter looks, on the one hand, at what regulations state about the doctorate, and, on the other, at their implementation and at how doctoral students and supervisors perceive them. Overall, it presents the process of the doctorate in its formal steps.

Chapter 6 then addresses the personal dimension. It looks at the interpretations the individuals give to a doctorate, from the beginning of the process up to the future career afterwards. Topics in this chapter include the reasons to do a doctorate, the doctorate as an employment situation, the doctorate as a period of personal development and of concentrated work on a specific topic, the doctorate as a degree and the doctoral students' plans for the future.

Then, the academic dimension is addressed: chapter 7 presents to what extent doctoral students participate in what kinds of scientific communities. It looks at their publication and presentation activities both in terms of numbers and contents, but also at the reasons why they address specific topics and to what extent their topics overlap with the topics covered by their organisational environment.

Chapter 8 addresses the dimension of relationships to senior researchers and peers. First, the relationship to the supervisor, and thus also the supervision process is addressed. Frequency and content of supervision is looked at, but also ideas about how supervision ideally would look like are presented. Then, formal and informal, internal and external contacts to other senior researchers as well as contacts to peers are addressed.

The third part of the text adds structure to the results presented in the second part: it looks at models and pathways that can be identified in the doctorate in Swiss communication sciences. Chapter 9 presents three categories of the doctorate that have emerged out of the interviews. Their characteristics are addressed, including differences related to contextual and individual factors.

Chapter 10 adds the time dimension to the description of the categorisation, by looking at the individual pathways of doctoral students. Why does the pathway of a doctoral student correspond to a particular category? What kinds of changes occur during the doctorate? Where do conflicts emerge? These are questions addressed in this chapter.

Finally, chapter 11 looks back at the research questions that stood at the beginning and links them with the answers that have been provided throughout the text. A focus is put on how the doctorate reflects the field's social and cognitive structure. This chapter concludes with reflections on limitations of this study and with ideas for further research.

I. SUBJECT MATTER, CONTEXTUAL INFORMATION, RESEARCH QUESTIONS AND METHODOLOGY

1 Recent evolution of the doctorate

What is a doctorate? Over the last decades, the interest in doctoral studies both in research and in policy discussions regarding higher education has increased in the Western world. Empirical studies often focus on aspects such as the training and further career of academics, access to doctoral studies, gender issues, or, a topic that became familiar at the end of the 1980ies, supervision and the integration of doctoral students into the scientific context; comprehensive research seems to be rather scarce (Burgess 1994; Enders and Bornmann 2001). On the policy level, often discussed issues are quality and efficiency, internationalisation, access, gender and the long duration of doctorates (Kivinen et al. 1999).

The international discussion shows that the doctoral degree is currently in a process of change. Since the 1980ies, Western governments are interested in the topic (OECD 1987; Neave 1993; Enders 1999; Kivinen et al. 1999). With the Berlin Communiqué (2003) and again the Communiqués of the Ministers' meetings in Bergen (2005) and London (2007), doctoral training was put on the agenda of the Bologna process, with the aim of designing common guidelines for a European doctoral degree.

The tendency of recommendations in documents of different bodies goes towards more transparency in admission and process, towards structured doctoral training. The responsibility shifts from the individual to the institutional level (Kehm 2007b). In the policy discussion, national diversity, however, is considered a strength of the European doctorate (CRUS et al. 2004; EUA 2007).

Besides these ongoing changes on the policy level and in the organisation of doctoral training, a doctorate is always embedded in a national and disciplinary context. The international literature has widely shown the influence of disciplinary and national diversity on the organisation of academic life and the styles of inquiry (see for example Clark 1983; Whitley 1984; Ben-David 1992; Abbott 2001; Becher and Trowler 2001; Powell and Green 2007), and thus also on the doctorate (see for example Neave 1993; Parry et al. 1994; Sadlak 2004; Parry 2007).

In this context of change, of disciplinary and national diversity, different forms of doctorates – for example research doctorates, professional doctorates, fast track doctorates, cumulative or portfolio doctorates – have emerged and are currently discussed in an international context (Scott et al. 2004; Green and Powell 2005; Kehm

2005; Boud and Tennant 2006; Metcalfe 2006). This differentiation[1] in the degree can be seen as an answer to ongoing changes in higher education and society, such as massification of higher education and the development towards a knowledge society, where the need for highly skilled knowledge-workers increases.

Where new doctoral degrees are introduced, differentiation occurs on an official, nominal level. There are, however, also contexts, where for a variety of reasons this kind of differentiation does not exist or seems not possible. This is the situation in the case I focus in this text: communication sciences in Switzerland. So far, the doctorate in this young field that increased mainly since the second half of the 1990s seems rather under-regulated, but there is a general tendency towards the introduction of more organised doctoral training also in this country and field.

Communication sciences are a teaching-intensive field, and research is often done in collaboration with or as a service to the non-academic context. Swiss communication sciences are characterised by diversity on the disciplinary and the organisational level: as on the international level, there is an ongoing discussion on the identity of the field of communication sciences. Switzerland is a country with three main linguistic regions, influenced to a certain extent by the neighbouring countries. Swiss higher education is under both federal and cantonal authority, thus legislation occurs on two different levels of the State. Additionally, higher education institutions often also dispose of a certain degree of autonomy. There is no national framework for doctoral training. This case allows thus looking at disciplinary and national diversity, but still remains small enough to get a rather complete overview.

In the remaining sections of this first chapter, a framework for the analysis is set. First, the doctorate as a process of socialisation, as a training and selection period, as an organisational element and as a social and cultural construct is addressed (1.1). Then, developments in higher education and society leading to diversified requirements for the doctorate are discussed (1.2). The doctorate most often does not train exclusively for an academic career, doctoral degree holders are envisaged to pursue careers also outside the academic environment (1.3). Differentiation in doctoral training is therefore needed. There are different ways for differentiating the doctorate. A section on the research questions (1.4) and short conclusions and an overview on the structure of this first part (1.5) conclude this chapter.

[1] *Differentiation* indicates the process leading to *diversity*. The use of the concept *differentiation* instead of *diversity* is deliberate: while diversity is a static situation, differentiation signals a dynamic process (Goedegebuure et al. 1996; van Vught 2007). For discussions on the use of the concepts *differentiation* and *diversity* in higher education see also Huisman (1995), Meek et al. (1996), Musselin (2003).

1.1 The doctorate: possible interpretations

At first sight, the answer to the question "what is a doctorate?" might seem obvious. There are some general ideas in the concept of the doctorate that seem to be universal – for example its status as a *rite de passage* giving access to the academic community or its function as training for future researchers. Its implementation, however, varies. The concept of the doctorate can be approached from different angles. In this section, some possible interpretations are addressed. They allow considering different aspects of the doctorate and will serve as general concepts for the analysis and discussion of the results of the study at hand.

1.1.1 A multiple socialisation process

The doctorate can be considered as a moment of secondary socialisation (Berger and Luckmann 1977), the process through which an individual becomes a member of a distinct sub-world; in the case of the doctorate this sub-world is a part of the academic and scientific world. During this conscious and unconscious situated learning process meaning is constructed. Not only knowledge, but also social identities are transferred and specific perspectives are acquired (Parry et al. 1994; Austin 2002; Campbell 2003; Parry 2007). The doctorate is a transition process from the undergraduate student in need of guidance to the independent mature scientist; a doctoral student is supposed to learn to "deal with the indeterminate and open-ended nature of independent fieldwork and the uncertain and unstable conditions that often surround (…) research." (Campbell 2003: 898)

Besides socialisation to a specific discipline or field, a doctorate also includes at least two other types of socialisation simultaneously (Austin 2002), especially if doctoral students are employed at a higher education institution or at least have an office space and thus are physically present in an academic department during their doctorate: socialisation to academic life and the academic profession and to the role of doctoral student. Socialisation in the doctorate occurs primarily in an academic department or institute, thus in an organisational setting characterised by (Musselin 2007a) functionally loose coupling of academic tasks (it is not necessary to know what colleagues in the same organisation are doing in teaching and research, intra-organisational cooperation and coordination is low) and the complexity of teaching and research (processes that are difficult to describe, prescribe and reproduce). The organisational unit represents the place where the organisation university and the large, often worldwide disciplinary community converge (Golde 2000; Gardner 2006).

Golde's (1998) analysis of doctoral attrition reveals several tasks doctoral students have during the socialisation process. They include "intellectual mastery", getting to know the "realities of a life as a graduate student", getting insights into the academic profession as

well as integration into an academic department. Golde paraphrases these tasks saying that doctoral students have to find the answers to the questions "Can I do this?", "Do I want to be a graduate student?", "Do I want to do this work?" and "Do I belong here?" (Golde 1998: 56).

The academic profession is and has always been subject to changes. Academics always have been engaged in several different types of tasks, but the core activities used to be teaching and research (Musselin 2007b). "Other activities were necessary, but were not part of the job description and were not explicitly rewarded" (Musselin 2007b: 3). Today, other activities are also part of the ordinary day in the academic workplace. Diversity in the student population, the presence of new technologies and changing requests from society are just a few examples of characteristics of the academic workplace that require academics to perform other activities such as preparing and implementing e-learning modules, raising funds for research through proposal writing or engaging in technology transfer (Austin 2002; Musselin 2007b) – services to the community, third mission activities, but also engagement in university management are constitutive parts of the academic profession.

Thus, socialisation to the academic profession includes also learning a variety of tasks that are nowadays seen as constitutive of this profession. However, an important question arises: does this socialisation really occur in the doctorate? Thus, does the doctorate build and foster skills that are necessary for the academic or another profession? In a longitudinal study on U.S. graduate students preparing for becoming faculty members, Austin (2002) found that this is not necessarily the case. There is a lack of guidance and of opportunities to systematically develop required competencies. Doctoral students observe senior faculty members, they feel the need to make sense of the academic profession, but apparently are not able to understand it completely (Austin 2002).

Whether doctoral training really trains for the future professional role, however, is not a new question. Already in 1930, in the first Volume of *The Journal of Higher Education,* Dale introduced his paper on *The Training of Ph.D.'s* saying that "[t]he inadequacy of the training which the doctor of philosophy receives to fit him for college teaching is a problem which has long agitated academic circles" (Dale 1930: 198).

Future career possibilities of doctoral degree holders vary, and in many contexts doctoral degree holders have to find positions outside academia. Thus, it can be asked whether it makes sense that all doctoral students are socialised in the academic profession. The question is raised whether "current forms and future practices of doctoral education are appropriate to prepare scholars and researchers to meet the demands of society and the global world" (Kehm 2007a: 134f.). As a possible answer to this dilemma, different types of doctorates, such as the *professional doctorate*, are introduced in some places

(see 1.3.3). In these doctorates, socialisation often occurs to other communities than the academic.

1.1.2 A learning and selection period

A doctoral student is a potential future member of the academic and scientific community – he[2] is in the situation of what Lave and Wenger (1991) call *legitimate peripheral participation*. The doctoral student thus starts his socialisation in and participation to the community of practice from a position in its periphery, as a newcomer, and ideally begins advancing towards its centre, starts being part of its socio-cultural practices, through a process of situated learning. He starts participating in the community in a passive way, through observation, and then becomes increasingly more active, contributing to the community's knowledge production. The final aim of this process is to become an established member, to gain full participation to the community (Lave and Wenger 1991).

Underlining the differences between disciplines or specialties, Becher (see Becher 1989; Becher and Trowler 2001) describes these communities of practice as academic tribes ranging over academic territories – the ideas, research topics, and methodologies the communities work with. Cultures in the different tribes differ, and so does knowledge production and communication. A doctoral student thus learns how the tribe he is becoming part of explores the territory. He learns how knowledge is produced and which ways of knowledge production are accepted and used in this specific tribe. He gets to know the territory and its boundaries, the explicit and implicit rules binding the tribe together, the language that is spoken, the communication channels that are used. Ideally, he starts participating in the tribe's discourse and thus in the knowledge construction (Hyland 2000). In short, he learns how to move smoothly inside the tribe and the territory.

From the point of view of the academic community – the tribe – the doctorate can be considered as ensuring its future, as a process of training and selection of the next generation of its members. At the end of this period, the young member of the tribe demonstrates his ability through a substantive piece of scientific writing, the doctoral thesis, which is judged by senior members of the tribe. It is thus the tribe as such deciding about full admission of its new members.

The doctorate can also be considered as formal period of training and as formal element of selection. Its characteristics as formal training period are underlined by its inclusion as the third cycle in the Bologna reform and by the increasing trend towards the

[2] In order to make text more readable as well as to enhance confidentiality of the interview partners when individual examples are addressed, the masculine form is used for both male and female persons.

implementation of graduate schools and of formalised training for doctoral students – the shift "from research training towards Doctoral education" (de Weert 2004: 91).

However, formal training seems to be responsible only for a small part of the outputs of doctoral training. Research training rather occurs in social interaction with senior researchers, it includes trial, error and negotiation with others (Delamont and Atkinson 2001; Campbell 2003).

Admission to the doctorate is restricted. This restriction can occur in more or less formalised and transparent ways, and be under the authority of the single professor or of the organisation. But also the process seems to be selective, even though often not in a formalised way. Doctoral attrition is rather high, for the United States for example it is estimated that more or less half of the doctoral students do not complete their degree. Dropout occurs for different reasons. Golde (2000) and Gardner (2006) mention lack of social and academic integration, lack of financial stability, disappointment and poor supervision. Thus, the selective effect of doctoral training seems to be related not only to the personal characteristics and achievements of the doctoral students, but also to the circumstances, the setting.

1.1.3 A social and cultural construct

Universities can be described as symbolically rich organisations where different cultures converge (Clark 1983): the culture of the discipline, the culture of the organisation, the culture of the academic profession and the culture of the higher education system, thus the national culture and policy context. These cultures all entail beliefs about the organisation; they lead to the construction of meaning. New members of a community are introduced into the community's culture, and start incorporating the community's beliefs.

In this symbolically rich context, a doctorate could be described as a myth[3] incorporated in an organisational structure (Meyer and Rowan 1977). In this interpretation, myths can be described as

> rationalized and impersonal prescriptions that identify various social purposes as technical ones and specify in a rule like way the appropriate means to pursue these technical purposes rationally (...) [T]hey are highly institutionalized and thus in some measure beyond the discretion of any individual participant or organization. They must, therefore, be taken for granted as legitimate, apart from evaluations of their impact on work outcomes.
>
> Meyer and Rowan 1977*: 343f.*

[3] In this context, the term „myth" is used in a different way than it would be in other fields where it is a central concept, for example in anthropology.

In this perspective, organisations do not create formal-rational structures in order to raise efficiency, but in order to gain legitimacy. Structures are implemented on a formal level, visible for the environment, for example in regulations and commissions, but often do not correspond to the internal structure of activities (Hasse and Krücken 2005). "Support is guaranteed by agreements instead of depending entirely on performance" (Meyer and Rowan 1977: 351); the use of services provided by the organisation and the funding of their activities occurs "almost automatically year after year" (351). The existence of myths allows the performance of collective action. Myths, and thus also the corresponding organisational structures, are constructed in social interaction (Berger and Luckmann 1977).

A rather common meaning of the doctorate consists in its function as *rite de passage* (Bartelse et al. 1999; Parry 2007), as the admission ticket to the academic profession. This degree is supposed to certificate its holder's ability to perform independent research. Its "core component (…) is the advancement of knowledge through original research", as is stated in the Bergen Communiqué (2005). In most contexts, today a doctorate is a *sine qua non* condition for accessing the academic profession. In certain contexts however, as for example in France, Italy or Norway, this is rather new. In Italy, the research doctorate did not even exist before the 1980s (Germano 2001; Moscati 2004). In Norway, until the early 1990s, research positions used to be attributed to people without a doctoral degree. The dissertation was written at a later stage and considered a masterpiece, which had to answer rather comprehensive requirements (Broch and Hyllseth 2004). Thus, in several countries there are people in advanced academic positions that do not have a doctoral degree. This shows that the doctorate is indeed a social and cultural construct with different meanings in different contexts.

The myth of the doctorate structures the academic field; it is an important institution in academia, it indicates its holder's recognition, it creates a highly symbolical and ceremonial value. Ceremonial activity and institutionalised rules, however, are often not compatible with the demand for efficiency (Meyer and Rowan 1977).

A doctorate is supposed to indicate its holder's suitability as a member of the scientific and academic community; this, however, does not necessarily mean that its holder is really able to do what he is expected to do, such as performing independent research or teaching undergraduate[4] students.

[4] The use of the terms undergraduate, graduate and post-graduate is not unambiguous in the international literature; also due to the different use of the terms in different national settings. In this text, I use them as follows: *undergraduate* describes the training period until the achievement of a degree that allows for enrolment for a doctoral degree; since in the context I look at in this text, Switzerland, and generally in Europe, a Master's degree is required for access to the doctorate, *undergraduate students* are those preparing for a Bachelor, a Master's or an "old" licence degree. A *graduate* is consequently somebody who has achieved this degree, and with *graduate training* I refer to training after this degree; be it in a doctorate or in other types of training, such as

Changes in the organisation of doctoral training can be interpreted also as answers to changes in the myth of the doctorate. The pressure to implement doctoral-school-like organisational forms can be interpreted as stemming from a myth; even though it is not necessarily the most efficient way of training future researchers, it is considered to be a suitable way. Therefore, implementation of organised doctoral training fosters the universities' legitimacy and thus also their possibility to get funding.

Besides common basic ideas, the myth of the doctorate, however, gives room to ambiguity, which allows for different ways of operationalisation. Doctorates in different cultural contexts and organisational settings are interpreted in different ways, and there is room for plurality also in the norms and regulations. While in Germany, for example, the doctorate as a degree has an important value outside academia, and doctoral degree holders assume interesting employments on a wider labour market (Enders 2004), their French and Italian counterparts have difficulties in finding adequate job positions outside academia (Dahan 2007). In Italy, the private sector is not interested in doctoral degree holders; where research is conducted in private firms, researchers are often trained internally: "[a]lmost half of company researchers do not have a first university degree" (Moscati 2004: 66).

Meaning is constructed in social interaction, but also undergoes an individual interpretation process (Blumer 1986). A doctorate is likely not to be the same for an officer in Brussels and for a philosophy professor in Rome. Individual and collective meanings are not necessarily congruent, but connected to each other. Thus, the meaning of the doctorate, an abstract object, for a doctoral student and his supervisor might differ. Through interaction, they mutually influence the meaning the other attributes to this construct. A supervisor, but also other people in the environment, thus have influence on the meaning a doctoral student attributes to the doctorate. This attributed meaning is permanently open to revision and can thus change through the process.

1.1.4 An element of organisation

Doctoral students are often employed by higher education institutions, and are thus members of staff, part of the organisational structure of the university. It is often discussed whether doctoral students are, can or should be considered as employees or as students (see for example Mangematin et al. 2000; Kehm 2004; Kupfer and Moes 2004; Kehm 2006 Gerhardt et al. 2005). In many contexts they assume roles inside the organisation that are not necessarily directly linked to their doctorate.

This discussion implies also the issue of employment conditions and salaries: if doctoral students employed as assistants are considered as students, it seems natural to pay them a

executive Masters. I use the term *post-graduate degree* for referring to the degree that is earned in *graduate training*.

minimal salary that hardly allows to cover living expenses, while if they are considered as employees, low salaries can be contested. The salaries paid by the universities are often not competitive with the salary a university graduate could earn outside the university. One can interpret the situation as an implicit contract between the organisation university and the doctoral student: the doctoral student offers his workforce to the university, and the university offers him a salary that allows covering his living expenses plus the possibility to do earn a doctoral degree and possibly to go on with an academic career. Stephan and Levin, referring to the situation of life scientists in the United States, describe this implicit contract as follows:

> [W]ork hard (at low pay) as a graduate student in someone else's lab and then augment your skills as a postdoc (again at low pay); eventually, sometime in the early 30's – if you are successful in establishing a reputation for serious work – the chance is high that you can open your own "firm" by becoming an assistant professor at a university and successfully receiving funding (...). Stephan and Levin 1997*: 57*

This situation can shape the doctoral students' expectations: they expect that they will earn their doctoral degree within a reasonable time frame. But it possibly also affects the university's behaviour: there might be some pressure to award a doctoral degree also for lower performance, if the doctoral student has been working a lot for the organisation during several years.

Stephan and Levin also underline, however, that the promises in the implicit contract regarding future academic employment do no longer hold true, at least for the United States: more and more researchers remain on post-doctoral positions for a long time (Stephan and Levin 1997). The increase of staff with limited or part-time contracts is also observed in other national higher education systems, and leads to specialisation "according to contractual status": specific academic activities are attributed to staff with limited contracts, for example post-docs or doctoral students (Musselin 2007b: 4f.).

1.2 Developments in society and higher education: new requirements to the doctorate

Over the last decades, interesting developments have taken place in society and higher education, affecting also the doctoral degree. These developments are sources of tensions, and lead also to new forms of organisational structures, both regarding the doctorate and higher education institutions themselves. The function of the university for society receives new interpretations, the role of research, and thus also of the doctorate, is reconsidered. In this section, changes in different dimensions are addressed.

1.2.1 Increase in student numbers and structural changes in higher education

From the 1960s on, the increase in student numbers and in diversity of the student population that affected higher education institutions all over Europe accelerated, however with different intensity among the countries (see for example Kivinen et al. 1999; Enders 2004). Higher education is no longer reserved to an elite population, and equal access is fostered. This increase in student numbers has affected the organisation of higher education. Teaching of large classes instead of small seminars with a fistful of students becomes common in many national contexts and especially in the social sciences and humanities; differentiation in higher education increases (Meek et al. 1996; Enders 2004), and is often proposed as a solution for combining elite and mass education (van Vught 2007).

With the increase in student numbers, also the number of potential doctoral students increases – there are more people formally qualified for doing a doctorate. In the 1990s, the increase in doctoral student numbers was in most Western European countries between 30% more and a doubling of the population; in Spain for example, the numbers doubled between 1990 and 2000, while in Sweden the increase during the 1990s was of 35 percent (Enders 2004; Kehm 2004). Table 1 pictures the increase in the doctoral student population in Switzerland:

year	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2007**
doctoral students total	7'716	10'588	11'670	10'113	13'494	17'232	18'152
doctoral students without medicine (human, dental, veterinary)	6'953	9'273	9'837	8'926	11'208	14'936	15'853

Table 1: Doctoral students in Switzerland

Massification of doctoral student numbers challenges the idea of the doctorate as an apprenticeship, where doctoral students learn by doing research under the close observation of their supervisors (Brown and Atkins 1988; Burgess 1994; Parry 2007). With the increase in student numbers, in many fields the Humboldtian ideal of student and teachers jointly developing research is difficult to maintain. The introduction of organised doctoral training, often inspired by the graduate school model, entailing also a formalised selection process, is seen as possible answer (Kehm 2004; Ulhøi 2005; Teichler 2006).

1.2.2 A changing role for research, diversified academic activities

Higher education, research and innovation are considered important drivers of a country's economic competitiveness, they build cornerstones for what is addressed as *knowledge society* or *knowledge-based economy*. It is seen as necessary for a country or geographical region to dispose of highly skilled knowledge workers in order to be

competitive on an international level, where knowledge, research and innovation become the most important factors for success. With the increased awareness of the importance of research, knowledge and innovation for society and economy, the need for professionals able to understand, construct and re-construct knowledge is addressed.

The interdependency between academia and society has been addressed in the work of many scholars, for example through the concept of the *triple helix* of university-industry-government relations (see for example Etzkowitz and Leydesdorff 2000; Leydesdorff and Meyer 2003; Leydesdorff 2006), or in the 'Mode 2' approach Gibbons et al. 1994 focussing on changes in the way knowledge is produced and underlining the role of application. There have always been bridges between research and society, but their number now has increased (Frank and Meyer 2007). Besides more traditional forms of relationships, such as collaboration, contract work, consultancy or the exchange of students, also more "science-directed commercialization" emerges (Gulbrandsen and Slipersaeter 2007: 117). Entrepreneurship and activities related to business – collaboration with industry, patenting/licensing, or the creation of spin-off companies – become part of the universities' engagements (Gulbrandsen and Slipersaeter 2007). The so-called third mission becomes more and more important (Musselin 2007b): universities not only offer training and do research, but disseminate knowledge through outreach activities to the – local and broader – community, to a larger public; this type of activities becomes part of the daily tasks of the academic profession.

The request for other than purely academic skills exists also in areas closely related to the academic environment: positions in technology transfer offices or at funding agencies for example require the combination of a solid scientific background with (project) management skills. The academic profession changes: besides teaching and research, it includes new tasks concerning for example the acquisition of externally funded projects, the development of e-learning courses, technology transfer and other activities strongly linked to society outside academia (Austin 2002; Musselin 2007b).

In this context, new organisational forms emerge in higher education systems. Stratification of higher education institutions between research and teaching intensive institutions, concentration of engagement in research at the graduate level or the emergence of specialised units devoted exclusively, or at least heavily, to research are examples of new organisational settings. Scholars that have observed higher education systems over decades, as Ben-David or Clark, state that in some systems, research is no longer spread over the whole system, but tends to be concentrated in some parts of it (Ben-David 1992; Clark 1995) – be it in specific institutions or on higher degree levels. In some higher education systems (examples are the U.S., UK and the Netherlands, see Musselin 2007b), specialisation in the academic profession has reached the point where research and teaching are no longer considered as necessarily being linked, clearly teaching- or research-oriented positions are opened. With this increased specialisation,

research tends to be removed from undergraduate training. This makes it difficult to choose doctoral students on the basis of their research abilities, given that they have not yet had much research experience before starting their doctorate.

The diversified functions of the university and the academic profession also influence the setting for doctoral training: doctoral students employed by the universities are not only involved in research and teaching, but also in community services. They perform also tasks in the area of research management, of new teaching forms, and in close interaction with society. On-the-job training as a university assistant can include a broad range of activities, not only directly related to research.

1.2.3 Request for more transparency and organisation in doctoral training

With the requests for the university to provide society with highly skilled people able to manage and understand research, the doctorate becomes an issue of interest also outside academia, and governments start addressing the topic. In Europe, regulation of doctoral training has started also on a international level; with recent developments such as the goal for Europe to become, by 2010, "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion" (Lisbon European Council 2000), and the inclusion of the doctorate in the Bologna process, the doctorate is situated at the interface between the European Higher Education Area (EHEA) and the European Research Area (ERA). The doctorate was not yet included in the Sorbonne (1998) or Bologna (1999) declarations nor in the Communiqué of the Prague conference (2001); but it was put on the agenda in the Berlin Communiqué (2003), with the aim of designing a European doctoral degree.

The degree's appropriateness for the labour market and employability of doctoral degree holders are often addressed issues (Kivinen et al. 1999; Crosier et al. 2007; Kehm 2007a; Kehm 2007b). As an answer to the inclusion of the doctoral degree in the Bologna process and of the recognition of the importance of research training for the EHEA and ERA, several bodies have worked on recommendations for doctoral training. The *Dublin Descriptors* (Joint Quality Initiative 2004b) for example include, besides research and communication abilities within the academic setting, the request that third cycle degree holders are "able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society" (Joint Quality Initiative 2004a: 3). Similarly, also the *Salzburg principles* (Salzburg Bologna Seminar 2005) recognise the need for employability in a wider market outside academia.

The doctorate is addressed in the Bergen Communiqué (2005), underlining that a doctorate should not only prepare for academic careers. The London Communiqué

(2007) focusses issues such as the need to improve the status of doctoral students, but also their career prospects and funding and wishes doctoral programmes to be integrated in institutional strategies and policies. Other examples of policy documents including recommendations on the doctorate are *The European Charter for Researchers* and *The Code of Conduct for the Recruitment of Researchers* by the European Commission (2005). But even though common international standards and regulations are aspired at, diversity in doctoral training is considered a strength of the European system (CRUS et al. 2004; EUA 2007).

With the increasing interest of society for the doctorate, the request for transparency, for example regarding admissions and programme structure, increases as well. There is a tendency towards the request for and the introduction of structured programmes. Kehm (2007b) observes that with this tendency, the responsibility tends to shift from the individual to the institutional level. Also, new forms of doctorates, for example professional doctorates, emerge (Green and Powell 2005). It remains, however, interesting to understand to what extent these formal changes in the doctorate influence on the process and the degree as such.

1.3 From training for the academic profession to training for different types of careers

These changes and developments in society and higher education show that the doctorate cannot be considered a unique degree preparing only for a career in the academic[5] environment. There are situations of doctorates where socialisation occurs no longer primarily into a scientific community, for example when aimed at a non-academic career. Different types of doctorates develop. In this section, differentiation in the doctorate is addressed.

[5] The term *academic* is a rather broad term that can include a variety of situations. To what extent, for example, a higher education institution can be characterised as academic can depend on different factors, including the national context, traditions and history that form the higher education system, but also the institution's position within this system (see for example Bleiklie 2008). Therefore, also the notion of "academic career" can refer to different types of situations, for example in a university combining teaching and research, in a university of applied sciences where research is often of a more applied type, or a career as a researcher at a public or private research institute. But also a career as a consultant or expert that involves familiarity with the research environment could, at least to a certain extent, be considered as academic. Thus, the distinction between "academic" and "non-academic" or "professional" is not a binary one; rather, the two concepts can be placed on the two extremes of a continuum; it is not possible to define one type of academic career.

1.3.1 An important degree inside and outside academia

In many national contexts, the doctorate is the highest academic degree one can achieve[6]. As such, it benefits of a certain prestige in society, it is seen as a sign of a person's intellectual ability. In many countries, there has been a general decrease "in the status of academics in terms of income, prestige, or social positions" (Musselin 2007b: 2, referring to Henkel 2000), but a doctorate often has a certain value outside academia (for Austria see Pechar and Thomas (2004), for Germany see Hüfner (Hüfner 2004)). This is, however, not the case in all countries: in France for example, graduates from the Grandes Ecoles – which cover, however, only a small part of the population – have much better chances on the labour market than doctoral degree holders, even though their academic training lasts "only" five years, while doctoral degree holders have done eight years of university training (Dahan 2007).

With the increasing importance of knowledge in society, the request for training has increased also at the graduate level. Lifelong learning is considered to be necessary for individual, but also collective success. Some sectors have developed prestigious post-graduate degrees different from the doctorate, for example executive Masters such as the Master of Business Administration (MBA) in business studies or the Master of Laws (LLM). So a possibility of answering increased request of post-graduate training, and thus of differentiation on the postgraduate level lies in the implementation of other types of degrees besides the doctorate.

Medical studies are an interesting field in this concern as well: in many national settings, the medicine doctorate is criticised for its low requirements – a dissertation is more similar to a master thesis than a research doctorate in other fields. So the question emerges whether this degree really fulfils the requirements of a doctorate. This points at questions about the core of the doctorate. In some national contexts, the idea of replacing the doctorate in medicine with a research doctorate no longer taken by nearly all graduates is currently discussed (see Probst et al. 2008).

The importance of research training and doctoral degrees increases also in the vocational higher education sector: members of institutes in this sector (often referred to as universities of applied sciences) tend to enhance their scientific production, to do research and possess a doctoral degree becomes important also in the vocational higher education sector (*academic drift*: see for example Morphew 2000; Kyvik and Skodvin 2003; Kyvik 2004).

[6] A higher degree than the doctorate exists for example in Germany and in the German speaking part of Switzerland: the *Habilitation*. The importance of this degree, however, is decreasing; differences among disciplines apply.

1.3.2 Different types of output – different types of knowledge developed?

As has been shown above, the doctorate cannot be considered as a homogeneous degree producing only one type of output. Doctorates vary among countries and disciplines, and developments in higher education and society have added to an increasing differentiation of the requests and constraints put on doctoral training and the resulting degree.

Differentiation in the required output also means differentiation in knowledge and skills that are developed during a doctorate. As Bleiklie (2003) puts it when generally looking at the type of knowledge developed in different higher education institutions, training for vocational purposes is not the same as training for academic purposes. While vocational training, more strongly linked with the concrete professions, focuses mainly on specific content and is deeply linked with the higher education institution's connections to the labour market, the training provided "in academic disciplines at the free university faculties" (Bleiklie 2003: 345) often leads to more general, transversal abilities for example regarding the collection and processing of information. According to Bleiklie, academic training provides a procedural-type of knowledge, knowledge on methods and processes, the ability to elaborate knowledge and develop it further; vocational training focuses on the development of content knowledge and its concrete application in the specific environment (Bleiklie 2003). Is it conceivable that one and the same institution trains (doctoral) students in both? Dahan (2007) suggests that it is not possible to transmit a professional identity one does not own – so how can a professor that is completely immerged in the academic environment transmit an identity that is useful for the professional job market outside academia?

When doctoral training leads to the development of different types of knowledge and competencies, and thus to a different output, another interesting question regards the evaluation of the doctoral student's achievement and thus also the final grade given. Bleiklie (2003) states that in integrated higher education systems, the basis for valuation is built by "academic ideals with their theoretical and methodological standards" (Bleiklie 2003: 347). This might happen also on the level of doctoral training: in fields with a strong theoretical tradition, doctoral students working towards a more professional kind of doctorate face a high probability to be evaluated based on academic criteria, and thus risk to get lower grades because of the different orientation of their work. Depending on disciplinary traditions, this might also happen the other way round – for example when a purely theoretical dissertation is written in a field with a strong focus on application. As the distinction between academic and professional, however, is rather a continuum than a dichotomy, also evaluation criteria are not necessarily either academic or professional, but can occur in shades.

1.3.3 Differentiation in doctoral training: different ways

The so far presented discussion shows that over the last decades there have been some changes affecting research training. The student numbers increased and therefore the student population also became more heterogeneous, the role of research in society changed, external pressures on the output of doctorates – the trained people – grew.

Beliefs about the doctorate as an individual affair between a doctoral student and a supervisor are challenged. As the discussion presented above (see 1.2.3) has shown, the increased interest from society in this degree has also raised pressure to make it more transparent – lack of transparency in terms of admission and process is an often-criticised point, and so is efficiency in training. High levels of attrition and long time-to-degree are addressed, the suitability of the degree in terms of employability of doctoral degree holders on the wider employment market is often discussed. To make it short: efficacy and efficiency of the doctorate are often-addressed issues.

Diversity is often supposed to be the solution to many of the addressed challenges:

> Diversified higher education systems are supposed to produce higher levels of client-orientation (both regarding the needs of students and of the labour market), social mobility, effectiveness, flexibility, innovativeness, and stability.
>
> van Vught 2007*: 6*

Today, the doctorate is a heterogeneous construct serving different masters. How can this heterogeneity be addressed? The international trend to introduce different types of doctorates such as for example the professional doctorate shows that differentiation is a possible answer. But differentiation in the doctorate can occur in different ways.

Institutionalised differentiation

In some systems, differentiation is institutionalised through the introduction of new types of doctoral degrees (Kehm 2004; Boud and Tennant 2006). In the United Kingdom for example the PhD is still the common way to do a doctorate for full-time students, but other forms have emerged: the Doctor of Engineering (EngD), a four-year full-time programme including close interaction with industry; the New Route PhD, a degree mainly for those planning a career in commerce or industry, where approximately 40 percent of the four-year programme is formal coursework and the remaining 60 percent consists of research training and the thesis; professional doctorates in specific areas, such as the Doctor of Education (EdD) or the Doctor of Business Administration (DBA), also more structured than a traditional PhD and emphasising group work. Additionally, doctorates on the basis of published work and performance-based doctorates (especially in the performing arts) are possible (Taylor 2004).

Also in the United States, types of doctorates vary considerably among disciplines and even institutes. A doctorate in the U.S. always requires approximately two years of coursework, examinations and a dissertation. In applied areas such as education or management studies, "'executive' doctorates" (Altbach 2004: 262) have emerged, for example the Doctorate of Education (EdD). In these professional doctorates, doctoral theses often consist rather in descriptive presentations of projects than in original research (Altbach 2004).

Both in the United States and in the United Kingdom, however, there are voices that "believe in the pre-eminence of the PhD as a research degree and consider the new formats to be inferior – a less demanding form of study" (Taylor 2004: 245) and see this trend towards new forms of doctorates as "'cheapening' the traditional Doctoral degree" (Altbach 2004: 264).

An interesting case of institutional differentiation in postgraduate training is Sweden: traditionally, there were two types of postgraduate degrees, a licenciate degree and the doctorate. In 1969, a reform abolished the licentiate degree, which, however, was again introduced in the early 1980s on demand from business and industry (Mähler 2004).

Other forms of differentiation

In many higher education systems, however, this "diversity in the form of provision" (Boud and Tennant 2006: 294) is not institutionalised through different types of doctoral degrees among and within institutions and disciplines. Especially where all higher education institutions with the right to award doctoral degrees are considered equal – in organic systems (Bleiklie 2003) - and thus there is no formal stratification within these institutions, stratification in doctoral degrees can be difficult. For example when the right to award doctoral degrees is a distinctive feature of traditional universities and universities of applied sciences are mainly responsible for vocational training, it is difficult to think of an officially introduced professional doctorate – the official recognition of such a degree would undermine the fundamental structure of the binary system.

There are also higher education systems showing that institutionalised distinction between research and professional doctorates is not indispensable in order to provide employability outside academia – in Germany and Austria, both higher education systems without official differentiation in doctoral degrees, doctoral degree holders always have found positions outside (Kehm 2004). The same holds true for Switzerland.

When normative differentiation in the doctorate is not officially recognised, other forms of differentiation apply. Clark (1996: 22f.), when writing about national higher education systems, uses the terms "nominal integration" and "operational differentiation" to characterise a situation where all higher education institutions are

called universities, and it is declared "that all institutions are common parts of a single unified national system" (Clark 1996: 22)– nominal integration – but in reality the institutions are different, due to trends as decentralization and differentiation of funding. These concepts can be applied also to doctoral training.

Pechar and Thomas (2004) report the case of a doctoral programme in an Austrian university that is not officially recognised as professional doctorate, but shows features of such a programme: in its organisational setting, it fits the needs of adults with professional activities, it requests professional experience as admission criteria – it is conceived "as a theoretical reflection of professional experience" (Pechar and Thomas 2004: 34).

Regarding the Netherlands, de Weert (2004) illustrates the increasing variance with two examples: collaboration between universities and industry increases in doctoral training, thus there are doctoral students doing their research as professional work in a company, while the university covers the more formal training; as second example, he points at the tendency to make different types of postgraduate courses, for example in engineering, more similar to doctoral education.

The introduction of graduate schools[7] can also be used as a way of operationally differentiating the doctorate. This differentiation, however, is only possible where graduate schools are not the norm, thus for example in Austria, Switzerland or Germany, and not in places where all doctoral students are members of graduate schools, as in Italy for example. In Austria, also due to a lack of resources, only a few graduate schools exist. They are very selective and conceived as elite programmes. They are granted only to (usually trans-disciplinary) groups of scientists with high qualifications on an international level (Pechar and Thomas 2004). In Germany, graduate schools (*Graduiertenkollegs*) have been introduced since the 1990s. Admission is selective and on a nation wide and competitive basis (Enders 1999). In Switzerland, a national programme for funding graduate programmes especially in the social sciences and humanities has been introduced only recently (see section 2.2 for more details).

Operational differentiation can apply both when different doctoral degrees are officially recognised and when they are not. There are, however, also situations where neither differentiation in terms of different degrees nor official diversity in the form of provision exists: for example regarding the majority of doctoral students in Germany, Austria and Switzerland (those not included in graduate schools), or in contexts where only one type of graduate schools exists. The discussion presented above, however, shows, that the future careers of doctoral students cover a range of possibilities also outside academia,

[7] There are different terms for indicating organised training at the doctoral level. In this text, I use "graduate schools" for organised forms of doctoral training officially implemented and including also institutional structures.

thus doctoral degree holders perform different roles in their future life. It is therefore interesting to understand whether and how the systems adapt to this external demand and produce operational differentiation in the doctorate, and thus differentiated output, also when no official differentiation is possible.

1.4 Underlying research questions: understanding differentiation

When analysing differentiation, it seems reasonable to address the following three questions: a) How does differentiation look like: what types of doctorates emerge? b) Which factors have an impact on differentiation? And c) When in the process does differentiation occur? In the following passages, I indicate some reflections on these questions, which represent also the guiding questions for my study.

Characterising the doctorate: types and criteria

Before looking at why and where differentiation occurs, it is necessary to find out how differentiation is manifest in the doctorate – what different types of doctorates exist? Which types of socialisation processes occur, how do they look like, which doctoral students experience which type of socialisation? In what types of communities to they participate, and how intense is this participation?

The aim of this first step is thus to group the situations encountered in the interviews in clusters of similar situations and to identify criteria that differentiate them. It is for example possible to imagine that the clusters are differentiated in terms of degree of involvement in research or of future career possibilities. Do the emerging clusters, to some extent, correspond to officially differentiated forms of doctorates from other countries, or to different organisational forms?

Based on a general presentation of diversity in the doctorate in Swiss communication sciences (chapter 3), I will construct different categories of typical situations of the doctorate. They are presented and discussed in chapters 9 and 10 (part C).

Impact of contextual and individual factors

When a characterisation has emerged, it is then interesting, as a second step, to understand which are the factors that influence on it – to find out whether there are factors that determine the affiliation of a doctoral student to a specific group, whether there are factors that impact on the type of socialisation that occurs. Do contextual (macro) and individual (micro) factors influence on the differentiation?

On the one hand, the disciplinary, national and organisational context is said to have an impact on doctoral training. Is this reflected in the sample? Is it possible to identify different tribes and territories, and different doctorates among them? Do for example all doctoral students from one university or all doctoral students working in a similar topic

environment belong to the same clusters? Is it possible to compare the situations in the clusters to what has been characterised, in the international literature, as typical situations for specific disciplines or countries?

On the other hand, a doctorate is something that is done by individuals. Doctoral students engage in their project for several years, the doctorate becomes an important part of their life for this period. Also supervisors dedicate a considerable amount of time to the doctorates they supervise. Therefore, one can expect that individual characteristics, motivations, attitudes, expectations have an influence on the process. Besides facts and narratives on how the doctorate looks like, it is therefore also interesting to look at the ideas, wishes, expectations and positions of the actors most intensely involved in the process of the doctorate: doctoral students and their supervisors. Do their interpretations of the doctoral myth correspond? To what extent do for example motivation for doing a doctorate, plans for the future, supervision or ideas about what a doctorate is (both from the doctoral students as from the supervisors) influence on the process of the doctorate?

These questions are addressed through the presentation and discussion of results in part B and C, but mainly focused in section 9.3.

The process: when does differentiation occur?

In a context as the one at hand, differentiation cannot happen on a normative level and does not happen on a large-scale organisational level. Therefore, the third question is whether, how and when differentiation occurs. Is it already clear at the beginning of the doctorate where a doctoral student will go to in his future life? Is the doctorate organised according to these plans?

Given the trend towards a shift of research towards the graduate level, it is difficult to know already at the beginning of the doctorate whether a doctoral student is made for the research profession, whether he will like it and succeed in it or not. One can thus expect that differentiation is an on-going process during a large time of the doctorate.

Where are the points in the doctoral process in which the course is set? What meaning do doctoral students and supervisors attribute to the doctorate, and how does this meaning change? What is the influence of the supervisor, but also of other members of the academic community and of the direct environment of the doctoral student? What about the doctoral student's own initiative? How much can the individuals influence this differentiation, and how is it negotiated?

These questions are addressed through the analysis of pathways of doctoral students. Pathways are presented and discussed through the presentation of examples and general considerations in chapter 10.

1.5 Short conclusions and outlook

In this first chapter, the topic of the doctorate has been addressed from different points of view. The chapter started with considerations of possible interpretations of the doctorate, presenting it as a multiple socialisation process, as a learning and selection period, as a social and cultural construct and as an element of organisation.

Secondly, developments in higher education and their influences on the doctorate have been presented. The doctorate is confronted with increasingly diversified requirements from society and economy, but also from inside the academic context, as the tasks covered by the academic profession broaden. Employability of doctoral degree holders becomes an important issue. The doctorate is no longer only an internal affair of the academic community, but society is interested in it as well. This is reflected in an increase in policy documents on higher education addressing also the doctorate, the most prominent example probably being its inclusion in the Bologna process.

With this increased diversity of requirements, the doctorate cannot be regarded as preparing exclusively for an academic career; different types of output are claimed. In some contexts, differentiation in the doctorate is officially institutionalised through the introduction of other types of doctorates, particularly professional doctorates. In other contexts, differentiation occurs on the organisational level, through different types of training. But there are also more implicit forms of differentiation.

This leads to the research question underlying my dissertation. It is interested in understanding diversity in the doctorate and differentiation leading to this diversity in a particular context: communication sciences in Switzerland – thus a highly diversified field in a country characterised by regional autonomy in the doctorate.

To present this context is the aim of the following two chapters: first (chapter 2), the Swiss higher education system and the doctorate in Switzerland is addressed, and secondly (chapter 3), a closer look at the field of communication sciences, including also the doctorate in this field, is offered. This first part then concludes with a presentation of characteristics of doctoral students in communication sciences in Switzerland, based on the sample of this study as well as on a recent survey by the Swiss Association of communication and Media Research SGKM (chapter 4).

2 The doctorate in Switzerland

Switzerland is a federal country geographically situated at the heart of Western Europe. It is not part of the European Union, but strongly connected to it through a number of bilateral agreements in different areas, including research and education. Since 1987, researchers from Switzerland could participate in the European Research Framework Programmes under specific conditions. Since 2004 and the 6th Framework Programme, Switzerland is an associated country to the programme and thus fully participates in it. Switzerland was among the first countries to sign the Bologna declaration in 1999 (CEST 2007). Bologna requirements now have been implemented in nearly all higher education institutions and fields.

In this chapter, I present characteristics of the Swiss higher education system that are relevant for doctoral training. First, general characteristics of the Swiss higher education system are presented, while in the second section the focus is on the doctorate. More information on the Swiss higher education system can be found in Perellon and Leresche 1999; OECD 2003; Perellon 2003; Benninghoff 2006; SER 2006; Braun and Leresche 2007; Filippini and Lepori 2007; Fumasoli 2007; Lepori 2007a; 2007b; 2008.

2.1 The Swiss higher education system: diversity and self-coordination

In this section, some general features of the Swiss higher education system that are of relevance for this study are addressed, including the regional character and the system of coordination by consensus on a national level. These characteristics entail that there is no national framework for the doctorate.

2.1.1 Cantonal authority, autonomy and diversity

Switzerland is a federal country based on the principle of subsidiarity. Although an attempt to include this principle explicitly in the Swiss Constitution was overruled in the 1990s, the Constitution limits the power of the Confederation. In this system, competencies regarding higher education exist on two levels: the Confederation (the national level) and the Cantons (the regional level). The Confederation is the supervision and funding body for the two Federal Institutes of Technology (FIT), while 10 the universities are under cantonal authority and only partly funded by the Confederation. 7 Universities of Applied Sciences (UAS, *Fachhochschulen, Hautes écoles spécialisées, Scuole universitarie professionali*) are funded by the cantons and the Confederation and mostly organised in collaboration of several cantons in a region; one UAS is a private

institution. All three types of higher education institutions are engaged in research, but only cantonal universities and FIT have the right to award doctoral degrees[8].

Currently, a new law regarding the promotion and coordination of higher education, the *Bundesgesetz über die Förderung der Hochschulen und die Koordination im schweizerischen Hochschulbereich,* is being elaborated. It is supposed to set the stage for a closer cooperation between the Confederation and the Cantons and foresees a common coordination of the whole higher education system by these two levels, through contracts and assignment of competencies to common institutions (Confoederatio Helvetica 2007; SBF and BBT 2007; Confoederatio Helvetica 2008). The draft law, based on the acceptance of a new higher education paragraph in the Swiss constitution through the Swiss population in May 2006, has been prepared, and in January 2008 consultation was concluded. It is planned to implement he new law by 2012, but currently a consensus is not yet reached.

The actual situation implies a certain amount of diversity regarding organisation and legislation of higher education, leading also to different types of governance at the institutional level (Fumasoli 2007). This is reinforced by the fact that Switzerland is composed of different linguistic and cultural regions and surrounded by countries of the corresponding languages. This is reflected in the higher education system and visible also on the level of the doctorate.

In every one of the three main linguistic regions – of German, French and Italian language – at least one university exists. Communication sciences can be studied in all three linguistic regions, and there are currently doctoral students in the field in all three linguistic regions. Communication sciences are not taught at the Federal Institutes of Technology, and Universities of Applied Sciences are not entitled to award doctoral degrees. Therefore, in the following I concentrate on the cantonal universities.

2.1.2 Self-coordination through the Rector's Conference

At the level of the cantonal universities, each one under the authority of the hosting canton, currently two important coordinating bodies at the national level exist: the Rector's Conference of the Swiss Universities (CRUS) and the Swiss University

[8] The UAS were provided with an applied research mandate since their creation, with the idea that they would provide regional economy with technology support. Since their creation in 1995, UAS have increased their research activities considerably. The applied mandate, however, is a normative construct that is difficult to fulfil in fields outside technology: it is not clear where to set the border between applied and basic research for example in social sciences, and thus in some fields UAS compete with universities. In the areas outside technology, university graduates and doctoral degree holders are often employed in UAS (Lepori 2008). The UAS are still growing in terms of student numbers, and consequently also job positions, and thus represent an interesting employment opportunity both for doctoral students (being enrolled for the doctorate at a university, but employed by a UAS) and doctoral degree holders.

Conference (SUK). Overall, there seems to be a trend in the Swiss higher education system towards more autonomy for the university directions (Lepori 2007a).

The SUK is a common body of the Confederation and the Cantons, thus representing the legal and financial background, while the CRUS is composed of the rectors or presidents of each university, representing the institutions more from the managerial and academic point of view.

As there is no national body that can implement reforms and structures in a legal way that is binding for all universities, changes occur on a voluntary basis. In this framework of soft coordination, the CRUS plays an important role. For example regarding the implementation of the Bologna reforms, it was the CRUS to decide on the planning and to coordinate the implementation among the universities – a successful endeavour, as by now the reforms have been implemented by all universities and in most study courses. The CRUS cannot work on the basis of laws and regulations, but with recommendations that are agreed on by its members, and is thus based on mutual consensus. So coordination occurs by consensus, based on common agreements.

For the period 2008-2011, the CRUS has decided to put one focus of its work and funding on doctoral training. Together with the Swiss National Science Foundation, it funds graduate schools (see 2.2.3) and accompanies the universities in the implementation of reforms in doctoral training.

2.1.3 No legal overall framework for the doctorate

The 10 cantonal universities and the 2 Federal Institutes of Technology have the right to award doctoral degrees. Thus, most of the doctorate awarding institutions are under cantonal authority, and there is no national legislation or overall framework regarding doctoral training in Switzerland.

The organization of doctoral training differs between the regions. A study commissioned by the Swiss Science Council in 1997 reported that a dissertation has a different signification in the French and the German speaking part of Switzerland (the Italian speaking part at the time was excluded from the study, since the university started its activities only in 1996): A doctorate in the French speaking part seems to have less value on the market outside academe than a doctorate in the German speaking part of Switzerland. In the French speaking part, a doctorate also requires a bigger investment of time and effort, while in the German speaking part there is the *Habilitation* that might complete a dissertation, an element that doesn't exist in the French speaking part (Lévy et al. 1997). However, disciplinary differences apply.

After a doctorate in the German speaking part of Switzerland, the general academic career path foresees other positions as assistants (*Oberassistenten*) for about five years

during which the candidate prepares his *Habilitation*, while the post-doc period in the French speaking part usually lasts about 1-2 years, after which doctoral degree holders can apply for a professorship (CEST 2007).

In the French speaking part, the idea of a doctoral school, inspired by the French model and including the preliminary degree DEA (Diplôme d'Etudes Approfondies), is already widespread, while it is gaining ground only recently in the German speaking part, where, at least in social sciences and humanities, the individual supervision model is still largely prevalent. In the French speaking part, the defence of the doctoral thesis is a ritual of a few hours including an intensive scientific discussion with international experts, while in the German speaking part of Switzerland, the defence tends to be shorter and can be more similar to an examination (CEST 2007).

2.2 Doctoral training in Switzerland: claims for better conditions and new programmes

After having presented some general features of the Swiss higher education system, this section illustrates the doctorate in Switzerland. It first presents some numbers about the situation of doctoral students in this country concerning all fields of study and then addresses recommendations that resulted from studies conducted in Switzerland in the last decade.

2.2.1 The situation of doctoral students in Switzerland

Switzerland is among the European countries with the highest intensity of doctorates when compared to the number of students (Lepori 2007a). The internationality in doctoral student population is high: overall, about 40% of all doctoral students come from foreign countries, at the FIT this number arises to more than 50% (CEST 2007). In 2007/08, 16.3%[9] of the students (including traditional diploma, Bachelor, Master and doctoral students) enrolled at Swiss universities were preparing a doctoral thesis (Table 2); 1'736 among them in social sciences (8.8% of all students in this field), among them 137 in communication sciences (5.7%[10]). In sciences (29.1%) and engineering (20.3%) the share of doctoral students among the whole student population is highest[11]. This can be interpreted as an indicator of the high share of research activities in these fields.

[9] In this section, numbers refer to 2007 for the professors and assistants and to the academic year 2007/08 for doctoral students and students (source: Swiss Federal Statistical Office)

[10] This low number might be explained by two reasons: on the one hand, the young age of the field, on the other hand the fact that in many places, communication sciences are much more intensively selected as minor than as major (in some places it is not or only since recently possible to study it as a major), and thus student numbers are artificially high.

[11] It is even higher in the field of medicine and pharmacy. In this field, however, the doctorate has a different status and is therefore not comparable to the doctorate in other fields. Additionally, it is not clear whether official

	doctoral students (persons)	students (BA, MA, diploma)	doctoral students as % of students
social sciences and humanities	4559	35357	11.42%
social sciences	1736	18044	8.78%
communication sciences	137	2232	5.78%
economics	1586	12919	10.93%
law	1606	11800	11.98%
sciences	5424	13307	28.96%
engineering	2208	8683	20.27%
medicine/pharmacy	2655	8354	31.78%
overall	18152	93410	16.27%

Table 2: Students and doctoral students at Swiss universities, 2007/08

In Switzerland, and especially in the social sciences and humanities, there are not many scholarships available for doctoral projects. Thus, most doctoral students need other funding sources. Often, they are employed by the university where they are enrolled for the doctorate; they work for example on Swiss National Science Foundation (SNSF) basic research projects[12], sometimes with a strong link to their own dissertation project, on projects funded by other sources, as teaching assistants, in administration, or they combine different projects and tasks. In 2007, there were 22'070 (15'002 FTEs) assistants and researchers employed by Swiss universities – it is likely that the 18'152 doctoral students count for a good share of this number.

While doctoral students provide a good share of the work done at universities, their chances for careers inside the universities are rather low: compared to the 18'152 doctoral students (2007/08), in 2007 there were 3'227 professors (2'849 FTEs, including *Ordinariate, Extraordinatiate* and assistant professors) and 7'262 other teachers (2'772 FTEs, including *Privatdozenten, Lehrbeauftragte, Lektoren* and *Gastdozenten*) employed at Swiss universities. At the UAS, there were 5'340 professors (3'682 FTEs) and 18'850 other teachers (2'150 FTEs) employed. There, the assistant to professor ratio is completely different than at the universities: In 2007, there were 4'331 assistants (2'043 FTEs) employed at the UAS, thus less than professors. At UAS, part-time employment as teachers and professors is more common than at the universities.

A closer look at the numbers reveals variation among the domains (see Table 3). While in the social sciences and humanities, in economics and particularly in law there are more doctoral students than assistants, in the other areas (sciences and engineering) there

data refer to the medical doctorate nearly every medical student pursues or whether they refer to the research doctorate, which is more similar to doctorates in other fields. Therefore, data for this field have to be handled with care. I present them in the tables, but do not refer to them in the text.

[12] To use project funding as an instrument for the promotion of young researchers is part of the strategy of the SNSF.

are more assistants than doctoral students. Thus, in these sectors there seem to be many assistant and (probably mostly) research positions hold by people who are not pursuing a doctoral degree at the moment, probably most often by people that already have earned this degree (post-docs, researchers). In law, there are many doctoral students not employed by the university – this showing probably also the professional character of the doctoral degree in this field – and the ratio between FTEs and the number of assistants, and thus the medium percentage of employment of assistants, is lowest. This is highest in sciences and engineering, the two areas where also the ratio between doctoral students and professorship positions is highest, meaning that the possibilities for an academic career ending with a professorship is lower in these areas. This ratio is high also in law, but probably for other reasons: While in law the doctorate is an important degree for a professional career, in science and engineering there are many research positions outside academia, for example in the pharmaceutical industry, or in research institutes. Economics and law seem to be fields where professors tend to have more appointments outside academia than in other fields (the rate between FTEs and positions being lower, see Table 3 and Table 4).

	professors (persons)	assistants (positions)	doctoral students (persons)	doctoral students / assistant positions	doctoral students / professor positions
social sciences and humanities	848	4'267	4'559	1.07	5.38
economics	339	1'507	1'586	1.05	4.68
law	249	1'048	1'606	1.53	6.45
sciences	771	7'213	5'424	0.75	7.04
engineering	314	4'176	2'208	0.53	7.03
medicine/pharmacy	656	3'194	2'655	0.83	4.05
overall	3'227	22'070	18'152	0.82	5.63

Table 3: Professors, assistants and doctoral students at Swiss universities (2007/08)

Teaching intensity is higher in social sciences, economics and law than in sciences and engineering (Table 4). Here, the high share of doctoral students in the latter fields is reflected: the doctoral student to professor (FTE) ratio is similar among all fields, while the student to professor (FTE) or student to assistant (FTE) ratio shows clear differences, with there being nearly eight time more students per assistant in law than in the sciences.

	prof FTE	ass FTE	student / ass FTE	student / prof FTE	doctoral student / prof FTE
social sciences and humanities	755	2'573	13.74	46.83	6.04
economics	253	893	14.47	51.06	6.27
law	199	615	19.19	59.30	8.07
sciences	740	5'316	2.50	17.98	7.33
engineering	288	3'011	2.88	30.15	7.67
medicine/pharmacy	570	2'214	3.77	14.66	4.66
overall	2'849	15'002	6.23	32.79	6.37

Table 4: Student-professor and student-assistant ratios (2007/08)

These numbers show a clear difference between social sciences and humanities, including economics and law, and the sciences and engineering fields: while the former are teaching intensive, with high numbers of undergraduate students, the latter are rather research intensive (see also CSS 1993; BBW 2002; Lepori 2007a). In sciences and engineering, doctoral students often work on research projects, in research teams composed of doctoral students, post-docs and professors, while in social sciences doctoral students are often employed as assistants with tasks in the areas of teaching, management and student supervision; their research activity besides the doctoral project is often limited.

2.2.2 Recommendations for doctoral training: towards more organisation and transparency

Thus, it is not surprising that doctoral training and the situation and promotion of young researchers especially in social sciences has been a topic of different studies in the last years (see for example Lévy et al. 1997; Meyer and Nyffeler 2001; SWTR 2001; BBW 2002; Baschung 2007). Actionuni, the Swiss researchers' association, is currently conducting a study on the situation of the academic *Mittelbau* (middle-level staff), thus including doctoral students working as assistants at universities).

There is a general tendency in the recommendations of all authors favouring the implementation of graduate/doctoral programmes, but also the need to take into account the characteristics of the different disciplines is pointed out. Claims for clearer definitions and recognitions of tasks doctoral students accomplish in their role as research/teaching assistants are made – for example to valorise not only research but also teaching activities (Lévy et al. 1997). Insufficient funding is a topic of complains, claims for more financial support in terms of scholarships as well as for the implementation of graduate schools are made (for communication studies see Blum 2004). Doctoral students in social sciences fields are often overloaded with teaching and administration

work and do not have enough time to develop their own research (Lévy et al. 1997; BBW 2002).

Possible career paths within academic context in Switzerland are not very clear and unified, there are not many stable positions between the lower middle-level staff and professorships. Besides the missing possibilities, the academic career has also lost in attractiveness and there are interesting career possibilities for university graduates in the private sector, at public administration institutes and also at the Universities of Applied Sciences (BBW 2002).

So there is a general claim for the introduction of more organised doctoral training and more transparency and planning in academic careers, in order to make them more attractive (Lévy et al. 1997; Meyer and Nyffeler 2001; SWTR 2001; BBW 2002; for communication see for example Bonfadelli 2007). In 2004, a common declaration of the rectors' conferences of German speaking countries was made, which promotes more structured, organised doctoral training (CRUS et al. 2004). In the strategy 2008-2011 of the Rectors' Conference of the Swiss Universities, the enhancement and dissemination of the doctorate is a central element (CRUS 2006).

Different Swiss bodies – the CRUS, the Conférence universitaire de Suisse occidentale CUSO and the Swiss National Science Foundation SNSF – have accepted the *European Charter for Researchers* and the *Code of Conduct for their Recruitment* (European Commission 2005) between 2005 and 2007 (CEST 2007); the leaders of the higher education institutions are responsible for its implementation. This charter regards doctoral students as early stage researchers and is a basis for an improvement of their status and employment conditions.

2.2.3 Funding for young researchers: individual and graduate school funding

The Swiss National Science Foundation SNSF is the main funding body of scientific research in Switzerland. It funds projects, but also programmes and individuals, and different programmes for the promotion of an academic career have been implemented in the last decades. Some of the programmes for individuals refer to doctoral students and young researchers, and therefore are of interest here[13]. An important programme regarding academic career for holders of a doctorate is the *SNF Professorships* programme launched in 1999 by the Swiss National Science Foundation SNSF. This programme allows highly qualified young researchers to build up their own research team and carry out their research project. Recently, the SNSF has launched the programme *Ambizione*, a programme that allows post-doc researchers to conduct

[13] http://www.snf.ch/e/funding/individuals/seiten/default.aspx (16.06.2008)

independently their own research project. A necessary condition for this fellowship, which has a maximum duration of four years, is that the applicant has spent at least 12 months at a different higher education institution then where he was awarded the doctorate, preferably abroad. Additionally, this programme aims at attracting the best young foreign researchers to conduct their research in Switzerland. An instrument for the promotion of doctoral students are the SNSF *fellowships for prospective and advanced researchers*, which allow young scientific talents to spend a period of training and further education abroad.

In 2006, the SNSF has established a new funding programme for graduate schools primarily in social sciences and the humanities: the *Pro*Doc* programme. Pro*Docs are organised doctoral programmes involving at least 12 doctoral students. The aim of this programme is to enhance quality of training and to reduce the duration of a doctorate by allowing the doctoral students to concentrate on their research project and training. Pro*Docs are built on a modular structure. Through research modules, the salaries and research expenditures of a maximum of ten doctoral students are covered. Research modules are linked to a training module that complements them with training and management activities. Doctoral students that are part of the Pro*Doc but not included in the research module are not eligible for funding through the Pro*Doc, thus their funding situation corresponds to that of doctoral students outside Pro*Docs: they either work as assistants or have other external funding sources, such as a job outside the university, a grant or private means.

In the years 2006 and 2007, a total of 14 Pro*Docs have been accepted by the SNSF. 12 of these Pro*Docs are situated in the area of social sciences, one in mathematics, sciences and engineering and one in biology and medicine. Most of these Pro*Docs are organised by a group of professors from different universities. A total of nearly 100 doctoral students are financed directly through the 43 granted research modules. Three of the Pro*Docs of the first round cover doctoral students from the area of communication sciences (see 3.3.1).

For the years 2008-2011, SNSF and CRUS decided to pool the available finances for the promotion of doctoral students. Thus, there is now a total budget of more than 90 Mio. CHF for the new ProDoc[14] programmes in all disciplines. Every ProDoc is foreseen to include 20 doctoral students; up to ten of them can be salaried through research modules (SNF 2007). In order to enhance networking, ProDocs must involve doctoral students and supervisors from at least two different universities (SNF and CRUS 2007).

[14] With the collaboration of SNSF and CRUS in these matters, the name has changed fro Pro*Doc to ProDoc.

2.3 Short summary

This chapter has presented an overview on the Swiss higher education system, which is characterised by a rather high autonomy of the regional level. Therefore, no national framework for the doctorate exists, but it is regulated at the level of the individual universities. Coordination occurs by consensus, as well as through funding programmes.

The chapter also has presented some numbers on doctoral students in Switzerland, which indicate differences among the disciplines in the intensity of teaching and research, in student-teacher ratios, et cetera. Most doctoral students are employed by higher education institutions. There are more doctoral graduates than available positions in academia; therefore careers of doctoral degree holders are often outside the academic environment.

Studies and discussions on the doctorate often include recommendations for more transparency and organisation in this degree, discuss insufficient funding and lacking career perspectives. Overall, however, doctoral students are generally happy with their decision to do a doctorate (see also Mögerle et al. 2005; Wirth et al. 2005a; Matthes et al. 2006 regarding communication sciences). It seems that the doctorate in Switzerland generally suits both local organisational as well as individual needs.

In the following chapter, the focus is on the second dimension of the context of this study: communication sciences in Switzerland, and the doctorate in this field.

3 Swiss communication sciences and their doctorate

Differences in the internal structure and organisation of disciplines lead to different types of doctorates (Burgess 1994; Parry et al. 1994; Parry 2007). Therefore, this chapter is dedicated to the analysis of the field in which the doctorate is looked at in this piece of research: communication sciences in Switzerland.

The model of a scientific discipline as characterized by a common and stable research paradigm, where epistemological foundations, research questions and inquiry methods are accepted and shared by all members of a (largely closed) scientific community (the *convergent* disciplines; Becher and Trowler 2001), belong more to the exception that to the rule. Instead, in many cases scientific disciplines are characterized by some degree of fragmentation at the cognitive and at the social level (*divergent* fields) and, even if large disciplinary domains like economics or sociology might be stable, internally they are subject to continuous variation, with new specialisms and the related research networks constantly emerging (Becher and Trowler 2001).

The relationship between the cognitive dimension (what Becher and Trowler (2001) call academic territories) and the social dimensions of scientific disciplines (the academic tribes) is complex. They are not related in a simple model of one discipline – one department, but in different, often domain-specific ways (Becher and Trowler 2001; for communication see Craig 2003; Boure 2006; Olivesi 2006).

In the following sections, first the international discussion on the field of communication sciences is addressed. Then, I present an analysis of the social, institutional and cognitive structure of the field in Switzerland. Finally, the doctorate in the field is presented by addressing recent implementations of structured doctoral training as well as results and reflections from previous studies.

3.1 Communication sciences: a discipline?

The field interested in human communication has many different names[15] (see for example Lang and Lang 2003; Schorr 2003; Saxer 2007; Van den Besselaar 2007). Discussions on the disciplinary status of the field, and thus a self-reflexive look at it, characterise the last decades, marked also by two special issues of the *Journal of communication* in 1983 (titled *Ferment in the Field*) and 1993 (*The Future of the Field – Between Fragmentation and Cohesion*) showing the paradigm struggles and the

[15] For example communication research, communication science(s), media research, media science, sociology of communication communications management, the German names of Publizistikwissenschaft or, earlier, Zeitungskunde (DGPuK 2001; Romano 2006), or, as often used in France, information and communication ("sciences de l'information et de la communication", Froissart and Cardy 2005), but also simply communication(s). In order to express this variety, I use the name communication sciences in its plural form.

emergence of specialties, respectively (see for example Avery and Eadie 1993; Noam 1993; O'Keefe 1993; Shepherd 1993; Swanson 1993; Streeter 1995; Shepherd 1999; Putnam 2001 or Wilke 2005 for Germany).

3.1.1 Interdisciplinarity and different sub-communities

Communication sciences are often considered an interdisciplinary endeavour. Most of the disciplines from the areas of social sciences and humanities are interested to some extent in communication, and thus engage on the territory. Important contributions in the field have been given by political scientists, sociologists, psychologists and even mathematicians (Schramm 1983; Beniger 1993; Streeter 1995) – people that would not consider themselves as communication scholars. This calls attention to the field, but leads also to the development of more sophisticated specialties, and tempts to rely on ideas from other disciplines rather than to develop the field's own theories (Putnam 2001).

As pointed out by several authors, there is no common body of theory that can serve as a unifying element for research; hardly any milestones or classics can be identified (Tankard et al. 1984; Chang and Tai 2005). There is a lack of communication among the different sub-disciplines (Rogers and Chaffee 1993; O'Sullivan 1999; Craig 2003). The field's boundaries are rather blurry, and it tends to import much from other fields (Reeves and Borgman 1983; Rice et al. 1988; So 1988; Berger 1991; Boure 2006), often more than it exports to them.

Bibliometric and other analyses show that communication sciences are not an inter-reading community (Van den Besselaar and Leydesdorff 1996) - there is a distinction between *mass media communication* (emerging from sociology and political sciences) and *interpersonal communication* (with origins in psychology and social psychology; O'Sullivan 1999), visible for example in publications, citations, association memberships and conferences (see Reeves and Borgman 1983; Reardon and Rogers 1988; Rice et al. 1988; So 1988; Barnett and Danowski 1992 (introducing the additional distinction humanistic vs. scientific); Rogers 1999; Leydesdorff 2004). This distinction, however, is not theoretically justified, and voices have been raised in favour of more integration and communication within the field (Berger and Chaffee 1988; Reardon and Rogers 1988).

The interdisciplinary character of the field is considered both as a challenge (Berger 1991; Hickson et al. 1999) and as a driving force towards more integration (see Atkin and Jeffres (1998) on the economic importance of the media field, Reardon and Rogers (1988) and O'Sullivan (1999) on the growing impact of new communication technologies). The variety of the field is also seen as a strength (Streeter 1995; Atkin and Jeffres 1998).

3.1.2 Different origins in different linguistic settings

The field is considered as rather young (see Saxer 2007 for a discussion of the implications), even though considerations on human communication have always been a topic of concern of scholars in different fields, already Aristotle and Plato were interested in it. While Schramm identified "the political scientist, Lasswell; the mathematician-turned-sociologist, Lazarsfeld; the social psychologist and student of group processes, Lewin; and the experimental-turned-social psychologist, Hovland" (Schramm 1983: 8) as the founding fathers of the field, Rogers (1994) sees Wilbur Schramm himself as the founding father of the field, and the others rather as forerunners. Meyen and Löblich (2006), however, question whether it is actually possible to identify a founder. This shows an important pattern in the field: many scholars giving important contributions to the field do not consider themselves or are not considered as communication scholars, they rather identify with their parent discipline.

In the USA, the first study programmes in *mass communication* emerged after World War II. During wartime, a group of social scientists came together in national research agencies, working with "an interdisciplinary approach, often centered on communication problems" (Rogers 1994: 11). When Schramm returned to the university after his wartime duties, he became director of the School of Journalism at the University of Iowa; there, he pursued his conceptions of communication study and founded also the first doctoral programme in mass communication[16]. Doctoral degrees in interpersonal communication had already been awarded since the 1930s, by departments of speech. The division of the communication field into the two sub-fields *mass communication* and *interpersonal communication* thus had its origins also in the fact that Schramm, with a Bachelor degree in political sciences, a Ph.D. in English literature and postdoctoral research in a psychology department, was appointed a position in the area of journalism (Rogers 1994).

In France, the first university degree, a *diplôme universitaire de premier cycle*, in communication was awarded in 1967 at the university of Bordeaux, the first doctoral training (a *DEA en information et communication*) started in 1975, the *Société française des sciences de l'information et de la communication SFSIC* was created in 1978 (Cardy and Froissart 2006). The field was officially created by the French State in 1975, as 52nd

[16] Rogers (Rogers 1994) considers it, however, rather a coincidence that mass communication research emerged out of journalism. Regarding Schramm's appointment as a director of the School of Journalism, he reports: „Schramm was somewhat of an odd choice to be director because he had never been a full-time journalist. At the time, such experience as a reporter or editor was considered an essential requirement for being appointed as a journalism professor. Schramm was not at heart a journalism professor, and he did not teach courses in writing and editing skills at any time during his career. He was pursuing a broader vision of communication study and considered himself just temporarily alight in a school of journalism for the next few years" (Rogers 1994: 16). When returning to Iowa, Schramm was offered different positions, „including director of the University of Iowa libraries (Wilbers 1980, p. 12). Had he accepted that position, communication study might have grown out of library and information science" (Rogers 1994: 17).

interdisciplinary section of the *Conseil supérieur des universités* (today *Conseil national des universités*), the first programmes were implemented in *Facultés des Lettres*, thus in the humanities Boure 2006). French communication research today mainly focuses on Information and communication Technologies, discourse analysis, information and communication theory and corporate communication and socio-political approaches, while the range of taught areas is broader (Cardy and Froissart 2006: 275-276).

While Rogers (1994) starts his *History of communication Study* in the USA with the establishment of communication research, Meyen and Löblich (2006), focussing on Germany, start earlier: with the establishment of the field *Zeitungswissenschaft,* the first institute being founded in Leipzig in 1916. In the 1960s, the field shifted from a historical-philological approach towards a more empirical-quantitative approach, inspired by the field in the USA and implemented mostly by people with a non-academic background or from other fields (Meyen and Löblich 2006). The first number of the German journal *Publizistik*, at the time called a *"Zeitschrift für die Wissenschaft von Presse, Rundfunk, Film, Rhetorik, Werbung und Meinungsbildung"*, was published in 1956. At this time, only a few institutes formerly called *Zeitungskunde* or *Zeitungswissenschaft,* and often afflicted with prejudices regarding their academic status, have already changed into institutes of *Publizistik* (Wilke 2005).

3.1.3 A European approach to communication sciences?

The differences between Europe and the USA have been analysed recently by looking at English language journals: Möhring and Scherer (2005), in a comparison of journals from both continents in the period 1970-2000, show that in both cases, there is an increase in empirical studies, and quantitative methods are used more often than qualitative methods. The share of empirical work is, however, higher in the USA. The use of different methods is also related to the subjects the articles deal with: while in American journals, the focus is on fields where surveys are a common instrument (for example *opinion research, political communication, media effects*), in European journals theoretical work and content analysis are more frequent (for example regarding *media sociology, media systems, communication history*; Möhring and Scherer 2005).

European authors predominantly publish in European journals (Masip 2005). An analysis of two European journals for the period 1986-2000 (Schorr 2003) shows that in Europe research mainly focuses on traditional media and is strongly related to the domestic environment. The dominating field of is *mass communication*, followed by *communication law and policy* and *political communication*. There are also some articles concerning *instructional and developmental communication*, *health communication*, *language and social interaction*, and *media history*. This analysis shows that "(m)ore

recent topics such as computer mediated communication, visual communication, and organizational communication, have hardly yet been considered" (Schorr 2003: 41)[17].

Studies on the structure of the field mostly rely on the analysis of publication databases such as the Web of Science, and thus are restricted to the English-speaking world. In communication sciences, however, research subjects and publication channels vary across countries and regions (Möhring and Scherer 2005). As often in fields of social sciences and the humanities, publications in local languages and book-like publications are frequent, and thus the use of international (English language) journal databases for an analysis of the field can be questioned (Hicks 1999; 2004; Masip 2005; Möhring and Scherer 2005; Archambault et al. 2006; Nederhof 2006). An analysis of local language journals and other publications in different linguistic regions might allow for deeper insights into the inter-European diversity. Olivesi's (2006) overview on communication in France and Froissart and Cardy's (2005) paper on French Scholars in Information and communication show, as an example, that in France there are similar, but also different foci (for example on *culture* or *identity*) than in the two European Journals analyzed by Schorr.

This short overview shows that the history of the field and its actual orientation differs among different linguistic contexts. As in Switzerland, there are three main linguistic regions all of them with at least one university interested in communication, a deeper look at the field seems reasonable in order to understand the context of the doctorate in this field.

3.2 Swiss communication sciences: analysis of a fragmented field

The interdisciplinary character of the field, as well as its variety in institutionalisation and publication channels is also visible in Switzerland. The presence of different national languages adds to the variety.

For mapping scientific fields, especially when they are in the areas of social sciences or the humanities or for interdisciplinary fields, triangulation of methods has proven of value (Thelwall 2004; Merkx and Van den Besselaar 2008). The analysis of researcher's CVs for addressing mobility, but also other topics, is currently emerging and addressed in the international discussion (see for example Dietz et al. 2000; Gaughan and Bozeman 2002; Dietz and Bozeman 2005; Cañibano et al. 2008).

For analysing the structure of communication sciences in Switzerland, we have used an approach combining different methods and data sources, starting from the self-evaluation report of the Swiss Association of communication and Media Research

[17] Another sub-field that did not appear in Schorr's analysis is the field of intercultural communication. Also, from her report it does not come clear where the area of public communication is located.

SGKM, and using the communication units' self-presentation on their websites and the analysis of CVs and publication lists of professors in the field. Here, I present some results that are most relevant for this study. For more details on results and methodology see Probst and Lepori 2007; Probst and Lepori 2008; Lepori and Probst 2009.

3.2.1 Institutionalisation of communication sciences

Even if journalism as an academic field has a long tradition in Switzerland – first courses started at the University of Zurich at the beginning of the last century (SGKM 2004) -, a major development of the domain occurred only during the 1990s with the reinforcement of the offer in Zurich, the opening of new curricula in communication at the universities of Basel (1995), St. Gallen (1998), Geneva (1999) and Lucerne (2002) and the constitution of the Faculty of Communication sciences at the University of Lugano (1996). While the field was only weakly institutionalised and had a few professors concentrated mainly in Fribourg and Zurich in the mid-1990s (Bonfadelli 2007), in 2000 students could choose to study communication and media sciences already at five different places (Süss 2000). Today, a research unit interested in at least aspects of communication can be found at all 10 cantonal universities, while absent in the two federal institutes of technology, given their orientation to technology and natural sciences.

As a result, the number of students enrolled in communication has enormously grown, from about 150 in 1995/6 to more than 2000 today. These data should be treated with some prudence, given the difficulties of delimitating the borders of the field and since they might also include some re-labelling of existing curricula, but they undoubtedly reflect the growing importance of the field at least for education – a tendency visible also in the requests of future students regarding this field (Graf 2007). The reaction of communication professionals to the increasing offer and student numbers was sceptical; besides the reproach of not producing what practice needs, also a deficit in research threatened the legitimation of the field – and still today, public relations agencies for example do not consider university training in this field as necessary for their employees (König 2007). It seems that the broad range of competencies students acquire in communication sciences are not yet known enough among possible employers, for example in the area of advertising (Spiller 2007).

Today, the orientation of the teaching offers in communication is mostly a social science and analytical perspective; the institutes for example do not or no longer offer explicit training for journalists (Süss 2000; Marr 2007). To make sure that their students acquire also practice related competencies and to support them in building networks in the professional environment, most curricula in communication in Switzerland require their

students to do an internship – a custom appreciated also by future employers (König 2007).

Institutionalisation of communication sciences in Switzerland is manifold in general (Romano 2006), but also when looking only at the universities and UAS. Table 5, based on the self-evaluation of the SGKM (2004) and updated with information from the institutes' websites in spring 2008, shows this variation: it ranges from being a focus in a department or institute or being the topic of a study programme, up to a whole faculty of communication sciences. Most often, there is an institute of communication sciences, which can be located directly under a faculty or in a department.

Universität Basel	Philosophisch-historische Fakultät	Departement für Gesellschaftswissenschaften und Philosophie	**Institut für Medienwissenschaft**
Universität Bern	Wirtschafts- und Sozialwissenschaftliche Fakultät	Departement Sozialwissenschaften	**Institut für Kommunikations- und Medienwissenschaft**
Universität Fribourg	Wirtschafts- und Sozialwissenschaftliche Fakultät	Departement Gesellschaftswissenschaften	**Fachbereich Medien- und Kommunikationswissenschaft**
Université de Fribourg	Faculté des sciences économiques et sociales	Département des sciences de la société	**Domaine sociologie et médias**
Université de Genève	Faculté des sciences économiques et sociales	Département de sociologie	**Programme en sciences de la communication et des médias**
Université de Lausanne	Faculté des sciences sociales et politiques	**Institut de sociologie des communications de masse**	
Università della Svizzera italiana	**Facoltà di Scienze della comunicazione**		
Universität Luzern	Kultur- und Sozialwissenschaftliche Fakultät	**Institut für Kommunikation und Kultur**	
Universität Luzern	Kultur- und Sozialwissenschaftliche Fakultät	Soziologisches Seminar	**BA und MA in Gesellschafts- und Kommunikationswissenschaften**
Université de Neuchâtel	Faculté des sciences économiques	**Académie du journalisme et des médias**	
Universität St Gallen	Betriebswissenschaftliche Abteilung	**Institute of Media and communication Management**	

Universität Zürich	Philosophische Fakultät	**Institut für Publizistikwissenschaft und Medienforschung der Universität Zürich**	
Zürcher Fach-hochschule	Zürcher Hochschule für Angewandte Wissenschaften	Department Angewandte Psychologie	**Forschungsbereich Entwicklungs-, Schul-, Kommunikations-, Medienpsychologie**
Zürcher Fach-hochschule	Zürcher Hochschule für Angewandte Wissenschaften	Departement Angewandte Linguistik	**Institut für angewandte Medienwissenschaft**
Hochschule Luzern	Hochschule Luzern - Wirtschaft	**Institut für Kommunikation und Marketing**	

Table 5: Institutionalisation of communication sciences in Switzerland

The names of the units show interesting patterns: while in the German speaking area, with the exception of the units at the university and at the UAS in Lucerne, all the units include *Medien* in their name, in the French speaking area, the units' names include *sociologie* (Fribourg, Lausanne) or are located at the department of sociology (Geneva). The doctoral programme in Geneva includes also *information* in its name – in line with the name of the field in France, s*ciences de l'information et de la communication.* An exception to the sociologically oriented units in the French speaking part is Neuchâtel, where the focus lies more on journalism: until recently, there was a *Institut de journalisme et communication*, which now however does no longer exist. Instead there is the *Académie du journalisme et des médias*, offering a *Master of Arts in Journalism.* Additionally, in Neuchâtel there is a *Institut des sciences du langage et de la communication,* oriented more towards linguistics, at the *Faculté des lettres et sciences humaines.*

3.2.2 Diversity in language and approaches

As a panel on Swiss communication sciences at the DGPuK conference in spring 2008 has underlined (Eppler 2008; Saxer 2008; Schönhagen 2008; Viallon 2008), diversity that is discussed in the international discussion on the field is also visible in the Swiss context. Here, however, especially in the German speaking community, the distinction that is made most often is not between *mass communication* and *interpersonal communication*, but between *Medienwissenschaft(en)* and *Publizistik* or *Kommunikationswissenschaft*, the former interested in *how* communication occurs (through which medium, under which circumstances), the latter interested in the aspect of information in – usually mass-media – communication (Romano 2006).

In Switzerland, diversity is accentuated between the linguistic regions: in the German speaking part, the field is characterised by units oriented towards the three different

dimensions social sciences (this would be more the area of *Publizistik*), cultural studies (*Medienwissenschaft*) and economics (Schönhagen 2008). In the French speaking part, communication sciences are currently in a transition period (Viallon 2008). In Fribourg and Lausanne, new structures are being implemented and Neuchâtel is introducing a new academy of journalism. The situation in Geneva is more stable: at this university, graduate training in the field (originally a DEA, now a Master, plus a doctoral school) exists since a decade. The only university in the Italian speaking part of Switzerland has a quite broad approach to the phenomenon of communication, covers many different areas and aims at an interdisciplinary discourse (Eppler 2008).

These observations by actors in the field are in line with the results of our study. Figure 1 represents the declared research topics of the units interested in communication sciences at Swiss universities, as retrieved from their websites[18]. The abbreviations represent the units, depicted approximately in their geographical distribution, while the ellipses represent research topics. Abbreviations in *italic* represent universities of French language (Fribourg is bilingual), USI is the only university in the Italian speaking part of Switzerland. The research topics the communication units declare on their websites show that there is one common denominator that is present in all units: mass media communication. The other topics are distributed rather locally, with language and social interaction being a topic that goes through all three linguistic regions.

[18] This study was conducted in summer 2006, and therefore represents the situation at this point in time.

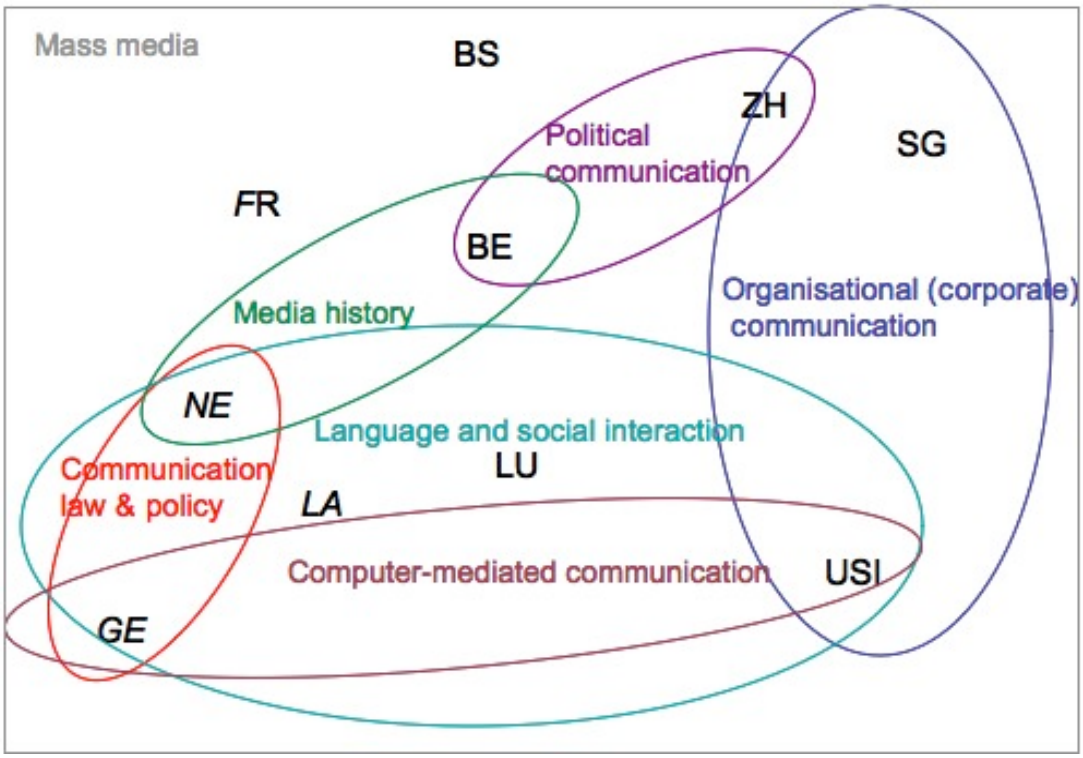

Figure 1: Declared research topics of Swiss universities' units in communication sciences

Besides the analysis of the characteristics of research units and of the actual discussion on the field's identity, we have also analysed publication habits and geographical and disciplinary background of professors in the field. In order to do so, we have searched the Internet for CVs and publication lists of all professors in the field. CVs were coded regarding the place and disciplinary field of the first university degree and the doctorate of all professors that were listed on the communication units' websites, the coding of publication lists included type of publication (journal/book-like publication), publication language and place of publication.

Summarising the results of this study, Figure 2 gives an overview over the field in Switzerland, including the flow of people and publications. The figure is constructed on the above-explained analysis, thus based on the self-declared research topics and on data on the geographical and disciplinary background of professors as well as their publication activity. This figure thus reflects what can be identified based on these sources, and does not necessarily correspond to all individual conceptions of the field. Especially, the teaching side is not included in this figure.

There is virtually no interaction between the French and the German speaking part of Switzerland, neither in terms of exchange of people nor of ideas. At the moment of the analysis, there were no common publication channels that were used, and the focus on local languages and thus on what is done in the neighbouring country – France and

Germany, respectively – is high. This is even accentuated by a strong flow of people from Germany to the communication units in the German speaking part of Switzerland. The communication units in St. Gallen and in the Italian speaking part of Switzerland (Lugano) are also oriented towards an international community; they have a higher share of publications in English than the others.

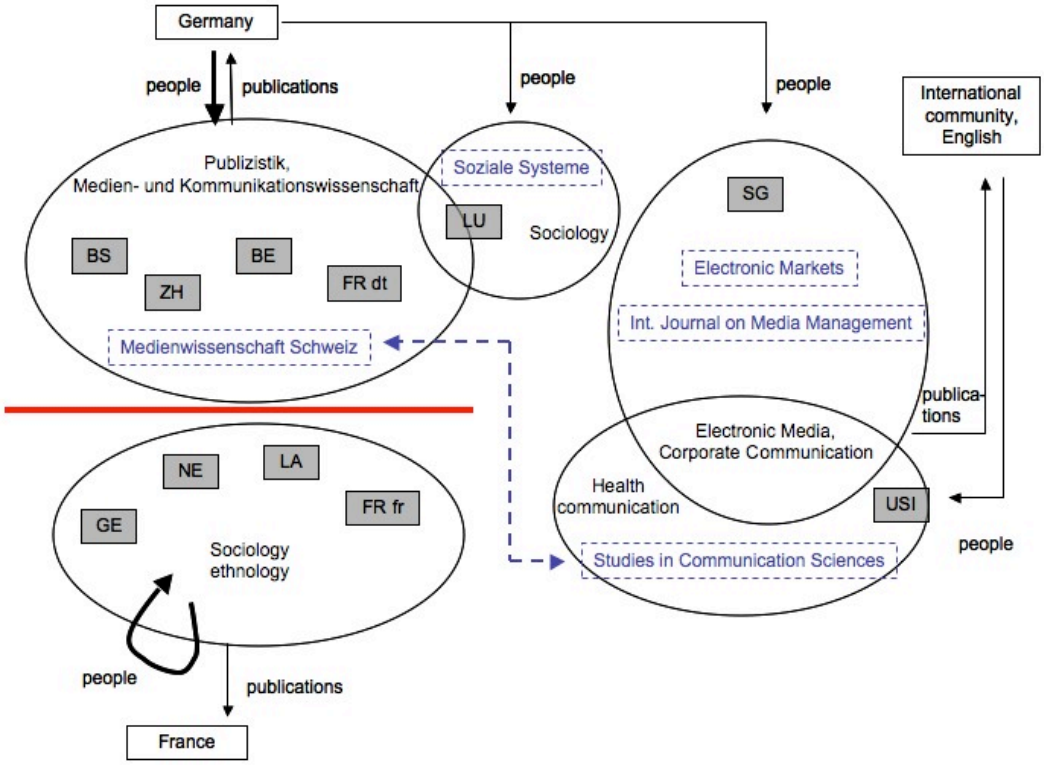

Figure 2: A map of Swiss communication sciences

Different thematic clusters can be identified: In the French speaking part, the approach to communication is mostly sociological and ethnological. Publications are in French journals, and people often stay within the linguistic region. Professors tend to be employed by the university where they have earned their doctorate.

The communication units in Zurich, Berne, in the German-speaking department of Fribourg and in Basel can be grouped in one cluster, focussing on mass communication. While Zurich, Bern and Fribourg have a rather traditional social sciences approach to mass communication, Basel is more on the cultural studies side of the continuum (see also Schönhagen 2008). In Lucerne, communication is conceived as a part of social sciences, with a strong focus on sociology. This is accentuated by the presence of an editor of the journal *Soziale Systeme* in this unit.

The more internationally oriented communication units in St. Gallen and Lugano form a third cluster. Here, electronic media and corporate communication are rather central topics, in Lugano the range of topics is rather broad, including a focus also on health communication. In St. Gallen, the editor of two international, English language journals is located, thus publications in these journals is rather frequent. Until recently, the Faculty of Communication sciences in Lugano had its own publication channel, *Studies in Communication Sciences*. This journal has been merged with *Medienwissenschaft Schweiz*, the publication of the SGKM; the first volume of the new *Studies in Communication Sciences was* published in 2007. It will be interesting to see whether this new publication, fostering a multi-language approach and aiming at reflecting the Swiss debate in the field, but also including international contributions (Bonfadelli 2006), for example by accepting book reviews in other languages than the book was written, will lead to new communication flows and take over the role of a common publication channel.

Overall, communication sciences in Switzerland are characterised by limited resources and linguistic plurality, by pragmatic, inter- and transdisciplinary approaches and by close connections to the regional and national environments (Saxer 2007). Cooperation between the linguistic regions as well as "between social and cultural science approaches in the field could, however, be more intensive", as is observed by Saxer (2007: 231), a scholar active in the field for decades.

Thus, the field is fragmented, local references are important. Strong collaboration with the environment – be it as a general observer of it or in specific research projects committed by it – is an important characteristic of the field, while collaboration inside the field is not so strong. The field does reflection about itself (Romano 2006), for example through a self-evaluation (SGKM 2004) or in a commission for the future (Zukunftskommission 2006) and there are initiatives aiming at fostering integration and looking beyond one's own nose, strongly promoted by the SGKM: the new common, multi-language journal and the implementation of the *KMW-Atlas* that informs on the topics and training offers of the different institutes are just two examples. Others are to be found in the area of doctoral training.

3.3 The doctorate in the field

A survey done by the SGKM in November 2007 has shown that currently there are 122[19] doctoral students in communication sciences in Switzerland (see also 4.4). In this

[19] One doctoral student appears twice on the list, with two different supervisors from two different universities – in the following data, this doctoral student is considered as two, because it is not known which of the two supervisors is actually doing the supervision. Thus, the total of doctoral students amounts to 123.

section, I address the implementation of doctoral programmes in Switzerland and results of a study on the doctorate in the field conducted in 2004-2005.

3.3.1 Implementation of doctoral programmes

In the framework of the Swiss programme of emphasis „Zukunft Schweiz – Demain la Suisse – Domani la Svizzera“ (1996 – 2004), in the year 2000 two *Graduiertenkollegs* in the area of communication sciences have been established. These gave doctoral students the possibility to exchange their ideas with other researchers, to do interdisciplinary work and to get advice from experts. One of them was coordinated by the University of Zurich and called „Informationsgesellschaft Schweiz. Medien, Organisation und Öffentlichkeit im Wandel“. This project was of experimental type and concluded with the end of the research programme „Zukunft Schweiz“, of which it was part, and thus also the end of the doctorates of participating doctoral students. The second *Graduiertenkolleg* was established on “New Media in Education”, coordinated by the University of Lugano, going on for some time after the conclusion of the programme (SGKM 2004); this graduate school is now replaced by a Pro*Doc.

Out of the 14 Pro*Doc programmes granted in 2006 and 2007 (see 2.2.3), three are linked to communication sciences through the participation of institutes interested in this field: “Intermediale Ästhetik. Spiel – Ritual – Performanz” in Basel, “RED INK – Rethinking Education in the Knowledge Society” organised by professors from the universities of Lugano and St. Gallen as well as the EPFL and “communication and Health” organised by Lugano and Neuchâtel. The Pro*Doc in Basel was granted in 2006, the other two in 2007. In 2008, an additional ProDoc was granted to a communication professor in Lugano, in collaboration with other Swiss and foreign institutes.

Besides these doctoral programmes funded through national sources, there are also local initiatives. In Geneva, a doctoral school called “Ecole doctorale en sciences de l’information, de la communication et des médias”[20] has been established in 2003. This programme offers one or two seminars, ateliers, presentations or colloquia per month, and is open also to researchers and doctoral students from other universities – it is also possible to participate only in single sessions.

At the university of St. Gallen, the doctorate in all fields is organised as a programme already in the old regulation from 1994, and has been reformed for the academic year 2007/08. This programme includes mandatory coursework, a preliminary study has to be handed in for final admission, the maximum duration is limited to 10 semesters and the

[20] http://www.unige.ch/ses/socio/communication/enseignements/ecoledoctorale.html (11.03.2008)

programme is divided into steps that have to be accomplished within clear deadlines. Participation in this programme is mandatory.

At other places, there are professors or research groups that include organised, mandatory elements in their doctoral training, such as a defined amount of ECTS to be "collected" for example through coursework, publications or participation in conferences, or mandatory doctoral colloquia. In Zurich, assistants have the possibility to attend didactical training. Several winter and summer schools and workshops of interest for doctoral students in the field have been offered over the last years, also directly by or supported by the SGKM.

The evaluation of communication sciences at a national level and the report of the Zukunftskommission working on the future of the field in Switzerland recommended to improve doctoral training (Schönbach et al. 2004; SGKM 2004; Zukunftskommission 2006) A first workshop for doctoral students has already been offered in December 2007, and a working group established by the Swiss Association of communication and Media Research SGKM is currently working on a doctoral programme to offer on a national level. The lack of a common understanding of the field leading to different emphasises in teaching (Bonfadelli 2007), however, as well as the linguistic differences, are challenging elements in this endeavour.

3.3.2 A study on Austria, Germany and Switzerland

As comes clear from what has been written above, the doctorate in communication sciences in Switzerland is a doctorate in a fragmented field, in a country where the doctorate is regulated on a local, university level. Therefore, one can expect quite some diversity in it. However, so far no comprehensive study on this field in this country has been done.

In 2004-2005, a research group of the university of Zurich conducted a study on "pathways into science" (*Wege in die Wissenschaft*) in the field in Germany, Austria and Switzerland (Mögerle et al. 2005; Wirth et al. 2005a; Matthes et al. 2006). The sample from Switzerland, however, contained only few doctoral students from the French and Italian speaking part; it was thus mainly a study on the German speaking community.

The project was interested in the pathways *into* science, looking at the motivation for the employment at the university, the way to this employment and at visions regarding the future career, and in the pathways *inside* science, focussing on the employment situation, research topics, occupational supervision and contentment, further training and relatedness to the disciplinary area. Currently, a follow-up study is conducted[21],

[21] see http://medienrezeption.ch/cms/de/project/detail/23/ (08.05.2008)

interested in the situation of doctoral degree holders employed in the field of communication sciences who do not yet have a stable professorship position.

This study overall shows that doctoral students in Switzerland are satisfied with their situation – also when compared to the answers from Germany and Austria. Some negative judgements are given on the opportunity for advancement and job security, but overall also the employment situation is judged positively.

Through factor and cluster analysis, the authors individuated four factors and three clusters characterising the type of supervision in the doctorate in the field (Matthes et al. 2006). The factors are *content-related support*, *support in publication*, *support in time management* and *social support*. The identified clusters are the *isolated* doctoral students (107 respondents in the sample) experiencing rather pour support in all four dimensions and with significantly less scientific publications; the *well supervised* doctoral students benefiting from excellent support in all four categories (51 respondents); and the *socially supported* experiencing a very good social support, but nearly no content-related support and support in publication and time management (123 respondents).

The study comes to the conclusion that the field of research of communication sciences is attractive, that young scientists are motivated and interested also in internationalisation. Dissatisfaction lays mainly in the missing opportunities for advancement. In line with others (Jarren 2000; SWTR 2001; Schönbach et al. 2004; Bonfadelli 2007), the authors conclude that a system that adds new positions in the middle of an academic career, as for example a tenure track system, should be introduced. They also suggest identifying more alternative career paths outside university. Clear conditions of employment (regarding time and content) and binding agreements on objectives are advised, as well as a strengthened integration of the young researchers into the research context. To enhance quality in the socialisation process, the authors of this study advise to introduce more training opportunities and human resource management measures such as a mentoring programme or a network for young scientists inside the SGKM (Mögerle et al. 2005).

3.4 Short conclusions: a manifold degree in a diverse field

Starting from a general discussion on the disciplinary character of the field of communication sciences, this chapter has provided an overview over the field's social and cognitive structures in Switzerland, illustrating the diversity of tribes and territories.

In this field, two first graduate schools have been implemented in the late 1990ies. Today, some graduate schools or graduate-school-like structures exist at the local as well as interregional level. A study on the doctorate in the field shows some challenges and gives recommendations mainly in the area of career planning, but also indicates that

generally doctoral students in communication sciences are positive about their experience.

Together with the presentation of the higher education system, this chapter provides the context for the study at hand. This context, as has come clear by now, is characterised by diversity on several levels. Therefore, also the answer to the question "what is a doctorate?" in this field most probably will be manifold. Before starting answering this question, the concluding chapter of this first part presents some details on the sample and the sampling technique that has been applied, giving also a rough overview on the population of doctoral students in communication sciences in Switzerland.

4 Methods and sample: doctoral students in Swiss communication sciences

This chapter first presents the methods used in the study and then particularly looks at the interviews with doctoral students by addressing how the sample has been constructed. It then shows some general characteristics of the doctoral students in the sample. Finally, the sample is compared with available information on the population, showing to what extent it can be considered as representative.

4.1 Methods

A doctorate is a process that takes place between higher education institutions and the disciplinary communities, but which is also influenced from the broader context of society. The actors involved in the doctorate – mainly doctoral students and supervisors – bring along their own ideas, motivations and characteristics into the process. In order to embrace these contexts and actors, different points of view have been included in this piece of research.

Information on the political and institutional context, as presented in chapter 2 was retrieved from official documents, the Swiss Federal Statistical Office as well as from the work of other researchers interested in the Swiss higher education system. The disciplinary context was looked at through a review of the international literature and a preliminary analysis of the field (see chapter 3), which was based on a multi-method design.

Based on this contextual information, the further methodological design has been conceived. From all organisational units at Swiss universities interested in communication sciences, those currently preparing doctoral students have been selected. Given the non-existence of a national regulation for doctoral training, the doctoral regulations valid for these organisational units – usually the faculties' doctoral regulations – have been analysed. Overall, doctoral regulations of 8 faculties at 8 different universities have been analysed. With this analysis, the normative dimension of the doctorate has been addressed (see chapter 5).

As main part of this project, the perspectives of the actors directly involved in the process – doctoral students and supervisors – are used as information source. Given the rather small dimensions of the field – a recent census of the Swiss Association of communication and Media Research has shown that there are currently 123 candidates preparing a doctorate in the field – it was possible to cover a good part of the field through in-depth interviews.

Overall, 41 persons enrolled for a doctorate at an institute or department in Switzerland that is interested in communication sciences have been interviewed. In these in-depth interviews[22] which lasted between 35 minutes and 2 hours, I have tried to make doctoral students talk as much as possible, in order to reveal also aspects that direct questions do not allow exploring. I worked with a guideline in the form of a mind map that represented all the areas to cover during the interview. I also asked some specific questions, for example regarding the discipline of the preliminary degree, the exact moment of the beginning of the doctorate, or whether a doctoral student was employed by a higher education institution or not. This led thus also to some quantitative data. While in the first round of interviews (17 doctoral students, interviewed in January 2007), I used these questions as icebreakers at the beginning of the interview, in the second round (24 doctoral students, interviewed between May and July 2007) I have sent the doctoral students an e-mail with a link to an online questionnaire containing these questions before the interview. This allowed saving time for the in-depth part of the interview.

In May 2008, thus 10 to 16 months after the interviews, I have sent an e-mail to all doctoral students that had participated in the interviews, asking them some questions about their current situation in terms of work, developments regarding the doctorate, publications made in the meantime, their plan for the future and whether they would again decide for a doctorate. 21 doctoral students answered to the questions.

Interviews with supervisors were conducted between October and December 2007. The 14 supervisors interviewed for this study are professors active at communication units of five different Swiss universities in all three linguistic regions. Together, these 14 professors supervise 79 doctoral students. The interviews with supervisors had a duration between 40 minutes and nearly 2 hours and were also organised as in-depth interviews with a general guideline in the form of a mind map that allowed me enough flexibility to react to the actual answers and accounts of the supervisors, but also to make sure I would have covered all topics of interest.

Besides these formal methodological steps, I am also a participant in the community. My twofold role as doctoral student and researcher on doctoral students in the field has entailed advantages, but also challenges. As a doctoral student, access to other doctoral students – and thus interview partners – is facilitated, and I had the impression that doctoral students spoke quite frankly about their experiences and ideas. Through participation in the annual conferences of the Swiss Association of communication and Media Research, it was possible to get involved also in the community outside my home university, and thus to make contacts to potential interview partners on the level of

[22] The interviews were inspired by the techniques of oral history, semi-structured and problem-centred interviewing (see for example Flick 2004; O'Reilly 2005).

supervisors. I am also a member of the association's working group on the future of doctoral education in the field. This participation in the community allows for observation and informal discussions. Besides these advantages, my own status as a doctoral student and participation in the field also entails a challenge, a risk for a bias. It was thus, during the whole process, indispensable to be aware of my twofold role. As a first step in order to do so, I have made explicit my own experience as a doctoral student by writing it down. During the interviews and analyses, I have constantly reflected on my own situation and ideas, in order not to confound the respondents' answers with what I personally think.

4.2 The construction of the sample

To build the sample of doctoral students, a procedure of theoretical sampling (Strauss and Corbin 1996; Glaser and Strauss 1998) was followed. Theoretical sampling is a sampling procedure often used in qualitative research. It is not based on statistical representativeness, but aims at covering as much different cases as possible. Theoretical sampling is an iterative process, in which the researcher starts with some interviews and then tries to find other interview partners, which allow adding new information to the already existing data. Sampling ends when saturation is reached, thus when no new findings emerge from additional interviews.

I have started interviewing doctoral students in my direct environment, at the university of Lugano. Once the variety in this university was covered, I moved on to other places, trying to find interview partners from the other linguistic regions, working on different topics and doing a doctorate in different organisational settings. The preliminary analysis of the field's structure (see 3.2) was useful for this procedure: it allowed doing the sampling based on an overview of the field's structure. Some of the interview partners were also found directly through the interviews themselves – for example because interviewed doctoral students told me about their colleagues and made the contact, or through informal contacts established thanks to my presence at the institutes during the interviews.

The sample covers around one third of the population of doctoral students in communication sciences in Switzerland at the moment of the interview. It represents the diversity in the field, but does not necessarily represent also the exact statistical distribution of the population. To what extent the sample reflects the population is addressed in section 4.4. First some general characteristics of the sample are addressed.

4.3 Characteristics of the sample

For this study, 23 female and 18 male doctoral students from eight different universities in Switzerland have been interviewed. Their age varies between 26 and 45 years, most of

them being younger than 35 years. The average age of the interviewed doctoral students is 31.0 years, with male students being on average 29.3 years old, female students 32.2 years.

They reflect the linguistic diversity: 21 of them speak German or Swiss German as first language (one is bilingual with German and English), in 15 cases it's Italian, for 3 French[23] is the first language, in 2 cases Spanish.

24 of the 41 doctoral students in the sample have started their doctorate rather immediately after their first degree. A similar number (48.2%) is reported for assistants working in communication sciences in Switzerland by Wirth et al. ((2005b)). There are, however, also doctoral students in the sample that have started their doctoral studies only after several years from the conclusion of their undergraduate studies. From the interviews it comes clear that they have made professional experience in the meantime, and then, at a later point of their career, decided to do a doctorate. Eleven doctoral students started their doctorate between 2 and 5 years after their first degree, two between 6 and 10 years, and four between 10 and 15 years.

Doctoral students in the sample are in different years of their doctorate. At the moment of the interview, 3 are in their first year, 11 in the second, 4 in the third, 12 in the fourth, 9 in the fifth, and 2 in the sixth year.

4.3.1 First degree

23 doctoral students in the sample have their main background (major of graduate degree) in communication sciences – 7 of them more precisely in *Publizistik*, a name often used in the German speaking area, where the public aspect of communication is underlined, one in *media studies*, a field that underlines the cultural aspects of communication (Figure 3). The other 18 doctoral students in the sample have their major in a wide variety of fields, including among others business study, psychology, sociology, engineering and history[24].

[23] Doctoral students with French as a mother tongue are only a small group in the sample. This can be explained by at least two reasons: on the one hand, overall there are rather few doctoral students in communication sciences in the French speaking part of Switzerland (the SGKM census reveals that there are 20 doctoral students from one university, a large part of them however being external doctoral students and thus more difficult to access; on the website of the unit less than 10 doctoral theses in preparation are listed), and on the other hand, several doctoral students enrolled at the only university training for a doctorate in Communication sciences at the moment of the interview do not have French as their mother tongue. This under-representation has to be considered when analysing the data according to the linguistic region.

[24] Not labelled in Figure 3 (only one occurrence): dramatics, industrial design, industrial management, information management and languages.

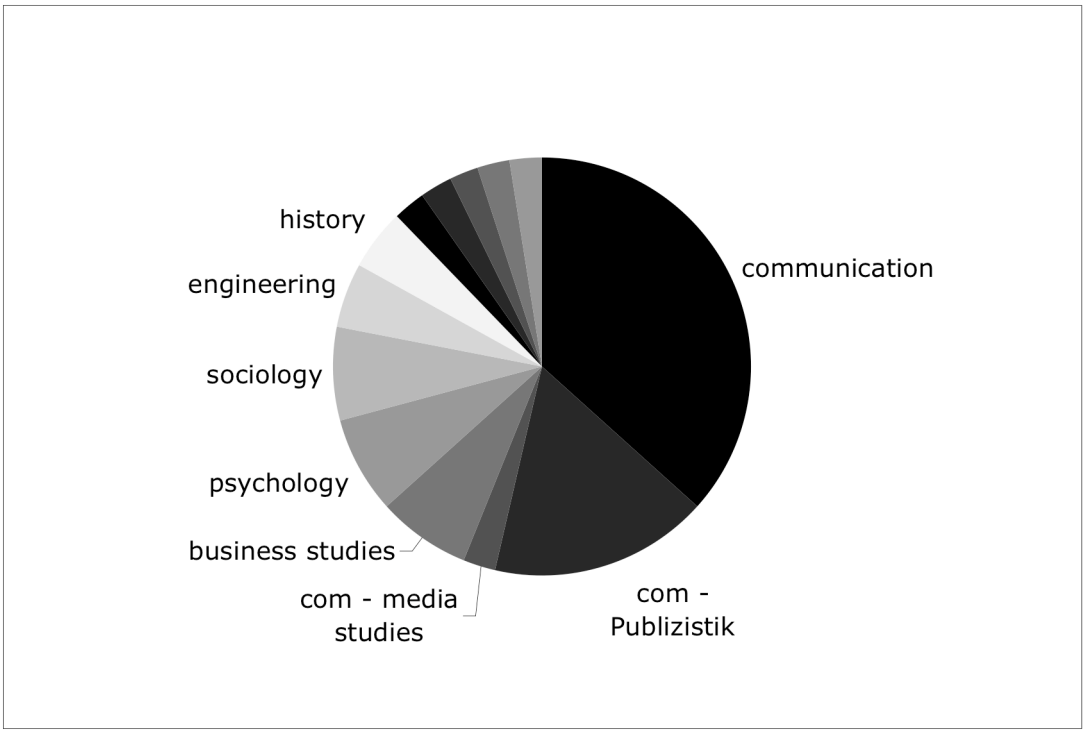

Figure 3: Disciplinary background (major) of doctoral students in the sample (N=41)

Out of the 18 doctoral students without a main background in communication sciences, 6 have a minor in communication sciences (two in general communication sciences, one in *Publizistik*, 3 in *media studies*), one has a minor in media management, one in visual communication. There are thus 10 doctoral students in the sample without any background in a field including the words communication or media in its name.

4.3.2 Different stages of the doctoral process

Above, the amount of years spent so far in the doctorate has been indicated. As the workload besides the doctorate, but also the speed of progress within the sample varies, it seems also interesting to group the doctoral students according to steps in the process. From the interview material, it was possible to identify six different stages in the doctoral process and attribute each doctoral student to a stage. These stages are presented in the most typical sequential order, but obviously they can also overlap, and sometimes returns to earlier stages are necessary.

At the moment of the interviews, nine of the doctoral students in the sample were in a *beginner* situation. A beginner has decided that he wants to do a doctorate, he is probably already enrolled for it, but he has not yet very clear ideas about what his doctorate will be like. He might know about a general topic, a general direction he wants

to undertake, about theories he wants to use, maybe he also has already some ideas about how he would like to proceed in terms of methods (usually influenced by his previous research experiences as a student), but these ideas are still quite general and not yet mature, they are subject to change and specification. A doctoral student in this stage might abandon the topic he thinks he will work on completely and turn to a new research subject, maybe because he has had a new possibility of a research project, which he could combine with his doctorate, maybe because he has found a topic that intrigues him more, maybe there are other reasons.

In eleven cases, the *project* was already *clear*. A doctoral student in this stage generally knows what his doctorate is about; he has clear ideas of the topic he will address, which theories he will use and how he will approach his topic empirically. Often he already has handed in a report about his doctorate, be it because the university requires it or because he has applied for a scholarship of the National Science Foundation, of the university or other funding agencies. For these scholarship requests, it is necessary to hand in a clear project description, with research questions, a section on methodology, etc. A student in this stage does not necessarily know every detail about his project, but he knows in which direction to go – he has an idea about his theoretical framework, knows which literature he has to read, what his sample will more or less look like and how he will approach the field empirically. In this stage, the doctoral student generally works on theoretical topics, refines his framework and prepares the instruments for the empirical part.

Twelve doctoral students were in the process of *data gathering*; five were in the process of *data analysis*. Data gathering and analysis is usually done when the project is clear and the theoretical framework is more or less fixed, but there are also cases in my sample where data gathering already started in the very beginning of the doctorate – in this case, the doctoral student has to figure out ex post what he will do with the data he has got, how to analyse them. A doctoral student in this stage is implied in fieldwork. Fieldwork can have a more or less important place inside a doctoral dissertation, and therefore this stage can be more or less extended. This stage can be accompanied by work on the theoretical framework.

Two doctoral students in the sample had concluded the empirical part and were *writing up* their dissertation. Writing up (and re-writing) is a process that can start already early in the process of a doctorate, but generally in the end of the process there is a phase in which the whole text of the dissertation is manufactured, where all the pieces are knit together to a whole. Doctoral students report about "writing day and night", it seems that in order to go through this stage smoothly, they need time to devote exclusively to their dissertation, without other things bothering them.

After having written up the whole text, it is generally *handed in* to the supervisor for a first final feedback. This feedback is than considered for a final review, before the thesis is handed in definitively for the evaluation. This stage includes also the defence and – if the faculty's regulation requires it – the final review and publication of the thesis. In this period, the process is not controlled by the doctoral student, it depends for example on the time the commission needs to read the thesis. Doctoral students report about using this time for extracting publications out of their dissertation. In my sample, one doctoral student just had handed in the dissertation for a final feedback to his supervisor, and one doctoral student already had handed in the dissertation definitively.

Table 6 shows in which year of the doctorate the doctoral students in the different stages are. Thus, in the sample it seems that the first year is mostly devoted to get a clear idea of the doctoral project – a process that might well go on also in the second year. Preparation of the empirical part can go up to the fourth or even fifth year, while others start gathering data already in the second year. Interestingly, the 2 doctoral students in our sample that are already in their sixth year have not yet handed in their text.

	beginner	**project is clear**	**data gathering**	**data analysis**	**writing up**	**handed in**	**total**
first year	3						3
second year	5	4	2				11
third year	1	1	1	1			4
fourth year		5	5	1		1	12
fifth year		1	4	2	1	1	9
sixth year				1	1		2
total	9	11	12	5	2	2	41

Table 6: Stage and year of doctorate of doctoral students in the sample (N=41)

4.3.3 A broad range of research topics

The sample reflects the diversity in research topics in Swiss communication sciences. I have asked doctoral students to assign their topic to one or more fields (classification by Schorr 2003, adapted). Figure 4 displays their answers – the fields with the highest numbers of answers include only slightly more than one fourth of the sample. In addition to the 10 areas included in Figure 4, there are other ten areas that have been mentioned only once.

Organisational communication and *mass communication* are the areas that are most often mentioned – around one fourth of the doctoral students select each of them. These are, however, also very broad topic areas, and one can also ask how the doctoral students answering the questions interpreted them; in the interviews they were simply asked to choose among the proposed categories, without further explanation. Answers came, however, always rather quickly, so it seems that they had a clear idea of what the

categories meant, but obviously these conceptions might vary among the doctoral students.

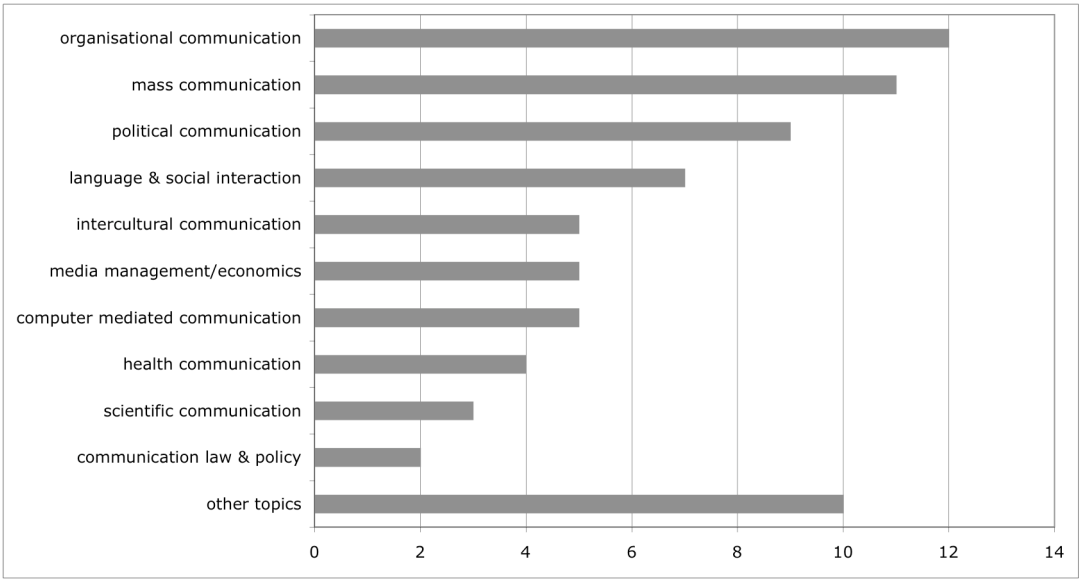

Figure 4: Topic areas of doctoral students in the sample (N=41)

4.3.4 Changing the place for the doctorate? Geographical background

The geographical background of doctoral students, reflected in the place where they have done their first degree, also shows interesting patterns, as represented in Figure 5. Places are arranged in a way that indicatively represents the geographical map. The arrows start at the place of the first degree and point to the place of the doctorate, numbers of doctoral students with the same pathway are indicated when higher than 2. The division between linguistic areas is visible. There are only a few links between the German and the French speaking part of Switzerland, and many doctoral students in the German speaking part have done their previous degree in Germany. In Lugano, there are several doctoral students with a first degree from Italy. The two universities with most doctoral students with a degree from the same university are Lugano and Zurich, the two biggest units of communication sciences in Switzerland, also represented with many doctoral students in the sample.

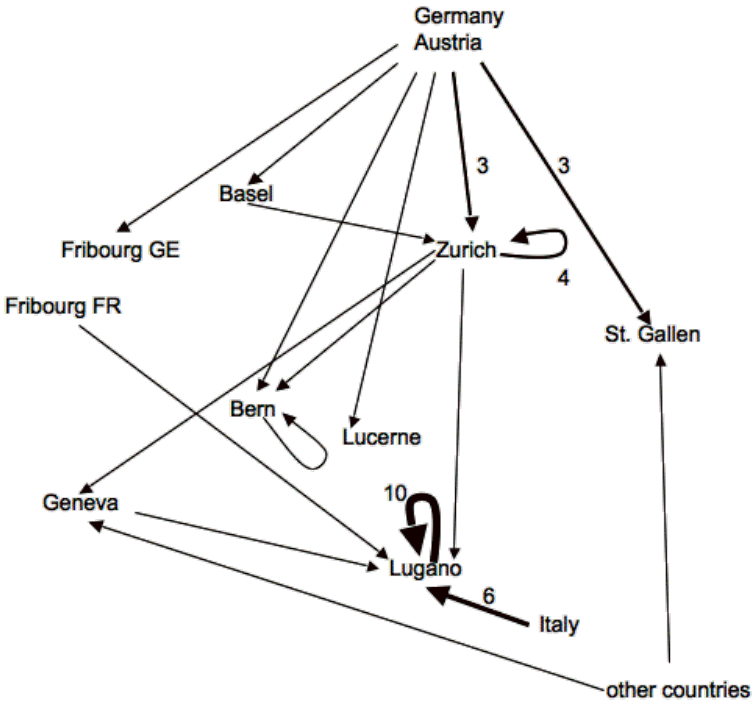

Figure 5: Geographical background of doctoral students in the sample (N=41)

4.4 Comparing the sample with the whole population

In November 2007, the Swiss Association of communication and Media Research SGKM conducted a survey with the aim of including information on all doctoral students in the field. The survey included doctoral students' name, e-mail address, supervisor, working title of the dissertation and whether they are internal or external doctoral students, thus employed or not employed at the higher education institution.

This survey is currently probably the most complete information about the whole population of doctoral students in the field. However, also with this survey the difficulty of defining the field's boundaries emerges: the survey was sent by the SGKM to all professors at the communication institutes, but not all of them answered. Therefore, some doctoral students in my sample are not contained in the population found by this survey.

This is indicated in Table 7, showing the distribution of the doctoral students among the universities both in the SGKM survey and in my sample. The last column indicates the number of doctoral students that are contained in both the SGKM survey and my sample. Overall, only 25 of the 41 doctoral students I have interviewed are covered in the SGKM sample. Three of the 16 doctoral students from my sample that are not contained in the SGKM survey have finished their doctorate probably before the survey was done, and

are therefore not contained, and one probably was considered as very close to the end by his supervisor, so he did not indicate him – his other doctoral students are in the SGKM list. Interestingly, 3 of the doctoral students missing in the SGKM list are writing their doctorate together with professors who have indicated doctoral students, but obviously forgot these three. They are all not employed by the university. The remaining 9 doctoral students not contained in the SGKM list are writing their doctorate with professors that do not appear in the list – thus who probably do not consider themselves as being part of the community or simply forgot to answer the request.

	In SGKM survey	In sample	In both
Basel	14	2	2
Bern	4	3	1
Fribourg	8	1	1
Geneva	20	3	3
Lucerne	1	1	0
Lugano	22	19	10
Neuchâtel	1	0	0
St. Gallen	9	4	1
Zurich	42	8	7
tbd	2		
total	*123*	*41*	*25*

Table 7: Doctoral students in the sample and in the SGKM survey

As Table 7 shows, the two biggest institutes Zurich and Lugano are also represented with the highest number of doctoral students. At the moment when I started data gathering, professors in the field told me that there are no doctoral students in Neuchâtel, so this place is not at all contained in my sample. Fribourg, Basel and Geneva seem underrepresented in my sample. However, for the above-mentioned reasons, these numbers should be treated with care. Overall, the sampling strategy did not aim at covering a sample that represents all geographical places identically; therefore, also analysis regarding institutional and geographical differences has to be done carefully.

Overall, the SGKM survey covers 123 doctoral students, with a female share of nearly 60%, thus similar to the 56% of female doctoral students in my sample. Diversity in terms of topic is also visible in the SGKM sample, covering dissertation projects in a broad range of areas, including for example mass media communication, organisational communication in public, private and non-profit organisations, health communication, political communication, intercultural communication as well as communication in the area of new technologies.

54% of the doctoral students in the SGKM survey are employed at the university where they are writing their doctorate; they are thus internal doctoral students. This group is therefore overrepresented in my sample, with only 6 external doctoral students. Here,

however, a difference applies: while in my sample doctoral students employed by another higher education institution, for example a University of Applied Sciences, are counted as internals, they are considered externals in the SGKM study.

The 27 supervisors in the SGKM survey supervise a total of 121 doctoral students (in 2 cases, the supervisor still has to be defined), the average of supervised doctoral students per supervisor is 4.48. The 14 supervisors I have interviewed supervise 79 doctoral students, thus slightly more than in the SGKM study (average in my sample: 5.64).

4.5 Short conclusions and outlook

As has been shown in this chapter, the sample reflects the broad variety of the field of communication sciences in Switzerland. It includes doctoral students from different parts of the country, working on topics ranging from parts of communication sciences closely connected to the humanities to more technology oriented fields, with different disciplinary and geographical backgrounds and in different stages of their doctorate.

Even though not completely representative of the population, the sample seems to cover doctoral students in communication sciences in Switzerland quite well. Thus, careful general assumptions about the doctorate in this field are possible based on this sample.

As a further step after this study, I plan to use the results of the study as basis for the development of a questionnaire or another instrument, which could then be submitted to the whole population, thus enhancing the coverage. In this small field, and thanks to the contacts established through the project at hand, it should be possible to reach a rather high coverage of the population.

The four chapters in this first part have presented the context of the study at hand. First, introductory reflections about the doctorate and different possibilities of its interpretation in the knowledge society were presented. From this discussion, the research questions underlying the study at hand have been deducted. Chapters 2 and 3 presented the concrete context in which the doctorate is looked at, by addressing the Swiss higher education system and especially doctoral training in this country, as well as the field of communication sciences and the doctorate in this field. In this final chapter of part A, the sample was presented.

The aim of the following second part is to describe the doctorate in communication sciences in Switzerland as it emerges from the data, but also to integrate some quantitative data and other results from studies exploring the doctorate in different countries and fields. In order to do so, four different dimensions are addressed. First, the more formal, organisational dimension, including the institutional point of view, is presented (chapter 5). Then, the doctorate as a period of personal development and

learning, and thus the personal, individual dimension is looked at (chapter 6). The third section covers the academic dimension: the doctoral student's belonging to a tribe and exploration of territories (chapter 7). Finally (chapter 8), the social dimension, i.e. direct relationships with seniors and peers, is presented.

II. DIMENSIONS OF THE DOCTORATE IN SWISS COMMUNICATION SCIENCES

5 Formal and organisational dimension of the doctorate

Beliefs and myths about the doctorate are partially incorporated in the formal organisational structure of higher education institutions. Part of this incorporation is institutionalised in regulations, thus explicitly formalised. Regulations define for example access to the doctorate, how the process is structured, and which actors participate in the process at different stages. They also regulate the final step of the doctorate, the evaluation by the members of the academic community. The organisation and its sub-units (departments, institutes, laboratories, etc.) provide the framework in which the doctoral process takes place (Parry 2007).

Particularly in systems with local authority in higher education, regulations reflect also local traditions and power relationships. They build a common ground for the interpretation of social constructs as the one of the doctorate. Indeed, all but one of the analysed regulations contain, usually rather at the beginning, an explicit statement about what a doctorate or a dissertation is, or what it should be considered an indicator for. This officially defined common ground, however, remains rather vague and leaves space for interpretation.

Three of the regulations (Bern, Lucerne, Zurich) underline that a dissertation should be a piece of research that advances or contributes to research in the field by giving new insights. A doctorate should be an independent and autonomous contribution answering scientific standards. The regulation in Fribourg underlines the degree's characteristic as an indicator: "The conferral of a doctorate is to confirm the specific qualification for scientific work"[25]. According to the Lugano regulation, the dissertation should demonstrate the candidate's „scientific maturity". The regulation in Basel is more detailed and includes also the proof of the linguistic ability to participate in the discourse of the community:

> The dissertation shall demonstrate that the candidate has reached new insights by conducting independent scientific research on a – compared to a licence degree – more extensive respectively more difficult topic, that he is able to clearly develop his thoughts and to expose them in a linguistically correct way. *Regulation on the doctorate, University of Basel*

25 Translation of extracts from regulations and quotes from interviews from German, French and Italian to English: CP.

An interesting case is St. Gallen, where the doctorate is explicitly seen as "research-oriented training" that prepares doctoral students for a career both inside academia, but also outside, in "science-based activities". Thus, this regulation explicitly neglects the myth of the doctorate as preparing for an exclusively academic future.

These formal frameworks are subject to individual and collective interpretation. Meaning is constructed by individuals, through processes of interaction and interpretation. Formal rules and regulations do not necessarily correspond to what actors really do. This chapter first proposes an analysis of the regulations of the doctorate of the departments in all Swiss universities currently training doctoral students in communication sciences. Results of this analysis are compared to statements from the interviews, and thus beliefs about the doctorate are reconstructed by comparing the formally institutionalised structures with the individual meanings attributed to this construct. Then, what doctoral students and supervisors say about ideal organisation of the doctorate is presented. This chapter concludes with an overview on the pragmatic implementation of elements of organised training in the Swiss communication doctorate.

5.1 Implementing doctoral training: different ways

Studies on the doctorate in different countries as well as comparative analyses show an increasing tendency to implement organised structures in doctoral training, generally based on the U.S. model of the graduate school. These structures are seen as an answer to the challenges doctoral training has to face (see 1.2). Over the last decades, new beliefs regarding doctoral training have emerged, saying that efficient and effective doctoral training is achieved through the implementation of organised structures. The existence of these beliefs is nicely visible in the following statement by a doctoral student talking about organised elements in doctoral training:

> It's new now, since this year we have four meetings with the supervisor, twice as a group, all doctoral students together, and twice in individual colloquia. (...) I think this is also in order to answer the reproach that he [the supervisor] doesn't pay attention to his doctoral students.
>
> *Doctoral student*[26]

Enders and Bornmann (2001) consider the myth of systematisation of knowledge and training not yet fully implemented in doctoral training, and call it

> eine interessante Paradoxie der "Wissenschaft als Beruf", dass sie gegenüber allen anderen Bereichen den besonderen Anspruch erhebt, dass gesellschaftlicher Fortschritt auf die

[26] As interview partners were guaranteed confidentiality, the only information given for every citation is whether it is from a doctoral student or a supervisor. Where additional information is necessary in order to understand the context, this information is given in the text. Whenever two consecutive citations stem from the same interview, this is mentioned in the text.

> Systematisierung von Wissen und Ausbildung angewiesen sei, bei der Ausbildung ihres Nachwuchses selbst aber eher auf vorindustrielle Formen des Anlernens und Einübens setzt.
>
> 2001*: 82*

In several countries, structured forms of doctoral education exist alongside more traditional forms based on the individual relationship between the doctoral student and the supervisor (Kehm 2007a)[27].

In Switzerland, the pressure on higher education institutions to move towards the implementation of organised doctoral training is visible also in the emergence of new funding programmes directed at doctoral training, which request organised programmes and graduate school-like structures (see 2.2.3).

The following pages picture the formal implementation of this myth of organised structures in doctoral training and its interpretation by the involved actors in communication sciences in Switzerland. More general, they give an overview on what regulations on the doctorate prescribe in the field under study and how this is reflected in the actors' beliefs and behaviour.

5.1.1 Variety in regulations and recent changes

Swiss universities are under cantonal authority, and therefore subject to differing cantonal legislations (Fumasoli 2007). Doctoral regulations are usually defined at the faculty level, with one exception: in St. Gallen, a specialised university covering economics, business studies and law, there is only one doctoral regulation for the whole university, which distinguishes, however, in some details between different areas of study.

The variety in the regulations is visible already at first sight, when looking at their titles and at the degrees that are conferred (Table 8). In Basel, Zurich, Lucerne and St. Gallen regulations regulate the "Promotion", the graduation, and thus focus on the final step. The process of doctoral studies is referred to in the titles of the regulations from Geneva, Lugano and Berne. Fribourg's regulation seems somewhere in between, its title says to indicate how one can acquire a doctoral degree.

[27] This is for example the case in Norway, where in 1993 a structured doctorate has been implemented, including mandatory coursework, supervision and admission requirements. In parallel, however, the old model of the doctorate, which was usually done only after a considerable amount of years spent in research and considered a masterpiece, is maintained as alternative and makes up for 10-15% of the annually awarded doctoral degrees (Broch and Hyllseth 2004). Among other examples are, as already mentioned, Germany and Austria.

	title of regulation, year	conferred doctoral degree
Basel	Ordnung für die Promotion, 1988	Dr.phil.
Bern[28]	Reglement über das Doktoratsstudium, 2007	Dr.rer.oec. / Dr.rer.soc.
Fribourg	Reglement für den Erwerb des Doktorats, 2005	Dr.rer.pol. / Dr.rer.soc.
Geneva	règlement des études - section: doctorat ès sciences économiques et sociales, 2006	doctorat ès sciences économiques sociales, mention communication et médias
Lucerne	Promotionsordnung, 2005	Dr.phil. (if requested: Ph.D.)
Lugano	regolamento degli studi di dottorato, 2006	Dr.sc.com. (Dottorato in Scienze della comunicazione)
St. Gallen	Promotionsordnung, 1994/2006[29]	Dr.oec. HSG (respectively Doctor of Philosophy in Management, Ph.D. HSG)
Zurich	Promotionsordnung, 2006	Dr.phil.

Table 8: Year and title of regulations, conferred degrees

In the conferred degree titles, the multidisciplinarity of the field and the differences in its institutionalisation are visible. Doctoral students in communication sciences can earn their doctoral degree as a general Dr. phil., or as a degree title including a specification in economics, social sciences, political studies, or, only in one case, in communication sciences. These titles depend on the department to which the unit interested in communication sciences belongs.

As a look at the years of publication of the regulations reveals, most of the regulations have been released recently. This can be interpreted as a sign of ongoing changes in the field of doctoral studies in communication sciences in Switzerland. A look at the content of the regulations shows that there is a tendency to introduce organised elements in doctoral training, thus to answer international developments. Also supervisors refer to these ongoing changes. At the university of Zurich, for example, it is foreseen to introduce organised doctoral training in the near future, as all supervisors from this university mentioned.

[28] As communication sciences used to be only a minor in this university and associated to two faculties, doctoral students can be enrolled in two different faculties. As the majority of the doctoral students in my sample are in the social sciences faculty, only this regulation is considered.

[29] Already the 1994 regulation includes a clearly organised programme. As the doctoral students in the sample mostly refer to this regulation, I have analysed both the old and the new regulation.

5.1.2 Formal steps and organisational elements in the doctorate

In the following paragraphs, some elements of the doctoral process that are explicitly mentioned in the regulations and/or emerge from the interviews are addressed, and thus the formal organisation of the doctorate in communication sciences in Switzerland is presented. This presentation shows that elements of graduate school models can also be implemented individually, leading to different organisational forms of the doctorate.

Admission: generally not competitive

Admission to the doctorate is regulated at all universities at least to a certain extent (see Table 9). In most regulations, a tendency to prefer local graduates is visible: they first state that graduates with a degree from the same university and faculty are admitted to the doctorate, and then add that also certain degrees from other Swiss universities and foreign degrees allow admission to the doctorate. In these cases, however, additional requirements must be met, depending on the university. Some regulations state that a certain number of ECTS credits must have been acquired in a specific field or require a minimal grade in the previous degree, which also differs. If this is not fulfilled, doctoral students are required to integrate their previous degree with additional work, mostly coursework.

	admission: diploma from	**admission: min grade, field of studies.**[30]
Basel	faculty, external	min 10 semesters in field of doctorate
Bern	faculty, external (admission to doctorate at home university)	grade min 4.75/magna cum laude, min 60 ECTS in field of doctorate, else additional requirements. Degree not older than 10 years
Fribourg	faculty, external (admission to doctorate at home university)	grade min. 5.0, at least 60 ECTS in social sciences and economics
Geneva	faculty, external possible	if external, additional requirements possible
Lucerne	all Masters/equivalent diplomas	grade min. "magna cum laude", field of dissertation = focus of studies, exceptions with additional requirements possible
Lugano	Swiss university, equivalent foreign diplomas	diploma in communication sciences, humanities, economics, social sciences or engineering
St. Gallen	faculty, external (admission to doctorate at home university)	grade min 5.0, in field of doctorate (economics), else additional requirements
Zurich	faculty, external possible	if external, additional requirements possible

Table 9: Admission to the doctorate as stated in regulations

[30] In Switzerland, grades usually range from 1-6, with 6 being the highest grade, 4 equals „sufficient".

Supervisors' requirements

These are the formal requirements, as imposed by the faculty. A doctoral student, however, in most places also has to find a supervisor, and supervisors' requirements differ. These requirements are often not made explicit, and supervisors also state that the decision to accept somebody as doctoral student depends a lot on gut feeling. Only one supervisor presented a written checklist he uses when deciding about whether to accept doctoral students.

But even when they have an idea of requirements and make them explicit, many supervisors state that it is difficult to see whether a person really responds to the requirements. Usually, supervisors accept doctoral candidates only after getting to know them in a personal colloquium, in which they try to find out about the doctoral student's motivation and characteristics. Some also require doctoral students to give proof of their abilities, for example by writing a proposal and integrating feedback, before accepting them as doctoral students.

Requirements that supervisors mention can be clustered in four categories. They regard the planned topic of dissertation, the doctoral student's educational background, his private and occupational situation and personal characteristics, motivation and abilities.

That the *planned dissertation project* is *close to the interests and field of expertise of the supervisor* is a requirement that is mentioned first by many supervisors. They wish the topic to be related to their own research areas or topics of teaching, or to an area they wish to develop. This is also seen as an advantage for the doctoral student, in that it is also of interest to the supervisor to invest time and energy in the topic. Additionally, the topic should be feasible and dignified for a dissertation and promise gain of knowledge. Some supervisors also require applicants to present a draft of their doctoral project. This draft should show that the doctoral student has a good idea, and also the capability to implement this idea in a project.

Several supervisors mention the *educational background*, something often contained also in regulations. Their future doctoral students should have a background in a field closely related to their topic – most often in communication sciences, but, depending on the topic area, also sociology, psychology, information sciences and other fields are possible. A supervisor referred to this more generally:

> They have to show that they have a minimal cultural and intellectual background, in general but also particularly in this field. *Supervisor*

Some supervisors require high grades in previous exams, while others clearly state that it's not through grades that one can understand whether a candidate will be a good doctoral student. Others also see this as a requirement posed by the institution, and thus do not add it to their own requirements.

Supervisors often require also methodological knowledge and competencies – or at least the willingness and capability to invest in it and the awareness that each problem requires specific methods for its solution. Some supervisors also explicitly require linguistic competencies. English is usually a must – one supervisor even requires that his doctoral students have lived in the English-speaking world.

Supervisors also consider the *private and occupational situation* of potential future doctoral students. Several supervisors mention that their doctoral students must have the possibility to dedicate at least 50% of their time to the doctorate; thus they look at their whole situation, including professional and personal duties. Some clearly state that they prefer not to have doctoral students that are employed externally. One supervisor also explicitly requests geographical flexibility – he wants all his doctoral students to do a stay abroad, and thus they have to be willing to do this. He also states that doctoral students should be rather young, that they have done their first degree not more than three years before starting the doctorate.

The requirements that are probably most difficult to measure regard the doctoral students' *personal characteristics, abilities, and motivations*. Doctoral students should be able to conceptualise, to think in abstract, theoretical ways. They should have good analytical skills, enjoy it to go into details, be able to gather complex interrelations and to critically interrogate topics, but also be creative. Persistency, discipline, a good work ethic, sensibility in human interaction, the ability to work in team, but also to organise oneself in an autonomous way are other characteristics supervisors wish their doctoral students to have.

A doctoral student should demonstrate scholarly interest, and be open to academic questions. Even though most supervisors see also futures outside academia as possible pathways for their doctoral students, academic commitment during the doctorate is required:

> In principle this goes so far that they say, in a concrete case, if they had to decide whether they follow their practical or their scientific orientation, that then they decide for the scientific. *Supervisor*

To be curious is an important characteristic of doctoral students, not to be satisfied with the first solution, to get to the bottom of the topics.

> Something I think a doctoral student should have, but which is impossible to measure, is curiosity. If a researcher is not curious, he has failed his job. If he doesn't have this push that brings you to dedicate more energy for looking at another document, make a phone call, search on the Internet, participate in something, talk to somebody. If you don't have this attitude – it's not enough to know everything about methodology, about the field, if you don't have this push. *Supervisor*

Commitment, zeal, enthusiasm for science, and passion are often mentioned as most important characteristics of doctoral students. When trying to find out about commitment, supervisors also confront doctoral students with the reality of a doctorate:

> Usually I try to measure a bit their commitment. I try to make it clear to them that working with me means working really a lot, in order to avoid having people with low motivation.
>
> *Supervisor*

To find out why somebody does a doctorate seems to be important to supervisors. They accept different reasons, but generally purely economic or career-oriented motivations are not what they prefer:

> You have to know what you want to do. You invest a lot of time in a topic, but mostly in your personal development. I try to find out why somebody wants to do a doctorate. Sometimes it's in order to make one's career after, but sometimes also because they are interested in the topic. I prefer the latter; with the first I don't know whether this is enough to stick it out for three to five years. *Supervisor*

Warm and cold entries

In 10 out of the 41 cases, the supervisor of the doctorate also was the supervisor of the thesis of the previous degree, other ten have done their first degree at the same university where they are now doing their doctorate, and thus already knew their supervisor before. Hill (1994) calls it a "warm" entry when doctoral students not only know the topic areas of the institute they are going to be part of, but also already had a taste of the working styles of its members, compared to the "cold" entry where students did not have had any prior contacts to the institute before.

In the interviews, several supervisors refer to cases of "warm" entry, generally stating that this makes also the admission decision easier, in that knowledge about each other is mutual, thus also the supervisor already knows at least some of the characteristics and competencies of the future doctoral student. "Warm" entries can be based on previous positions as student assistants, or on a master thesis written together with the supervisor.

About half of the doctoral student in the sample already knew the supervisor or the institute of their doctorate before. This number is low compared to results on Germany by Enders (1996, 83% at the same university) and Enders and Bornmann (Enders and Bornmann 2001, three quarters at the same university)[31], but high when compared to numbers from the USA (see Nettles and Millett 2006)). Regarding the Netherlands, de Weert (2004) reports an increasing trend for talent scouting beyond the institutional and national boundaries.

[31] In communication sciences, student assistant positions are less frequent in Switzerland than in Germany and Austria (Wirth et al. 2005b).

How the relationship is established

There are different procedures that bring doctoral students and supervisors together (see also CEST 2007): In one modality, the doctoral student takes the active part: he approaches the potential supervisor – which he sometimes directly knows, sometimes from publications and/or the internet – and asks about the possibilities to do a doctorate. This is a situation that is mentioned by most supervisors. In the two other situations, the supervisor takes the active position. In one case, there is an official call – in some places, all positions must be announced officially -, while in the other case the supervisor directly approaches potential candidates, for example when they do exams with him or write their thesis. In the study by Wirth et al. (2005b), 36.8% of the Swiss doctoral students report that they have been contacted by their actual boss. This number is also reflected in my sample: to at least 13 of the 41 doctoral students, the doctorate or assistant position was proposed.

There is, however, also a mixed situation: positions are announced officially, but supervisors also distribute the message in a well-targeted way, be it directly to student or to colleagues who might have students that would suit the position.

There is no consensus among supervisors on which would be the better solution. Some clearly prefer international calls, while others prefer to approach people directly. The difficulty to find suitable candidates is mentioned:

> Obviously, I have a soft spot for getting people from our own house, but this is rather difficult, because not so many apply for the positions. That's not only with me, that's also with others, currently people just have too good opportunities outside on the employment market, where they obviously earn more than in an academic position. *Supervisor*

Only one professor clearly rejects the possibility to approach potential candidates directly. He argues that a doctorate requires so much motivation that it has to be the doctoral student himself to find the decision to do it. This supervisor, however, does not have the possibility to employ doctoral students, and thus is not dependent on applications for assistant positions.

Admission to the doctorate in communication sciences in Switzerland is, overall, not competitive. The numbers of doctoral students are not restricted, as is the case for example in Sweden, Romania or the UK, where positions are limited in order to make sure there are enough resources and adequate support for each doctoral student, or in Italy, where the number of admitted doctoral students depends on the number of available postdoctoral positions (Kehm 2007a).

Also, admission to the doctorate in communication sciences in Switzerland is often not formalised and transparent. Regulations only give general boundaries, and many supervisors do not have concrete requirements, but accept doctoral students on the basis

of personal judgements. Direct contacts are an important source for admission. However, there is also a rather high amount of doctoral students that did not know their supervisor before starting their doctorate. Some of them have been brought in contact with their supervisor through professors they knew from their previous studies or projects.

Intermediary steps and reports

In some countries (for example Sweden, Spain, USA), doctoral studies are split up in two phases, where the first part usually contains coursework and is concluded by a written piece of work, and the second part includes the research project and writing up of the dissertation (Sadlak 2004; Kehm 2007b). In Switzerland, this is generally not the case. The twofold structure can be found only in St. Gallen, where the new regulation, however, abandons a clear boundary between the coursework and the research period, and to some extent in Geneva, where, according to the French model, until recently a DEA was requested for access to doctoral studies. This DEA is now replaced by a Masters degree.

In these two places, there remains, however, an official intermediary step to go:

In Geneva, students have to hand in a *mémoire préliminaire*, a text of approximately 30 pages that is evaluated by a commission. This preliminary thesis is usually written during the second year. Its acceptance is mandatory for full admission to the doctorate.

In St. Gallen, a *Vorstudie* has to be handed in after a maximum of two years. The candidate has to defend this preliminary study in front of his dissertation committee, which decides about its acceptance. An accepted preliminary study is seen as an affirmation that a doctoral project is valid; what's written in the preliminary study is binding for both sides. While, as doctoral student reports, for internal students the necessity of this assurance is lower as there is immediate contact, for external students the preliminary study is an important step, and it happens that preliminary studies are rejected.

Another type of intermediary reporting is found in the regulation and the accounts of doctoral students and supervisors in Lugano. There, doctoral students have to hand in every year a report on their training, participation in scholarly events and research.

Other bodies to request intermediary reports are funding agencies of scholarships. Some doctoral students report that they have or have had scholarships, often for a limited amount of time. The funding bodies require the candidates first to write a proposal, which often also has to be defended in front of a committee, but also reports after the end or a certain period of the scholarship.

There are also supervisors who organise yearly meetings with their doctoral students in which they talk about what has been acquired in the past year and what are the plans for

the upcoming year. This could be considered a less formal way of intermediary reporting.

Duration, organised training and coursework

In five regulations, the duration of the doctorate is limited: indicatively three years in Lugano and Fribourg; in Basel, the supervisor can withdraw from the agreement if the thesis is not completed in four years; and Geneva and St. Gallen limit the duration to five years[32].

Five regulations or additional documents at the department/institute level mention courses to be done, two of them require a certain amount of ECTS points (24 in Bern / min. 30 in Fribourg) to be assembled by participating in courses, attending summer schools or doing presentations at conferences and colloquia or through publications. There is, however, a problem of ambiguity: some doctoral students state that it is not clear to them which external activities, such as publications or participation in conferences, lead to how many points.

In St. Gallen, an organised doctoral programme already existed before the Bologna process was established. Here, doctoral students are required to attend, during their first year, seven seminars. For doctoral students in communication, five of these seven seminars are given, while the other two are open to their choice. The grades achieved in these seminars count as part of the final grade of the doctorate. In four of the five mandatory seminars, doctoral students are required to elaborate a short paper on an aspect of their doctorate, which often leads to publications. There is, however, a challenge in this system that is mentioned by the doctoral students: coursework is done in the first year of the doctorate, and many doctoral students do not yet have defined their topic at this time[33]. Therefore, these papers are written on aspects not necessarily related to the dissertation, and some doctoral students experience this as a waste of energy and time.

Not all universities offer courses that are explicitly targeted at doctoral students. When asked about the courses they have attended, doctoral students most often refer to external offers. They attend summer schools, pre-conference workshops or courses at other universities, be it during stays abroad or in universities close to where they live. Some doctoral students also report that they attend Master courses – especially if they have

[32] The question remains, however, how indicative duration should be interpreted: is it indicative for full-time doctoral students, and thus should be adjusted in the case of part-time doctoral students, for example employed by the university as assistants, or is it an overall duration not distinguishing between the employment situation of doctoral students?

[33] With the new regulation, these seminars are now spread over the whole period of the doctorate. The interviewed doctoral students, however, are in the old system and therefore refer to this situation, and mention that this is about to change.

their disciplinary background in another field than the field of their doctorate. Master courses, however, usually are not eligible for ECTS credits that count for doctoral studies.

The attendance of courses is a rather individual aspect of doctoral training, which is often negotiated between the supervisor and the candidate. A supervisor explains the value of attending courses as follows:

> With every doctoral thesis, it's about integrating it with a certain amount of courses. This also helps avoiding an unnecessary amount of familiarisation studies. A course is a shortcut, that's the function of a course. It's not that somebody could not do the preparation in [area X] by himself. But to know that some scholars in [area X] suggest this route is useful. Also in order to save years of work, especially in interdisciplinary doctorates. *Supervisor*

Another type of organised doctoral training consists in programmes offering opportunities for doctoral students. This type of training depends on the involvement of supervisors in local or national graduate school programmes. There are graduate schools of this type in Geneva and in Basel; recently, new graduate schools have been granted involving communication professors from Lugano and Zurich (see 3.3.1).

These graduate schools offer different types of activities to their doctoral students, with a more or less mandatory character. Activities include doctoral colloquia, where students present their projects and progresses, lecture-type seminars where (often invited) professors present, residential seminars with intensive work on specific topic areas, including presentations by doctoral students and senior researchers, as well as online seminars. Other activities such as the joint attendance of conferences or visits at organisations, for example television stations or archives, are also organised. Doctoral students are usually required to present their work at least once per year.

It seems that the availability of money is a not insignificant aspect in the setting up of graduate schools. The examples of graduate schools in Geneva and Basel and the previous and new programmes in Lugano and Zurich are externally funded programmes. The supervisors report that this allows them for example to invite external professors or to organise residential seminars. The availability of financial resources is also an aspect that allows enhancing doctoral colloquia, as comes clear in the following paragraph.

Doctoral colloquia

Doctoral colloquia seem to be the most common organised element of the doctorate. The implementation seems to depend much on the single supervisor or chair, and not every doctoral student has the opportunity to participate in colloquia. Doctoral colloquia usually involve all doctoral students of one supervisor, the supervisor himself, and often also other members of the chair, such as senior researchers or student assistants.

Where doctoral colloquia are implemented, doctoral students are required to present their work in regular intervals, ranging from once a year to once every two months. The most common format seems to be a half-day or full-day colloquium where in advance texts are shared, and then everybody presents, followed by discussions.

Some supervisors organise also extended colloquia of two or three days, for which they invite external professors and experts, and where the topics and single projects are discussed in a more profound way. Some supervisors and doctoral students also report of external colloquia organised together with other institutes from other universities, be it as a visit at their place or as a common colloquium in an isolated place. One supervisor organises yearly meetings with a research group from a foreign university, where they engage in scholarly debate about their common topic. These experiences are seen as very fruitful, because they allow getting insights in the work that is done elsewhere, but also receiving new inputs on one's work, from people that are not yet so much into it as the doctoral student and the supervisor. External colloquia also offer the possibility for social interaction, for getting to know each other also from a more personal point of view, as is mentioned by one supervisor.

Organising this type of colloquia, however, requires organisational and financial resources. One supervisor reported that the experience of a common colloquium with another university was extremely fruitful, but that unfortunately he does not have the money to do it again, and thus he now organises internal colloquia, but sees this as "first aid". Another supervisor has managed to get a credit by the university for organising this type of encounters, and thus he can organise at least one external colloquium per year.

Other interviewees report of moments of discussion not explicitly implemented as doctoral colloquia. Doctoral students can benefit from encounters that are not explicitly organised for them. One professor reported that his group gathers on occasion to listen to people returning from conferences, to discuss interesting Master theses, or to try to find solutions to theoretical problems. Another supervisor who is directing several research and teaching projects reports that they have regular project meetings that allow for exchange. Additionally, he has institutionalised a weekly short meeting where his collaborators, including doctoral students, have the possibility to present and exchange information. Again another supervisor has implemented meetings on a fortnightly basis where he meets with his doctoral students in order to discuss topics of their choice, which are not necessarily related to their dissertation. The aim of these meetings is, as he states it, to animate doctoral students to engage with academic affairs.

At some places there are research colloquia involving also Bachelor and Master students completing their theses, and where external experts are invited as well. Also doctoral courses can be used to present aspects of one's doctoral project. Retreats of the chairs, as institutionalised in some places, can be fruitful moments for discussion on the doctorate.

There are also doctoral students that, by reason of a lack of offer, have organised colloquia themselves (see 8.3).

The final step: varying procedure and composition of the committee

Once the doctoral project is concluded and the dissertation is written, there is a final formal step to go. Also regarding this final step, regulations as well as interview results show a certain variety. The most striking difference is that not everywhere the doctorate is concluded with a public defence (Table 10).

University	defence/final exam	committee
Basel	"Prüfung": 90 minutes, in the area of the promotion, thesis is part of it. Done by first referee, second referee can attend. All professors of the faculty are invited.	Director of exams: dean (can delegate). Nominates, after consulting the candidate, the referee and the co-referee
Bern	No final exam. Grade based on expertises.	supervisor plus one member (internal or external, more if interdisciplinary), proposed by supervisor. Criterion: disciplinary supplement
Fribourg	"Disputation", public: 30 min presentation, 60 min discussion; with committee plus additional expert.	supervisor plus one or two members proposed by him (internal or external, if external or "Titularprofessoren", the council of professors has to approve).
Geneva	not specified	supervisor plus at least two other members, at least one external
Lucerne	"Disputation", public: 30 min presentation, 30 min discussion; with dean and committee.	two members, first usually supervisor, second internal/external. If expertises differ more than 1 point, third expertise (external).
Lugano	"Difesa", public: 45 min + Q&A only with committee	supervisor plus two members, at least one external, plus doctorate coordinator who acts as president
St. Gallen	"Disputation", public: min. 60 min.	Supervisor plus co-referee proposed by supervisor, decided by rector. New: possibility additional members: qualified people from science and practical fields.
Zurich	"Kolloquium", not public: 30-60 minutes, with committee	two referees (professors or Privatdozenten), at least one internal

Table 10: Final procedure of the doctorate and composition of committee

In Bern, for doctoral students enrolled in the faculty of economics and social sciences there is no concluding event: they have to hand in their dissertation, which is graded by at least two experts (proposed by the supervisor). The final grade is calculated out of this assessment and the grades received in courses taken (24 ECTS mandatory).

In Zurich, there is a final but not public colloquium with the supervisor and a second expert who is, according to what doctoral students report, selected by the doctoral student. Form the accounts of the interviewed doctoral students, it seems that this

colloquium does not have too much of exam characteristics, but is rather considered as an informal chat about the dissertation.

In all other universities, there is a public defence. In Geneva, this is not specified in the regulation, but doctoral students say that this is the case. Duration of the public defence varies, and so does the composition of the committee.

While in some universities, at least one external expert is required as committee member, other committees can be composed only of internal members (Table 10). In Zurich, there is even an emphasis on internal committee members – the wording in the regulation says that at least one member of the committee must be internal. From the answers of the doctoral students, it seems that in Zurich it is rather common to have two internal committee members, one of them being the supervisor.

Thus, as is also reported for Austria and Germany (2004; Pechar and Thomas 2004; Kehm 2007b), in several places in Switzerland there is a rather high degree of personalisation in this final step, and dependency on the supervisor, who acts simultaneously as first referee and often plays an important role in the selection of the other members of the commission, is rather high.

Attributed grades: different scales

Also a look at the grades that are given reveals differences. Not all regulations foresee the use of numbers, and "verbal grades" also differ. However, all universities except St. Gallen and Geneva use the Latin denominations. In some cases, the final grade is calculated by giving different weight to the doctoral thesis, the defence/final exam and probably results of coursework. Table 11 gives an overview on the attributed grades that are calculated in numbers, showing that Berne and Lucerne use identical grades. Basel uses the same scale, but degrees are not calculated as average of previous achievements and the grade attributed to the thesis. St. Gallen uses a completely different scale, with the highest grade being attributed only to very high results.

	Lucerne	**Bern**	**Basel**	**St. Gallen**
summa cum laude	5.75-6	5.75-6	6	5.9-6 (mit höchster Auszeichnung)
insigni cum laude	5.25-5.74	5.25-<5.75	5-6	-
magna cum laude	4.75-5.24	4.75-<5.25	5	5.5-5.89 (sehr gut)
cum laude	4.25-4.74	4.25-<4.75	4-5	5-5.49 (gut)
rite	4-4.24	4-<4.25	4	4-4.99 (befriedigend)

Table 11: Attributed grades: numbers

In Zurich, Fribourg, Geneva and Lugano only "verbal grades" are used (Table 12). "Insigni cum laude" exists only in Zurich, and only Fribourg foresees a grade for those who have failed ("non sufficit").

Zurich	**Fribourg**	**Geneva**	**Lugano**
summa cum laude	summa cum laude	très bien avec félicitations du jury	summa cum laude
insigni cum laude	-	-	-
magna cum laude	magna cum laude	très bien	magna cum laude
cum laude	cum laude	bien	cum laude
rite	rite	assez bien	rite
-	non sufficit	-	-

Table 12: Attributed grades: verbal grades

Thus, also the final step of the doctorate is different among the different universities, regarding the composition of the committee and the degree of local influence on the evaluation, but also regarding the attributed grades. Given this variety, it would not seem prudent to compare the output of the doctorate at different places by comparing the grades achieved.

5.2 Ideal organisation? Different positions

The previous section has shown that in communication sciences in Switzerland there is no prevailing model in doctoral training, but several rather soft models with different degrees of standardisation and formal structures exist side by side.

Elements of the graduate school model are implemented to some extend, but in ways that suit local needs. Also the interviews with supervisors show that the graduate school model is not everywhere accepted as role model. These interviews reveal a more sophisticated view of the situation. There are clearly supervisors preferring the graduate school model, while others are more in favour of the apprenticeship model. Several supervisors, however, indicate that a combination between organised training in courses and learning-by-doing in an apprenticeship might be the best solution. In the following paragraphs, I present the arguments in favour and against the two models, but also possible ways of intermediary structures, as indicated by the supervisors in the interviews.

5.2.1 Organised doctoral training

When asked about the advantages and disadvantages of graduate school models, supervisors without experiences with this form of doctoral training (the majority in the sample) often refer mainly or exclusively to the organisation of training through mandatory coursework and colloquia. Other characteristics such as transparency in

admission and organisation, clear deadlines and time planning or institutional responsibility for the doctorate are not mentioned in the interviews. Therefore, the following paragraphs mainly refer to graduate schools as organised structure of coursework and colloquia.

Enhanced possibilities for learning

Graduate schools are often seen as a structure that allows training higher numbers of doctoral students. Supervisors that are against the introduction of graduate schools usually also reject having high numbers of doctoral students, while supervisors working with several doctoral students tend to be in favour of the introduction of graduate school like structures.

Supervisors in favour of graduate schools in doctoral training often propose three different types of courses that should be included: a) general courses on the field of communication sciences, its history and epistemology; b) courses providing doctoral students with the necessary tools to do a doctorate, including methodological aspects, but also regarding communication in the community, for example writing a literature review, presenting at conferences, or socialising in the community; and c) courses related to the specific topics of doctoral projects.

Regarding coursework, critical mass is an important topic: most often, there are not enough doctoral students working on topics that are enough similar to allow it to implement a specialised doctoral course programme. Externally funded doctoral programmes such as the Pro*Docs allow it to group enough students with similar topics, also thanks to the direct funding of a certain number of doctorates.

There are several supervisors that consider it good to have a few mandatory basic courses, while they don't think a wide range of mandatory courses is feasible. Some supervisors also say that they don't consider it feasible in their topic area, but that probably there are other fields, especially in the sciences, where this is a good solution.

Continuation of undergraduate training and time pressures

It seems that behind the appreciation or rejection of the graduate school model, there are also different conceptions of what doctoral students already have learned during their undergraduate studies, and correspondingly also of the tasks of doctoral training. People that are not so much in favour of implementing too much coursework see it as a distinctive characteristic of the doctorate that it provides much freedom to work independently on one's own topics, freedom which should not be challenged by obligating doctoral students to do attend courses.

Criticisms against the graduate school model mainly consider its mandatory, school-like characteristics. Coursework is seen as part of undergraduate studies:

> We should not stress our doctoral students too much with courses, which, it seems to me, help to fill gaps of a university system that probably does not do so much advanced things during undergraduate studies. *Supervisor*

In this perspective, organised coursework and detailed curricula are seen as something that belongs to the Bachelor and Master level, or to professional training, to universities of applied sciences. A doctorate is seen as another type of learning, which is challenged by the increasing trend to organise it as a third level of studies.

> [A doctorate] is another thing, that's a piece of scientific work developed by a young person, it's his own, his creation. I would say it cannot be that this is all coursework. Some courses are ok (...) but not everything. *Supervisor*

This vision corresponds to the German conception of the doctorate, where doctoral students are expected to have "reached the theoretical and methodological boundaries of their discipline" with their first degree, and where "initiation to the disciplinary body of knowledge" has thus already taken place (Enders 1999: 18).

Another difficulty with the graduate school model consists the incompatibility of organised, mandatory programmes with the workload doctoral students have as assistants or in their jobs outside university. The pressure to collect a certain amount of ECTS points is seen as counterproductive:

> What I don't appreciate is the development that one just quickly has to go in a colloquium, which is not related to one's own topic, just to have the ECTS. That's a pity. I don't think it's good that there is pressure to gather a certain amount of ECTS, that they just somehow have to do this. *Supervisor*

5.2.2 The apprenticeship or *bottega* model

While in the graduate school model, the responsibility is at the institutional level and shared among several professors, in the apprenticeship model the individual relationship between the doctoral student and his supervisor and the responsibility of the latter is much more pronounced. This is also expressed in the German word for supervisor, the *Doktorvater*. This denomination, however, is not appreciated by all supervisors, as shows the comment by this supervisor when talking about an aspect of supervision:

> Doktorvater – let's call it that way kiddingly, I don't share this diction too much because it's a little paternalistic. (...) For the younger [doctoral students] yes, I am somewhat still Doktorvater, then I become a senior colleague (...) but in the end I am a colleague, neither more nor less. *Supervisor*

Several of the interviewed supervisors that are in favour of a more individualistic model do not see the relationship between doctoral student and supervisor as an isolated relationship. They rather see it as part of a group:

> To give a picture: I like thinking of a *bottega*, an atelier. We are there and do our work, we do it together. At the beginning, the young person is there and just looks, then he is invited to help, then you do it together (...). And in the end (...) he is full-grown, he has to cut his own path. *Supervisor*

A fruitful environment

The picture of the *bottega rinascimentale*, the artist's or painter's workshop in the Renaissance in Italy, where artwork was done in collaboration between a master and his pupils who often started at the *bottega* as children and left only when they were independent enough to open their own workshop, is frequent in the answers of the supervisors from Lugano. This model corresponds to Lave and Wenger's (1991) concept of legitimate peripheral participation in a community, where a newcomer starts at its periphery and first learns by observing, then by collaborating and finally becomes independent.

People in favour of this model usually are not completely against coursework, but they consider it rather as marginal. To learn to do research by living in a research environment is what, according to them, distinguishes the doctorate from other types of higher education training. The same supervisor goes on:

> What's more difficult to learn, according to me, is what do I turn to, what do I do. How to understand that something is important, while something else is wasted time. That's why I think that the doctoral model is, probably saying it in a somewhat joking way, that of the workshop in the Renaissance. One cannot attend courses for understanding this, you have to be in a research group, to listen to the others when talking, to see how they do it, and you learn it in osmosis. There's no book telling you how to be a researcher in this sense.
>
> *Supervisor*

Limited resources

This model also entails some conditions. It is fruitful only if the *bottega* the doctoral student lives in is lively, if there is a stimulating environment. A supervisor in my sample clearly stated this to be one of the most important tasks of a supervisor: to make his workshop vivid. He does so by discussing many topics as a group internally or also with other groups.

A *bottega* should not be too big, in order to really allow for interaction. 4 or 5 people are seen as largely sufficient. Therefore, the number of doctoral students a supervisor can have is restricted. This is a point often made against the apprenticeship model.

Additionally, this model is more difficult to maintain with external doctoral students, as participation in daily life in the workshop is the most important element of the doctorate. This model fulfils to the aim of the reproduction of the academic community, but is seen as less suitable to a larger approach where the doctorate also leads to future positions outside academia.

On an international level, the apprenticeship model is criticised for lack of transparency and structure, which is assumed to lead to overlong duration of doctoral studies and high attrition rates. This kind of criticism is generally not made in the interviews. Supervisors in favour of more formalised models of doctoral training rather tell about the advantages of organised training than about the disadvantages of other forms.

5.2.3 Other possibilities to enhance the doctoral experience

Several doctoral students report that they would prefer to have a more structured model of doctoral training. However, they do not necessarily wish to have more internal doctoral courses, something that is often seen as not feasible due to the lack of critical mass. It rather seems that they feel somehow lost in the process and would like to have more structure for example in terms of milestones or deadlines, where it is clear what should be finished by when. The following paragraphs report what doctoral students and supervisors see as ideal elements of the doctorate.

Scientific climate and availability of time

Something several doctoral students are missing in their doctorate could be called scientific climate. Doctoral students not employed by a higher education institution experience this most profoundly. Employment as assistants allows being part of an "immediate research community" (Parry 2007: 10), at least physically, and gives access to resources. But there are also doctoral students employed by higher education institutions that would wish to be more integrated, and to have more time for exchange with their supervisor, but also with other senior researchers and doctoral students. Thus, they are probably lacking what was described above as the essence of the *bottega* model.

Scientific climate can be enhanced when doctoral students work on projects in which their supervisors are involved – even more so when the projects are linked to the doctorate. Also environments with several people working on topics enough similar to allow for serious, in-depth interaction is seen as favourable. Generally, integration of doctoral projects in larger contexts is seen as fruitful for the doctorate, but also for the larger project.

The advantage of daily integration in a scientific climate is also a reason why being a full-time doctoral student, probably on a scholarship, even though appealing, is not seen as the perfect solution for a doctorate, neither by doctoral students nor by supervisors.

Linked to this topic is also the request to have more time – on both sides. Some doctoral students wish to have more time to work on their doctorate, but also to discuss it with their supervisors, while some supervisors wish to have more time to read texts of their doctoral student and to discuss them with them.

Integrate plans for the future

One supervisor clearly states that it is necessary to know the doctoral student's objectives in order to make the doctorate a fruitful experience. When confronted with first results of the interviews with doctoral students who showed that many of them did not really know what they wanted to do in their future life, he reacted as follows:

> I am astonished that most of them don't have a goal. This means it's not clear to them where they want to go to. Thus there is no corresponding training. If it's not clear where they want to go, it's not clear either what for we should train them. Probably supervisors then don't think too much about it either. *Supervisor*

According to these objectives and to the doctoral students' specific competencies and areas of expertise, this supervisor attributes tasks to the different doctoral students. For example if a doctoral student aims at a career outside academia, he makes him do presentations in companies and work on projects with external partners, while conference presentations and activities involving an academic network are more likely to be done by doctoral students with academic interest.

Annual plans for the doctorate are made also by another supervisor in the sample, and two more consider it as absolutely necessary to understand the doctoral students' goals. In one case, every doctoral student has the right to have, during his doctorate, a one-semester sabbatical. This, however, is only possible and fruitful with long-time planning, both of teaching and research projects.

Deadlines and institutionalised supervision relationship

When listening to the doctoral students, it seems that too much freedom does not suit everybody. There is just one doctoral student in the sample who clearly states that his dissertation is his own work and he needs the supervisor only for formal reasons. Most doctoral students in similar situations see too much freedom as difficult; they would wish to have more guidance and pressure in the whole process, be it from the institutional level or from their supervisors. Some would wish to have a final deadline for handing in their thesis (in some places this is possible at any moment of the year). Also intermediary deadlines, for example posed by a supervisor for handing in chapters of the thesis, are something many doctoral students would like to have. These deadlines, however, are seen as positive only if afterwards there is feedback on what was delivered.

Regarding institutionalisation of the doctorate, some doctoral students refer to examples from abroad, where the relationship between supervisor and doctoral student is regulated through a contract defining rights and duties of both sides, underlining that they would appreciate such institutionalised relationship. This is the case for example in Norway, Sweden, the Netherlands, Italy or France (Moes 2003; Kehm 2007a).

5.3 Short conclusions: integrating elements of different models with local needs – a pragmatic approach

The analysis of the regulations in the field as well as the interviews have shown that in communication sciences in Switzerland, the graduate school model is not yet fully implemented, transparency both in admission and the process is still low. Rather, there are single elements of more organised training that are introduced at some places. The following paragraphs offer a summary of the situation.

Graduate schools that correspond to the U.S. model, including a first year devoted exclusively to coursework with consequent exams, are not found in Swiss communication sciences. The situation most similar to this model is probably the one at the university of St. Gallen, with mandatory coursework during the first year and a pre-study to be written before starting the doctorate. With the new regulation coursework is spread over the whole period of studies.

Other examples of graduate schools mentioned in the interviews usually are less formal. They are organised by professors or institutes, and do not depend on the faculties, which are responsible for regulation of doctoral training. Thus, it is not mandatory for doctoral students to participate in a graduate school. The graduate schools in Geneva and Basel are rather an offer to doctoral students. All doctoral students officially belong to them, and are required to participate in some of the events that are organised by the graduate school, but it is not mandatory to participate every time. The graduate school in Basel is interdisciplinary, which is also appreciated by the doctoral students. However, doctoral students state that they have to participate only when their supervisor participates, and thus it seems that the interdisciplinary character might be restricted, and the main responsibility of supervision remains with the supervisor.

Also a *bottega* model is usually not restricted only to the institute. Supervisors indicate that it is fruitful to integrate on-the-job training with some courses. The programme, however, is tailored to the individual doctoral project. As the needs usually differ among the students and projects, doctoral students attend courses for example at the Bachelor and Master level, at other universities, in summer schools or during stays abroad.

There are also supervisors and doctoral students that report about situations where the responsibility seems to be completely with the doctoral student. One supervisor deliberately chooses this model, as he thinks that the doctoral students should have as

much freedom as possible. In his case, the doctoral students have to choose whether and which courses they want to attend, and he just "nods it through". Other supervisors report that their supervision is scarce, in that they would wish to have more time to devote to the doctoral students.

In the interviews, two supervisors mention that they think it would be fruitful to have different models of doctorates that are officially legitimated and exist contemporaneously. This would allow distinguishing between, for example, external doctoral students with working experience in the private environment who do a doctorate exclusively for use outside academia, and internal doctoral students preparing for an academic career. While some supervisors already distinguish different models in an implicit way, there is not yet any official recognition of such differences. One supervisor reported that at his university, they are currently discussing the future model of doctoral training, and that there are three models proposed so far. The university's plan seems to be to decide for one model, while he does not see this feasible. To allow only one model would exclude potential doctoral students from doing a doctorate. He is in favour of introducing different models. This would also allow better preparing a small group of doctoral students for an academic career, as he explains:

> Well, I can imagine that a distinction is made between PhD and doctorate. That we say we let you in, and when we see that somebody is proceeding well in the doctorate, we say ok, you add two more years, a PhD training, for example you have to go abroad for half a year or a year, and you have to write a certain number of journal papers. (...) I am in favour of nurturing the people we want to have as professors, that we nurture them for the academic career. (...) That we say ok, probably you wish to pursue an academic career, we think this is ok, and then we nurture them systematically and shorten the times. *Supervisor*

Overall, it seems that in the organisation of doctoral training, there is currently some wind of change. It seems possible that some more structured elements will be introduced in the years to come, probably also including the efforts of the SGKM to offer training for all doctoral students in the field in Switzerland. Most probably, however, local and individual differences will continue to exist, and that the doctorate will be adapted to the needs of both the individuals and the institution.

6 The personal dimension: a period of development and learning

A doctorate is not just an additional course one takes. It is a process of several years and requires a lot of personal investment. To do a doctorate means to explore one's own abilities, but also one's boundaries. This process involves cognitive and academic, but also personal development. This section addresses the personal dimension of the doctorate. First it looks at why somebody decides to do a doctorate. Then, the employment situation, including synergies and incompatibilities with the doctorate, is addressed. Sections on doctoral students experiences in the process and their beliefs about the value of the degree follow. Finally, plans for the future career are addressed.

6.1 Reasons for doing a doctorate

In large-scale studies based on questionnaires, scientific curiosity is often found to be the most important reason for starting a doctorate (Enders and Bornmann 2001; Gerhardt et al. 2005; Wirth et al. 2005b; Engelage and Hadjar 2008). The doctorate is also seen as a step that improves one's professional opportunities, as a precondition for one's future career. The absence of interesting alternatives is a reason for starting a doctorate only for a low share of doctoral students, encouragement by a professor results even lower in its importance (it is an important factor for 6% in the study by Gerhardt (2005).

In my interviews, similar reasons emerge, however with different importance. This is probably influenced by the methodology – while questionnaires usually propose a list of possible reasons for doing a doctorate, and the respondents then attribute them importance, in my interviews doctoral students were asked to tell their path to the doctorate, and, if reasons did not emerge from these accounts, to explain why they decided to do a doctorate. Thus, the results are not comparable.

Previous contacts and experiences

In my sample, *direct contact to a professor* who encourages the doctoral student to pursue this degree is important. More than one third of the doctoral students report that a professor – not always the future supervisor – had some influence on their decision to do a doctorate, be it by encouraging them to implement their plans or by putting the idea of doing a doctorate in their head:

> Some professors told me that they could imagine me in an academic environment, because they saw that I like it to do presentations, that I am good in explaining things, and interested in scientific work, statistics, and so on. I was aware of this, but I never considered doing a doctorate as an option. *Doctoral student*

But also concrete *experience as student assistants* in academic units can encourage doctoral students to start a doctorate, as this same doctoral student continues:

> For me, a doctorate always was something very theoretical; I thought it meant to elaborate a model, to read, to write new theory. Thanks to my job at [the research unit], I've seen that it's very practical, applied. Here, you are not an assistant that, besides this job, writes a dissertation, but you work in a real project, and with additional theoretical elaboration you can make your dissertation out of it. As soon as I've seen that it's possible to combine a doctorate with practical work, such as statistics, social marketing, campaigns and analyses, I was interested. [My supervisor] encouraged me a lot, he has shown me that a doctorate is composed of many practical steps. *Doctoral student*

Previous research experience is an important motivator for doing a doctorate. 12 doctoral students in the sample referred to previous experiences as student assistants or to research work done during their studies, most often for their Master's thesis, as being something they have enjoyed, and thus wanted to continue. They appreciate the possibility given by the doctorate:

> To do, for some years, something I like doing, and to be paid for it – whenever will I have this possibility again? *Doctoral student*

The doctorate as cognitive experience

Curiosity and *the wish to learn* is mentioned by every fourth doctoral student: 2 state that they have decided to do a doctorate because, after their first degree, they wanted to go on learning, while 9 said that they wanted to deepen some topics, or to specialise after their first degree:

> I felt that there was something missing. After my studies, I realised that there were certain things that were in suspense, things to understand. I felt like I wanted to understand more. There was something specific I always felt attracted to, I didn't succeed to do it before, I wanted to do it. *Doctoral student*

A doctorate as a *possibility for reflection* is a reason mentioned by older doctoral students: Four out of the five doctoral students who took their first degree seven and more years before the start of the doctorate, and who, in the meantime, have made a lot of practical experience outside the academic environment, mentioned as main motivator the fact that they felt the need to stop, to look at their activities with more distance, to reflect on what they were doing in their job.

The academic profession and future career possibilities

Even though only one doctoral student in my sample mentioned that when starting his doctorate he aimed at an academic career, the idea of the *academic profession* also seems to be a motivating factor:

> I always liked it to read, to learn, to do intellectual work. To think that some day they will pay me for doing it – that's not a too bad idea. *Doctoral student*

Considerations regarding the future career did not emerge prominently from the interviews: only two doctoral students mentioned as first reason that they did a doctorate because they needed the degree for their further job aspirations – in one case, for teaching adults, in the other case in order to gain access to interesting job positions in a private company. One doctoral student mentioned that doing a doctorate allows him having an interesting job position during the doctorate, and on the same time fulfilling his family duties. However, several doctoral students report that they hope that their doctorate offers them *better possibilities on the job market.*

The enhancement of job opportunities is one of the main reasons for doing a doctorate found by Engelage and Hadjar (2008) – they use results of a questionnaire sent to graduates (including doctorate) of Swiss universities, thus a retrospective view. This probably indicates that after graduation the degree's value outside the academic environment is seen more positively than during the doctorate.

Emotional reasons and coincidence

There are also more emotional reasons for doing a doctorate. One student in the sample said that he sees the doctorate as a challenge he wanted to meet, while another one mentioned vanity as reason – his girlfriend was doing a doctorate as well. Again another doctoral student puts it like this:

> I want to have this doctoral degree. Not to write it on my doorbell panel, but I want to have it. It also allows me to prove something – if you have a doctoral degree, then they have to believe that you're able to do something. *Doctoral student*

Several doctoral students have started the doctorate rather by chance. They were offered the possibility of an assistant position or of doing a doctorate, and saw no reasons against it. Many doctoral students in the sample alluded to this, but then also mentioned other reasons, as the ones explained above. Three students in the sample, however, mentioned only this "why not" as reason for doing a doctorate.

Three doctoral students said that the doctorate was the only alternative they had – they were not able to find another job, and so decided to do a doctorate. Two of them left

their position at the university after some time. Thus it seems that doing a doctorate because there's no alternative is probably not a good start.

Starting without clear ideas

When starting a doctorate, many doctoral students do not really have clear ideas about what expects them, or what they are on to do:

> I knew that I liked to go deeper into some topics (...) It seemed to me to be a way to go on developing some topics, to do – research I'd say now, probably I did not imagine it to be research. To go on studying, deepening topics I was interested in (...) That this was called doing a doctorate was also fine with me. *Doctoral student*

At the beginning, a doctoral student's beliefs about the doctorate are mainly influenced by accounts from others and by vague ideas. During the process he enriches this meaning by personal experience, but also through interaction with other individuals engaged in the doctorate.

Doctoral students in the interviews often referred to changes in their motivations during the doctorate. There are doctoral students who started a doctorate with the clear idea to leave the university once it is finished, but now consider also an academic career as a possibility; or vice versa. Here, what Golde (1998) refers to as the tasks of the socialisation process becomes visible: it is part of the doctoral process to find answer to the questions "Do I want to do this work?" and "Do I belong here?", related to the profession and to integration.

Some supervisors mention that they try to find out, usually in a personal conversation, why somebody wants to do a doctorate. Some also report that who starts a doctorate is often not aware of what this entails, both during and after the process, and that it's the supervisor's task to point it out to them:

> First, I start with a fair conversation. There, I ask them very stupid questions, why they want to write a dissertation, do they know what this means, to live for three to five years like a nun. I tell them that I probably know more people who have written a dissertation and who now are divorced than those who still talk to their wife or husband. I really try to distil why they want to do this work, whether it's only about the degree, because I really think in terms of strategies. *Supervisor*

Also some doctoral students report that it is important to know, from the beginning on, why one wants to do a doctorate. Generally, they say that if one wants to do it in order to get the degree for a better career outside academia, then he should try to have a project that he can finish within a short time and concentrate on it, while if somebody aims at an academic career, it's not lost time to invest also on other activities, such as publications, and to explore the topic more deeply.

Thus, the reasons for doing a doctorate should, at least according to some supervisors and doctoral students, ideally influence on the topic as well as on the process of the doctorate.

6.2 The doctorate as employment situation

Most doctoral students in communication sciences in are in a twofold situation: they are employees and students of the same institutions simultaneously.

As employees, doctoral students contribute to the daily tasks of the higher education institution in a not insignificant way. The implicit contract between doctoral students and the institution foresees that doctoral students provide workforce at a cheap price (regarding Switzerland see CEST 2007), and, in return, receive the opportunity to pursue a doctoral degree.

In the international literature and policy discussion, there is no agreement whether somebody doing a doctorate should be considered as being in his last cycle of education or in the first stage of professional activity (Mangematin et al. 2000; Kupfer and Moes 2004). Usually, doctoral students are enrolled as students at universities and affiliated to a department or institute, and membership in graduate programmes is additional (Kehm 2007a).

There are hybrid situations, as in the Netherlands, where doctoral students are employed, and supposed to contribute to the institution's teaching and other activities with up to 25% of their time, while 75% of their time should be devoted to research. (de Weert 2004). In Sweden and Norway for example, doctoral students are funded for the whole duration of their studies. They are required to contribute to teaching and research activities, but 75% of their time is reserved for the doctoral project (Kehm 2007a). This model is often seen as good practice – the German *Gewerkschaft Erziehung und Wissenschaft* (union for education and science) for example demands a similar model to be implemented (Kupfer and Moes 2004).

In Switzerland, this relationship between doctoral students and the university is not regulated at a central level or in the regulations of the faculties. Often, doctoral students are employed by the higher education institutions as research or teaching assistants, with a higher or lower degree of compatibility and connection between the two roles. It is also possible to do a doctorate without being employed by a higher education institution or being part of a graduate school structure.

The recent trend to introduce graduate schools leads to another form of relationship: the Pro*Docs for example foresee the complete funding of some doctoral students, which are then paid for doing their doctorate. In my sample, however, there is not yet anybody in this situation.

In the sample, 33 out of the 41 doctoral students are employed by the higher education institution where they are doing their doctorate. One doctoral student is employed by a University of Applied Sciences, and one is employed by a Swiss university and enrolled for the doctorate abroad.

The interviews show that employment at a higher education institution, ideally in direct collaboration with the supervisor on research projects that are at least to some extent linked to the doctoral project, is considered the most favourable situation for doing a doctorate, both by doctoral students and supervisors. One professor referred to the differences between internal (employed by a the university where they are doing their doctorate) and external (not employed by the university) doctoral students as follows:

> It's clearly a two-tier society. (...) He who is working as assistant and doing a doctorate is clearly better off. He has everything at hand. His dear supervisor, the books, he does not need to be a stranger, because he reconciles both worlds, the job to live on and the job for which he has a goal. That's really much easier. *Supervisor*

Access to different types of resources is one of the most often mentioned advantages of being employed by a higher education institution while doing a doctorate. In this situation, doctoral students are immersed in a community – they get to know about new publications, about conferences and hot topics, and have the chance to get informal supervision by other senior researchers as well. As a doctoral student who is not employed by a higher education institute puts is:

> Those who work here [at the university] can participate in the organisation of events, of colloquia, of research groups. They can do research besides their doctorate, participate in teaching. That way they construct a CV, when they finish their doctorate, they already have done something. I have to search for this on my own, I have to answer calls, to present myself all by myself. That's more difficult. (...) What I'm missing is to do more researchers' things. *Doctoral student*

Also the relationship between doctoral students and supervisors differs between the two situations. Regular direct contact regarding aspects not only related to the doctorate leads to a more intense relationship, as this supervisor states:

> Probably [those employed internally] feel more under my thumb, and I put more pressure on them, when I set deadlines. (...) And yes, I do so correspondingly, and obviously I can put on them a different kind of pressure, when I see them every week. And, I think, they also feel committed in a different way, probably also morally, somehow, to work extra precisely and on time. *Supervisor*

This double-faced relationship, regarding job and doctorate, also allows for more informal discussions on the doctorate and on other topics. There are doctoral students

who report that they do not have regular formal meetings with their supervisors, but they meet for a chat at coffee breaks, in the corridor, or at other occasions.

Even though employment by the university is seen as a favourable situation for doing a doctorate, there are also incompatibilities, and the synergies between job and doctorate vary. Synergies and incompatibilities between doctorate and employment are at the focus of the following paragraphs.

6.2.1 Different types of synergies between employment and doctorate

Enders and Bornmann (2001) show that doctoral projects of students employed by the university or at a research institute are generally more embedded in research projects and more frequently done in collaboration with others than those of doctoral students financed externally. In my sample, 35 doctoral students are employed by a higher education institution. 29 of them fulfil tasks in the area of teaching, 22 in the area of research. 20 cover tasks in administration – one of them without other tasks in teaching and/or research (Figure 6). In all these areas, synergies can be identified.

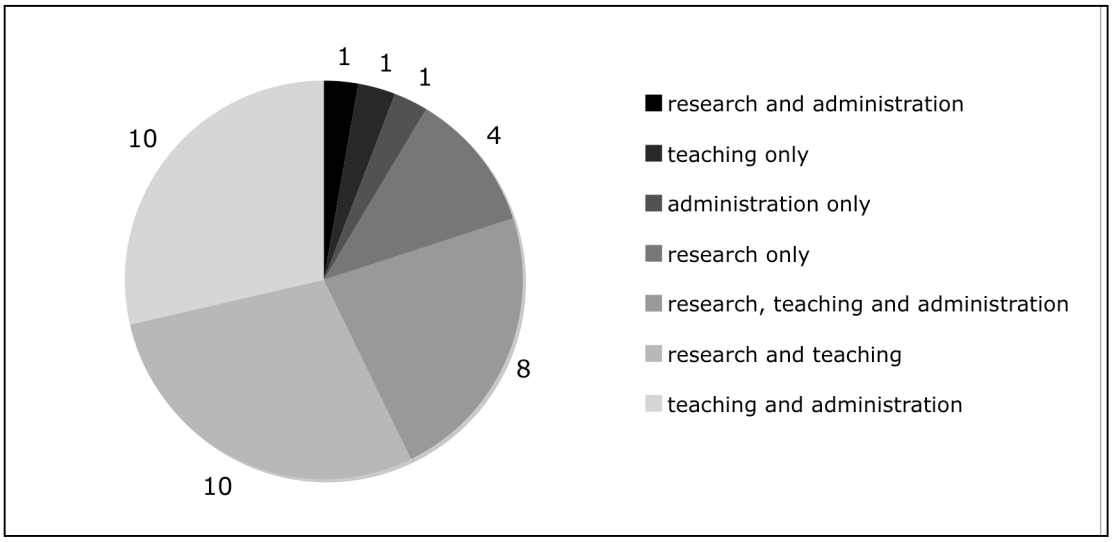

Figure 6: Tasks of doctoral students employed by higher education institutions (N=35)

Regarding research, involvement of doctoral students ranges from limited participation in small projects, which is done besides activities in teaching and administration, up to responsibility for larger projects. Among doctoral students involved in larger research projects different situations are found: some are working on their own on a (often third-party funded) project that corresponds largely also to their dissertation project, while others work on research projects that have fewer or no synergies with their doctorate.

Besides overlapping of whole research projects with the dissertation, there are also other types of synergies in research. Doctoral students report about situations where the same

theoretical framework is used for both the project and the dissertation, while in other cases the same data set is analysed. Two doctoral students tell that in their case, the synergies went the other way round: their work in the dissertation helped for the preparation of a proposal of a future research project which was prepared when their doctorate was already at an advanced stage.

Also tasks in teaching and the corresponding synergies vary. Assistants' activities regarding teaching range from making photocopies and preparing slides up to responsibility for whole seminars and courses. Here, some variation depends on the universities: at some places, only people having a doctoral degree are allowed to teach, while elsewhere doctoral students can teach seminars and even courses.

In several universities, assistants can influence the topic of the seminars they hold, and thus they try to teach in the area of their dissertation. Supervisors also apply this strategy:

> They contribute to some extent to my teaching. (...) For example I always have seminars together with my assistants, at which I try to make sure, if possible, that the topics of the seminars are close to the dissertation topic. So we can use some effects of synergies, and the motivation to contribute is obviously higher. *Supervisor*

In this case, the benefits are often bi-directional – doctoral students benefit because they can develop further their work on the dissertation, and the seminar benefits of expert knowledge of doctoral students.

Other tasks include also preparing and marking exams. Besides activities directly related to lectures, assistants are also often responsible for supervising undergraduate students in their Bachelor and Master theses or in term papers.

When supervising undergraduates, doctoral students report that the assistants working for the same professor try to divide the theses according to the congruence with each assistant's dissertation topic; some even try to convince students to work on topics that help them for their doctorate.

Some doctoral students individuate another type of synergies in the area of teaching: the chance to enlarge one's basic knowledge or to gain knowledge beyond the dissertation topic. The following statement stems from an interview with a doctoral student who is quite often assisting in teaching:

> I don't think there are synergies directly on the doctorate, but considering that I am doing a thesis in [field XY], (...) – it's not directly connected, but it's good for a [scholar of XY], it makes sure you are not focussing only one argument. If ever, in the future, I wish to teach [in the field XY], I will also have to teach [the field I am now working on besides my doctorate]. It's good also when looking at the future, to keep a broad view. I don't consider it bad, but good. *Doctoral student*

Also activities in administration and management are considered as fruitful learning opportunities, both for future positions in- and outside academia. This view, however, is not shared by all interviewees, both doctoral students and supervisors – the ideas about what doctoral students should learn vary.

Also job positions outside academia can be a source of synergy – for example in the case of a doctoral student writing about campaigns in a specific sector, who is active as a campaign manager in this field himself, or of another doctoral student working as a political journalist and writing his dissertation in the area of political journalism.

6.2.2 Incompatibilities: not enough time for doing a doctorate

Generally, doing a doctorate while being employed at a university is considered a good situation. It seems that there is mainly one incompatibility, which can become, however, a big challenge: the availability of time. This is also confirmed in the international literature (see for example Gardner 2006).

The official employment percentages of doctoral students in the sample range between 50 and 100%. At some places, these percentages include a certain amount of time to devote to the doctorate, while in other places the doctorate is mainly done outside the employment. Most doctoral students state that when considering a whole year, their employment percentage more or less corresponds to the reality, with moments of higher and lower intensity depending on the academic year and corresponding activities related to undergraduate courses. There are, however, also doctoral students who clearly state that they work much more then the hours they are employed for. Many doctoral students also say that it is difficult to differentiate between activities for employment and activities for the doctorate:

> There's no clear division between work for the dissertation and the rest. I've once tried to write down the hours, but it didn't work out. *Doctoral student*

It seems that to defend one's time for the doctorate is a difficult task. This is perceived both by doctoral students and supervisors. As one supervisor puts it:

> Unfortunately I have to say that often it's the student who has to defend the necessary space for the doctorate, and thus not put up with every activity. Because it's clear, if you [supervisor] have a person in front of your office, every time you need help, it's not that then you are there with your calendar and the counted hours and say well, he already has done his 50%. *Supervisor*

That time is the most precious resource for doing a doctorate is also reflected in the answers doctoral students give to a question asking for advice they would give to future doctoral students, as the following example shows:

> Don't show up in the office when you plan to work on the doctorate. Establish yourself; take your own space, your time for working on the doctorate. It's not always easy, there's always a mass of never-ending work. *Doctoral student*

6.3 The doctoral experience

So far, doctoral students' motivations and the synergies and incompatibilities between the doctorate and an employment as an assistant have been addressed. The following paragraphs look at the doctorate as such, at the beliefs that both doctoral students in the middle of the process and supervisors have about it.

When asked what a doctorate is, or what it means to do a doctorate, most doctoral students first refer to the process as a period of freedom to work on a topic they like and of personal development. Aspects relating to the doctorate as a degree are often mentioned only later on. They are addressed in the next section, while this section focuses on the former aspects.

A unique situation: time to explore a topic

To do research has already been mentioned as a reason why doctoral students choose to start a doctorate. This point again emerges when they are asked about what it means to do a doctorate:

> What I like is doing research, when I do research I don't do research in order to do the doctorate, I do research because I like doing it, that's the stimulating part of it, the doctorate as such does not have any meaning. (...) It's what stands behind it that has a value. *Doctoral student*

A doctorate is most often seen as an opportunity to devote a certain period of one's life to a topic one is deeply interested in and to explore it in a profound way. A doctoral student in the sample used the metaphor of the explorer in describing the process as an

> intellectual research and adventure trip in fields I did not know before, in scientific areas I did not know, new approaches, theories, methods. *Doctoral student*

At the end of this trip stands the doctoral thesis, a "journeyman's piece", as it was referred to by a supervisor.

Doctoral students are aware that they are in a unique situation, and they appreciate it. Many of them state that the doctorate is probably the only moment in their life when they really have time and freedom to work on a topic they are interested in, to deeply explore a topic. This perception is also influenced by their observation of the situations of senior researchers.

The long-term nature of the doctorate, however, is also seen as a challenge. To stick to a topic for three to five years, generally without much external pressure, needs a lot of personal, intrinsic motivation. Hard-headedness is therefore mentioned as a characteristic doctoral students need to have in order to do a doctorate successfully.

A challenging period of personal development and learning

To do a doctorate is a challenge. Doctoral students are faced with cognitive aspects and social situations that are new to them – they go through a process of socialisation in which they become, step-by-step, part of a community and learn a profession. This socialisation process not only includes acquisition of knowledge and skills that are necessary for conducting research, but is also a process of personal development and learning. Different types of competencies and skills are acquired, and attitudes might change, new identities are achieved. Much of it occurs as learning by doing – courses are rarely mentioned when talking about the meaning of the doctorate. This is in line with Campbell's (2003) findings: much of the learning during a doctorate occurs through formal and informal interaction with seniors and through participation in the research process, in the setting of an academic department or institute. Through induction in this local community, the doctoral student learns how to contribute to a specific field (Parry 2007).

For most doctoral students in my sample, the main socialisation experience they have had before starting the doctorate was socialisation into the role of an undergraduate student. To do a doctorate, however, requires a different type of approach (Campbell 2003).

During the process, doctoral students become aware that the situation has changed – the type of knowledge and skills acquired in a doctorate differ from those acquired at undergraduate studies, and perspectives as well as challenge shift:

> There's so much literature. During undergraduate studies, I always thought there's nothing about this topic, but somehow the perspective has changed. Now the difficulty is to say no, I do not go on reading in this direction. *Doctoral student*

During a doctorate, previous ideas and preconceptions about the research activity can change. A doctoral student who has been working on research projects before states that he has learned that an important part of doing research consists in discussing, in exchanging ideas. A doctoral student becomes aware of the fact that research is not a lonely activity, but something that is embedded in a community, as is also underlined by this supervisor:

> [To do a doctorate means] to acquire the state of the art in a specific field and to grapple with what others have done, and to create than something new out of this, a small gain in knowledge, thanks to the fact that one is standing on the shoulders of giants. *Supervisor*

Thus, it is part of the doctorate that a doctoral student identifies its community of reference and maps his topic inside this field (see 7.3). One supervisor stated that, in the beginning, in order to establish oneself in a field, it is more important to become aware of what is done in the community and to use what already exists than to contribute with completely new ideas:

> Research is done in a community. One has to clearly know which is the community he talks to. (...) Then I propose them to look at the problems this community considers important (...) And the third point is to try to find a solution to one of these problems by using exclusively what already exists. The most important thing (...) is to understand what to work on, much more than how. *Supervisor*

A doctoral student has to get to know a field deeply also in terms of its social structures. He learns who are the players in the field, and starts building his own network. This requires also learning how to move inside this community, and to familiarize with one's role as a doctoral student. To get in contact with the disciplinary community also means to start communicating. Thus, a doctoral student also learns where and how the disciplinary discourse is held. He enters this disciplinary discourse, and he learns to contribute to it, to talk to people working on the same or similar topics in a competent way.

Besides knowledge and competencies related to the topic and the respective community, a doctoral student also acquires transferable skills when doing a doctorate – both through the doctorate as such and through the experience as an assistant employed by the university.

In line with what the regulations state, also doctoral students and even more so supervisors see the doctorate as a process through which students become autonomous researchers. They learn to structure and manage research projects and build analytical skills allowing them to overlook an area and to reach conclusions, to gain knowledge. Ideally, they are able to formulate recommendations out of their findings. But also creativity is mentioned as an important characteristic of a researcher: to take over new perspectives, to see the "black swan", to find new approaches to established thoughts.

Doctoral students also learn to work with deadlines – especially when working as assistants on research projects with external sponsors. They learn to work independently and in teams, and they understand how a department works. They take over responsibility and learn to manage their time. Doing a doctorate is also seen as a chance to acquire cultural know-how, to broaden one's mind. A doctorate gives the chance to be confronted with interculturality, plurilinguism and interdisciplinarity.

The doctorate also fosters one's ability to give and receive criticism, to take advantage out of the confrontation with others. Doctoral students become critical thinkers, they

question facts and statements they are confronted with, but they remain constructive. Doing a doctorate also means sharpening one's thinking. Doctoral students learn to argue, and not only to state.

The doctorate is often seen as providing a lot of freedom and autonomy, providing much leeway. In order to cope with this situation, however, self-discipline, self-organisation and personal responsibility are necessary characteristics. To do a doctorate means to grow and to become aware of oneself; but, as stated both by doctoral students and supervisors, moments of frustration are frequent as well, and the doctorate is also seen as "a good opportunity to exploit oneself" (doctoral student).

Thus, doctoral students also learn a lot about themselves, about their abilities and limitations. As a supervisor puts it:

> A doctorate is always also a laborious process; I think most doctoral students, at any time, are desperate and want to give up. To struggle through this and bring it to an end, that's always quite a big effort. This means you get to know your potential, and that you are able to do this, and you are strengthened. *Supervisor*

Or, in the words of a doctoral student:

> A doctorate gives you the experience to be able to carry out something through a long time, you do no longer have to fear any project afterwards. *Doctoral student*

6.4 The doctorate as a degree

When asked about the meaning they attribute to the doctorate, doctoral students also refer to its value as a degree, thus to the meaning they think this degree has for different groups of individuals – academic communities, but also the non-academic world, for example potential future employers or society in general. The international literature acknowledges differences of this value among countries and disciplines; my interviews also reflect individual differences in the perception of doctoral students and supervisors.

The doctoral degree is clearly seen as a *sine qua non* for an academic career, as the way to go if one plans a future in university, but also in other institutions devoted to research and/or teaching, such as Universities of Applied Sciences or private research foundations. The doctorate is seen as an entry ticket to the scientific community, an important scientific qualification, as this doctoral student who is a frequent participant at conferences states:

> It's also recognition by the community, so to speak, you have to bring it along; otherwise you count only half as much. *Doctoral student*

While the CEST (2007) states that doctoral students in Switzerland do not attribute value to the doctorate for purposes outside academia, doctoral students in my sample also see

it, at least to a certain extent, as useful outside academia as well: many doctoral students hope that it provides them with better employment perspectives. Engelage and Hadjar (2008) have shown that generally in Switzerland, to do a doctorate entails advantages, both regarding objectively measurable factors (income and risk of unemployment) and subjective perception (job satisfaction).

The respondents in my sample see the degree also as allowing distinction from the mass of graduates, especially in communication sciences. The doctoral degree is not only seen as a study degree, but also a professional title, indicating one's abilities, for example to do independent work, to manage a project over several years, and the fact that one has become an expert in a specific field and has reached scientific achievement.

But there are also doubts regarding the value of the doctoral degree:

> At the professional level, it is a title, I suppose with a certain value, even though I'm not sure that this value is clear also to the world outside, I don't know whether it helps in finding a job. *Doctoral student*

Some doctoral students fear that the doctoral degree might even have a negative impact on their future career possibilities. They are afraid of being overqualified, or that the amount of years it took them to finish their doctorate is seen as a lack of "real" working experience. A doctoral student also mentions that he "will not put [his] degree on his business card", as he thinks to be working in an environment where this would be rather counterproductive.

A supervisor reports that he has been approached repeatedly by communication managers from large companies who wished to do a doctorate – on the one hand, they liked the idea to have time to devote to a topic, but on the other hand they also have met barriers in their careers that they cannot overcome without a doctorate. Thus, the value of the doctorate outside the academic context is underlined.

Overall, supervisors are more positive than doctoral students about the degree's value on the labour market, especially when referring to the situation in Switzerland and Germany. The differences between countries and sectors, however, are underlined.

There are, however, also supervisors who underline that "the academic career pays late and little", and who clearly see it as their task to make this clear also to the doctoral students – to make sure they have other motivations for doing their doctorate than earning more money.

Thus, it seems that while the meaning of this degree inside the academic environment is somehow institutionalised, beliefs about what meaning the external world attributes to it differ.

The doctoral degree can also be interpreted as a sign legitimating one's desire to learn, an official recognition of one's passion for research. Doctoral students often state that they do not attribute too much value to the degree as such – the degree's value on the labour market is rather seen as a positive side effect than as the main purpose of the doctorate. They rather state to do a doctorate because they feel a passion for research; or they see it as a personal challenge, as a project they want to conclude.

But even though many doctoral students underline that they did not do the doctorate in order to gain social status or prestige, to possess a doctoral degree is, at least for some doctoral students, also important on an emotional level. As this doctoral student puts it:

> Currently, it's rather for private use, that I put all my forces in achieving it, that I'm able to manage it… it's cool, somehow. *Doctoral student*

6.5 Academic vs. professional future

A doctoral degree is a milestone in one's career. But where does this career lead to after the conclusion of the degree? As has been shown, in Switzerland there are much more doctoral students concluding their degree every year than open academic positions (2.2). Thus, many doctoral students will have to find their future outside academia. Studies from other countries show that also elsewhere the academic career is by far not the only path doctoral students aim at.

Already a look at Switzerland's neighbouring countries shows different situations, both among countries and disciplines. In Germany, many doctoral students aim at a career outside academia (more than 50% in Enders' (1996) study). Higher education institutions are important employers of doctoral degree holders, but they cover, depending on the field of studies, only around one to two fifths of doctoral degree holders 10 to 20 years after their graduation (Enders and Bornmann 2001). Doctoral degree holders from humanities and social sciences often work in the areas of arts, culture and media and in public administration (Röbbecke and Simon 2001).

Regarding France, Paul and Perret (1999) show that one year after the conclusion of the doctorate, post-doc positions are most common in science disciplines (28.7%) and less frequent in the arts, humanities and social sciences (7.3%). In the latter fields, a large share of doctoral degree holders (26.9%) is employed on permanent positions by higher education institutions. In all fields, the public sector (higher education, public research and secondary schools) is the most important employer (covering nearly two third of the doctoral degree holders in sciences, three out of four in other fields; (Paul and Perret 1999).

In Italy, students enrolling for doctoral courses mainly aim at an academic career. Until 1999, the number of available doctoral positions was imposed centrally, and all doctoral

students received funding in the form of ministerial fellowships. The number of positions was based on the estimated number of available (mostly academic) positions for doctoral degree holders (Moscati 2004). Since 1999, universities have more autonomy regarding the implementation of graduate courses and admission of doctoral students (Avveduto 1999), and also doctoral students without funding by the Ministry are admitted.

Thus, overall there are more doctoral students leaving the academic sector after their degree in Germany than in Italy and France. In Germany, among the most important reasons against staying at a higher education institute after having received the doctoral degree are the career opportunities, the income situation and the employment conditions at these institutes as well as employment possibilities outside academe (Enders 1996).

These factors are also reported in my interviews by respondents with German origins: they state that they consider it a possibility to pursue an academic career, but only if it's not in Germany, because the situation there is considered precarious and they can not identify any attractive career paths. Similarly, doctoral students and supervisors with Italian origins acknowledge that in their country, the value of a doctoral degree outside academia is rather low.

In the following, the views of doctoral students and supervisors regarding future careers of doctoral degree holders in communication sciences in Switzerland are addressed.

6.5.1 Declared plans for the future

Overall, my interviews show that when starting a doctorate, many doctoral students do not know what they are on to, and where this degree will lead them to in the future. Preferences regarding the future career can change during the process, as is confirmed both by doctoral students and supervisors.

At the moment of the interview, one third of the doctoral students (14) stated that they would like to have an academic career or a career in research. In Wirth et al.'s (2005b) study, 20.8% of the doctoral students in Switzerland answered affirmatively to the question "do you aim at a career as professor?" – thus to a slightly different question. Compared to the results from Germany (31.4%) and Austria (52.9%), this number is rather low. In Enders' (1996) study on Germany, 22% of the respondents overall and 47% in social sciences aim at an academic career.

Two of the doctoral students in my sample aiming at an academic career wish to integrate this academic career also with a small but regular share of professional activity outside academia. Three other doctoral students aim at a career that allows them to combine both – for example by teaching and doing some research at a university of

applied sciences while being employed also as a professional in the area of teaching and research.

The academic career, however, also leaves some questions open, as this statement by a doctoral student who is already in an advanced stage of his doctorate shows:

> What perplexes me is the path to follow after the doctorate, for doing an academic career. I don't see it as a stable thing, I see a period full of incertitude after the doctorate, you have to be ready to abandon everything, to departure, to search for a position everywhere. It doesn't seem to me that the offer is big enough to allow for choices, and I ask myself whether this is really what I want or not. I like academic work, it's flexible, interesting, an ongoing improvement, nice, you do research, what I like doing, but on the other hand I don't know whether I will be ready to go through five or six years travelling around the world, looking for a job. *Doctoral student*

These two points – the need to spend some years abroad and the uncertainty – are made by several doctoral students. But also regarding the academic profession, there are some reservations:

> There are some things about this academic enterprise that I consider rather abhorrent. (...) [It] rewards narcists, and I cannot live with narcists. And if you want to have success in there, you have to adapt to this pattern and play the game, and I am not so keen on that (...) And if you think what a professor is doing, he is not doing research himself, probably he still writes books, but that's textbooks, not something that is really about new stuff. Thus, a professoriate is rather research management than research. (...) for me it's not about staying at the university, it's about doing research. In this respect, a professoriate is the thing that is associated with the highest reputation, the highest salary, but, occasionally, in terms of content, it could be more interesting to be a research associate. *Doctoral student*

Similar reasons are found by Wirth et al. (2005b): the most important reasons against aiming at a professorship are seen in the hierarchical structure of the university, in the low possibility to finally also get this position, and in the many steps to take for arriving there.

Nine doctoral students in my sample clearly preferred a non-academic career, thus a number similar to the 26% of doctoral students in social sciences in the study by Enders (1996). They see their future in private companies, in public administration, or as freelancers.

The remaining 15 doctoral students were undecided at the moment of the interview. Three of them tended to prefer an academic career, one rather aimed at an employment outside academia. The other eleven clearly stated that they did not know what they wanted to do at the end of their doctorate.

Overall, doctoral students' plans for the future seem to get clearer during the doctorate. While in the group of the 9 *beginners*, 6 are undecided about their future, this share is smaller in the group of those whose *project is clear* (4 out of 11) and of those in the stage of *data gathering* and *data analysis* (4 out of 17). The remaining doctoral student with unclear ideas about his future is *writing up* his dissertation – a stage that my sample covers with only two doctoral students.

That plans change or become more concrete during the doctorate is also visible in the answers to the e-mail questionnaire after the interviews. One question concerned plans for the future. In 10 out of the 21 cases, the preferences had slightly changed or become clearer between the interview and the e-mail questionnaire, while three doctoral students have put into practice their original preferences. In eight cases, the preferences remained the same.

6.5.2 The supervisors' points of view

For most of the fourteen supervisors, both an academic as well as a non-academic career are worthy of a doctoral degree holder. They allude to the fact that jobs in academia are distributed in a pyramid, and thus it is impossible that every doctoral student will stay in the academic environment. They also think that doing a doctorate should train competencies that are also applicable in other contexts:

> My aim is that people getting out from here (...) are able to organise themselves in a manifold way and to do a variety of things. It's not necessary that people automatically go into science. The aim is obviously to train people who potentially are able to do this. But if somebody says I now want to leave for three, five years, probably I will come back later, at a university of applied sciences – this would be my ideal, a big success. I think that evaluation that measures only who becomes a professor afterwards is truncated, also economically. The aim cannot be to produce offspring. It must be something that enhances reflexivity, with people who are able to apply their reflexive competence also elsewhere, for example in public administration. *Supervisor*

There are some supervisors who organise the doctorate according to their doctoral students' plans for the future – this is visible in interviews with themselves, but also with their doctoral students. However, they also observe that plans for the future can change during the process, and that then it is necessary to adapt the doctorate.

Only two supervisors in the sample see the doctorate as something that is reasonable to do only when somebody aims at an academic career. They both have their academic background in Italy, where the doctoral degree is virtually worthless outside academia. They recognise that in other contexts the doctorate is useful on the external labour market as well, but however train rather for academic careers.

When asked about the concrete situation of their doctoral students, two supervisors state that their experience shows that most of their doctoral students will go outside academia in the future. I have interviewed three doctoral students of one of these two supervisors, and they all see their future outside academia. In the other case, the only interviewed doctoral student was undecided at the moment of the interview. The two supervisors considering an academic career the main reason for doing a doctorate plus two other supervisors observe that most of their doctoral students end up in an academic career. In total, five doctoral students supervised by these four supervisors have been interviewed – three of them prefer an academic career, one would like to combine both and one clearly states that he prefers to leave the academic environment. The remaining eight supervisors report that among their doctoral students – both past and current – both types of careers are frequent. Overall, a certain congruence between supervisors' ideas and doctoral students' plans can be observed.

6.6 Short conclusions

This chapter has focussed on the personal experiences of doctoral students, on the meaning they attribute to the doctorate. There are different reasons for starting a doctorate. Experiences gathered and contacts established during undergraduate studies, the wish to go on studying, to deepen a topic and the doctorate as a degree that helps for the further career are among them, but also more emotional reasons and coincidence have an influence on the decision to start a doctorate.

Employment at a higher education institution is generally seen as a positive situation, allowing for synergies with the doctorate. Employment situations, however, vary, and so does the intensity of synergies. The biggest challenge when doing a doctorate while employed at a university seems to be the restricted availability of time.

The experience in the doctorate, including the employment situation, shapes a doctoral student's beliefs about the doctorate. To do a doctorate is generally seen as a positive experience that allows devoting much time to an interesting topic, but also leads to personal development. A doctorate is clearly seen as a learning process, where also transferable skills are acquired.

There is consensus about the fact that it is necessary to have a doctorate if one wants to pursue an academic career. About the value of the degree outside academia, however, beliefs differ. Here, supervisors are generally more positive than doctoral students. Equally, plans doctoral students make for their future differ, ranging from clearly preferring an academic career to the wish to leave the academic environment as soon as possible. Most doctoral students are found somewhere in between, some also considering the possibility of combining academic and non-academic work.

So overall, doctoral students' as well as supervisors' beliefs about the doctorate as a process and as a degree, as well as about the possibilities it gives to its holder, show a broad variety, but are generally rather positive.

After these two chapters addressing the organisational and personal dimension of the doctorate, the following chapter focuses on the academic dimension, thus is interested in how doctoral students become members of tribes and which territories they cover.

7 Belonging to tribes and covering territories: the academic and scientific dimension

So far, the organisational and personal dimension of the doctorate have been addressed, thus how the myth of the doctorate is institutionalised and interpreted by organisations and individual actors participating in the process has been looked at. This section is devoted to the academic dimension: the doctoral student's participation in the academic community, his journey through the academic tribes and territories.

A doctorate is a degree that is awarded to somebody who has shown his ability to perform independent research. Research, however, is not a lonely activity, but rather a common enterprise undertaken by a more or less large group of people[34] – an *academic tribe* (Becher and Trowler 2001) – working on similar topics, thus covering a common *academic territory*.

Usually, doctoral students live in a reality that is characterised by the institutional unit to which they are associated. Academic departments and institutes do not necessarily correspond to disciplines, and what a given discipline consists in can be interpreted differently in different academic units (Becher and Trowler 2001). There is usually no unique match of the type one discipline equals one department, and often disciplines and institutional units overlap, with different degrees of complexity (Parry et al. 1994).

Thus, the process of socialisation a doctoral student goes through involves different kinds of organisational entities and cognitive communities. While the organisational context is more or less given by the employment and enrolment situation, participation in academic tribes and exploration of territories is part of the process that is shaped by the doctoral student and his supervisor.

Disciplines, but also sub-disciplines and research fields, are characterised by the structure of the knowledge domain[35], by attitudes and cognitive styles of the academics that are part of it, and by social factors that have an influence on the construction of disciplinary knowledge. Social and epistemological aspects cannot easily be detached

[34] People in an *academic tribe* do not necessarily work in teams. Whether research is done in teams or by individuals depends on the fields. But even if research is done by individuals, they belong to an academic community with which they interact, in formal (publications, conferences) and informal ways.

[35] A discipline involves cognitive aspects such as epistemological issues regarding the substance and history of knowledge accepted and methodological issues regarding the accepted ways of gaining new knowledge (Multrus 2004). Differences between disciplines have been recognised and addressed since Snow's Rede Lecture in 1959 (Snow 1998) referring to cultural differences between the sciences and the humanities and Kuhn's distinction between "mature" fields and those in a pre-paradigmatic stage in the revolutionary process. Other classifications of disciplines have been added to the discussion (for example by Biglan (1973) or Kolb (1981). Overall, it is now recognised that there are differences among disciplines, and that these are not static but evolve over time; additionally, it is often not possible to unambiguously attribute a field to a category (Becher and Trowler 2001).

from each other, and it is often not very clear where to locate the boundaries between disciplines.

Underlining the social features of knowledge communities, Becher and Trowler (2001) propose a distinction between *convergent* and *divergent* communities, as the two extremes of a continuum. A disciplinary territory has territories adjoining to it, even overlapping it. In *convergent* communities as described by Becher and Trowler, external boundaries tend to be well defined and strongly defended. In the extreme type of convergent communities, it is not recommended to deviate from the common cultural norms and modification from outside is rejected. The disciplinary core cannot be questioned, and those who try to adopt new practices are likely to be expelled or marginalised.

The opposite of *convergent* disciplinary communities are *divergent* communities, where a common identity and sense of cohesion are lower or even lacking. Their borders are not so clearly defined and can be overstepped quite easily by members of other tribes. Their own members tend to step over to adjoining territories and to adopt ideas from other tribes. They even might identify themselves rather with other tribes, as Becher and Trowler show to be the case for geography. This can occur through publication in journals, membership in communication networks or participation at meetings and conferences. As has been shown (see chapter 3), this happens also in communication sciences.

Besides the distinction between convergent and divergent communities, Becher and Trowler also distinguish between *urban* and *rural* communities. In *urban* communities, many researchers concentrate on a subject that allows only a limited amount of questions to be asked, while *rural* communities are knowledge areas with a virtually unlimited amount of questions to ask, inhabited by relatively few researchers. *Urban* areas tend to be rather busy, with "a high level of collective activity, close competition for space and resources, and heavily used information network" (Becher and Trowler 2001: 106). The population in *urban* areas usually clusters around few research topics and looks for quick, short-range answers to the questions. Teamwork is quite frequent. Researchers in the *rural* area usually not focussed on a narrow topic, but working in a broader area of studies, dealing with problems that ask for long-range solutions.

Researchers from *urban* populations tend to attend more national and international conferences than those from the *rural* communities. In *urban* areas, the informal exchange of information, for example through pre-prints of articles, is higher than in *rural* areas, and more often restricted to a privileged network. Both *rural* and *urban* communities give importance to written communication, to publication. In *urban* areas, journal articles are more important than books, whereas for *rural* areas the inverse holds true (Becher and Trowler 2001). Whitley (1984) relates this preference for books to the

greater task uncertainty in *rural* areas, which leads to the need for more elaborated presentations and therefore to longer articles or books.

As there are different types of academic communities, of tribes, there are different types and degrees of socialisation processes doctoral students experience during their doctorates. This chapter addresses the academic dimension of the doctorate from a social and cognitive point of view – regarding both the tribes doctoral students become part of and the territories they explore.

7.1 Officially participating in the community

A doctoral student usually starts as a newcomer (Lave and Wenger 1991) in a scientific community, in a tribe. Initially, participation is rather passive. Through observation, and later on probably also collaboration, doctoral students get more and more involved in the tribe and eventually start giving their own contribution to it, participate actively in the discourse of the community and thus probably become visible also to members of their tribes with whom they are not in direct contact.

I have asked the interviewed doctoral students to give me a publication list, including also conference presentations. This list was completed through the short e-mail questionnaire sent out between a year and one and a half year after the interview, and integrated, where necessary, with data from publication lists searched on the Internet. For the following analysis, scientific output until the end of 2007 was considered.

Some numbers

30 out of the 41 doctoral students have already published a paper on a scholarly journal or presented part of their work at a conference, while 11 doctoral students have not (yet) contributed to the community in an active way, but only in a passive way – by reading literature produced by its members, and probably passively participating at some gatherings of the community. 3 of them have institutionalised their belonging to the community in another way: they are part of the Swiss Association of communication and Media Research SGKM. Thus, there are 8 doctoral students in the sample who have not (yet) institutionalised their participation or made themselves visible in the community in any way.

Out of the 41 doctoral students, 27 have at least one presentation at a national or international conference in their publication list. This is a higher number than what was found by Wirth et al. (2005b), where 41.1% of the Swiss respondents have had at least once presented at a conference. Part of the difference could probably be explained by the fact that Wirth et al. have asked to indicate active participation in conferences, while I have asked for publication lists, thus probably containing also papers that were presented by co-authors. 11 of the remaining 14 doctoral students without active conference

participation have participated passively, without presenting, to at least one national (in one case also one international) conference.

Together, the doctoral students active at conferences have made 174 presentations, thus an average of 6.44 presentations per doctoral student that actually has presentations. When considering the whole sample, the average of presentations per doctoral student is 4.24. These numbers include very different degrees of activity: the active individuals in the sample have done between 1 and 26 conference presentations, with a median of 5 presentations.

24 of the 41 doctoral students have contributions to journals or books in their publication lists, for a total of 99 publications leading to an average of 4.12 publications per doctoral student with publications, or 2.41 in the overall sample. Here, the variance is lower, the number of publications ranges between 1 and 11 publications per doctoral student, with a median of 3 presentations.

Regarding type of scientific output, papers in scientific journals and conference papers are most frequent among the doctoral students participating in the surveys by Enders (1996). Together they make up around three quarters of the whole publication activity of doctoral students. Book chapter and book publications are less frequent. In the study by Wirth et al. (2005b), the number of doctoral students having had at least one publication so far is highest for book chapters (46.4%), conference presentations (41.1%), articles in non-scientific journals (41.1%), and journal papers (39.3%). These numbers reflect the characteristics of the field: the importance of book-like publications is expressed in the high share of book chapters; the high share of articles in non-scientific journals shows its closeness to journalism.

The numbers from my study, however, rather reflect the results by Enders (1996), and are not comparable to Wirth et al.'s (2005b) results as they are constructed differently: overall, the 41 doctoral students report 273 entries in their publication lists. Conference presentations are the most frequent type (63.7%), followed by journal publications (20.2%), book chapters (13.2%) and books/monographs (2.6%).

Thus, there is an overall average output of 9.1 per doctoral student with active participation in the scientific community. When considering the whole sample, this average is at 6.66. As the doctoral students in the sample are, however, at different stages it seems interesting to consider also the years since the start of the doctorate. Together, the doctoral students in the sample account for 111 years of doctorate so far. Thus, when considering only the output during the doctorate and neglecting previous publications and conference activity (total output = 233), the average output per year decreases to 2.10, including both conference presentations and publications. This average output begins at 1.2 in the year in which the doctorate is started, and is at 2.6 for the two following years (for more details see Figure 7 on page 111).

The role of supervisors

Most supervisors see active contribution to the scientific community as something they want to push or actively support. Some supervisors report that they require their doctoral students to have at least one publication or conference presentation per year, one supervisor states that he wants every doctoral student, or at least those with a potential for an academic career, to have published three papers in peer-reviewed journals by the moment they conclude their doctorate. Again another supervisor has a clear idea about how a doctorate is constructed in terms of publications:

> I encourage them to write out things. I encourage them to develop their research in a kind of value chain, here I think in a managerial, product-oriented way. First, one does a research note, then probably a working paper, a conference submission, a journal article, a book chapter and then probably even a book, or the dissertation. *Supervisor*

There are supervisors that have annual meetings with their doctoral students in which they plan publication and conference activities. In other cases, it seems that this occurs rather ad hoc – supervisors for example send calls for papers to their doctoral students and encourage them to propose something, offering also their feedback.

The collaboration in publications raises the question of the authors that appear on a paper, as well as their order. Some doctoral student reported of situations they know where doctoral students had written publications, which then were published exclusively under the name of the supervisor. Coincidentally, I have seen that this happened to one doctoral student in the sample: I was looking for a publication he told me he had submitted, but I could find it only under his supervisor's name. All supervisors I asked about this practice, however, clearly stated that they put their names only on papers to which they have collaborated in a substantive way.

> In this, I'm very strict. There has to be a part of the doctoral student, but also a part of mine. I don't publish things that I've simply followed. I don't tolerate that one proposes to me to publish together for example results of the doctoral project or things like that, because I think that's immoral. Even if I have helped them a lot, it is my job to help for a doctorate.
>
> *Supervisor*

Overall, 24.9% of all publications and presentations found on the doctoral students' publication lists are written together with the supervisor (29.2% when considering only output after the beginning of the doctorate). This share, however, varies a lot among doctoral students, from those without any co-authorship with their supervisor to those having up to three quarters of their output written together with their supervisor.

Benefits

To expose one's ideas and results to the scientific community through publication and active conference participation entails different types of benefits, perceived both by doctoral students and supervisors.

Doctoral students who actively present and publish usually see conference presentations and publications positively. Some doctoral students with no scientific output regret that they did not yet have had the chance to do publish. This is also visible in the study by Wirth et al. (2005b): 77.8% of the Swiss respondents state that they can devote too little time to publication activities – the only other activity that is considered as receiving too little time by a higher number of doctoral students is the doctorate itself (88.5%).

Participation in conferences allows doctoral students to get in contact with senior researchers, with experts in their field. They have the chance to receive qualified feedback on their work and understand that they are part of a community working on the same topic:

> I've found this [scientific community] at the two international conferences in which I've participated. There are researchers in your panel that address things where you have a say in the matter, they know what you are talking about, you can discuss with them.
>
> *Doctoral student*

Supervisors also underline that doctoral students, especially those aiming at an academic career, have to get used to the evaluation through the scientific community, and to get used to the ways of knowledge communication that are used in a scientific community, thus mainly active participation at conferences and publication.

To submit articles to peer-reviewed journals also allows getting qualified feedback on written text. One supervisor underlines that a doctoral student also benefits from a submission when his paper is rejected: he receives a written feedback report, which he ideally discusses with his supervisor, and which helps to improve further work.

Besides evaluation and feedback through the scientific community, appearance in the scientific community is also important in order to define one's identity in the field, in order to become visible as a researcher with a distinct profile. Thus, it is also important to ensure connectivity with the field – to work on topics that are of interest in the field one wants to enter. Some supervisors see it as their task to support this profile definition.

Some doctoral students also publish parts, for example chapters, of their dissertation as independent articles and thus prepare their dissertation in constant interaction with the scientific community. Others rather seem to do this the other way round: they publish chapters of their dissertation once they have finished writing it.

Challenges

Some supervisors think that it is reasonable to ask doctoral students to publish only once they have finished their doctorate. The interviews show for example that there is no agreement on whether it is allowed to publish parts of the doctoral project before the publication of the thesis. While some supervisors think this is a good strategy, others implicitly say that it is not possible to do so[36]:

> Peer-reviewed articles presuppose that one has done research. Thus they cannot do it, if they don't have another project besides their dissertation, except if they publish from their master thesis. This means that at the moment [of the doctorate], it is not possible that many publications emerge. *Supervisor*

Other supervisors as well as some doctoral students see challenges in publication during the doctorate because the doctoral student is not yet far enough in his work. According to them, publication requires to have a complete project and enough knowledge of the field.

What however is mentioned most often as a challenge regarding publication is lack of time. Doctoral students state that they do not have much time for their dissertation, and thus want to work directly on it and not use this time again for publications. Also regarding conference participation, they report this to be the case. Some doctoral students state that mainly for lack of time they only go to conferences where they can present something, even though sometimes it would be interesting to go there only to listen. When a paper written by several authors is presented, usually only one of them is present at the conference.

Besides time constraints, there are also financial reasons that make doctoral students keep their conference participation low. The rules of funding of conference participation varies among the universities, but generally only active participation is subject to funding, and often a part of the costs has to be covered by the doctoral student.

Another difficulty individuated by a supervisor also lies in the fact that doctoral students often do not see how they could adapt their topics to calls of papers, as these rarely ever correspond exactly to the doctoral student's project.

However, it seems that the will of doctoral students to expose themselves to the scientific community can be, at least to a certain extent, influenced by the supervisors. It seems necessary to encourage doctoral students to publish and present at conferences, and also to make them aware of the benefits. One supervisor told about a strategy he uses to enhance appearances in the scientific community:

[36] In the regulations no explicit information was found regarding publication of preliminary results before publication of the dissertation.

> There is an internal pressure, a competition, in the culture of the institute to outdo each other. We publish this in our newsletter. If someone has written a paper that has received particularly positive evaluation, we mention this at the institute's aperitif. *Supervisor*

7.2 Socialisation in different types of tribes

To publish and present at conferences is a visible aspect of being part of a scientific community, of contributing to its scientific discourse. But there are also less visible aspects of this membership. Therefore, in the interviews the doctoral students were asked whether they feel like they belong to a scientific community. The answers revealed that there are often two types of scientific communities doctoral students refer to:

> There are two scientific communities I belong to. One of them [the local community] is a small scientific community, and in the other one [the international community] I feel small. *Doctoral student*

11 doctoral students in the sample do not at all feel like belonging to a scientific community. There are 3 doctoral students that feel to belong partially to a local scientific community, 3 feel like fully belonging to a scientific community, but on a local level. 6 doctoral students feel to be completely part of an international scientific community. The largest group of doctoral students, 18, feel to be part of an international community, but only to a certain extent. In several cases, they refer to an international community, but restricted to the own linguistic region. Higher publication activity generally occurs together with a stronger sense of belonging.

Doctoral students can thus feel part of academic communities at different levels. But also their active participation in these communities occurs at different levels. Figure 7 gives an overview on aggregated output data of all doctoral students in the sample that are participating in a scientific community by giving their own contribution The output is divided by the geographical range, coded as follows: *local* output contains output at conferences and publications with editors in the same linguistic regions, thus in the Italian speaking part of Switzerland and Italy for doctoral students at the University of Lugano, in the French speaking part of Switzerland and in France for doctoral students in Geneva and in the German speaking part of Switzerland for doctoral students in the other universities. Output in other German speaking countries by doctoral students in the German speaking universities is coded separately, given the importance of this linguistic area in the field of communication sciences and given the large share of German-speaking doctoral students in the sample. Contributions at the SGKM conference are coded as local for all doctoral students, and the same holds true for publications in the SGKM's journal *Studies in Communication Sciences. Other CH* output contains publications and conference presentations in other linguistic areas of Switzerland. If a doctoral student is working in a different linguistic area than the one where he originally

comes from, output in both areas is coded as *local*. *International* output refers to international conferences and journals in English language. For every year, the total output per category is normalised by dividing it by the number of doctoral students in the sample that are in or already have passed this year.

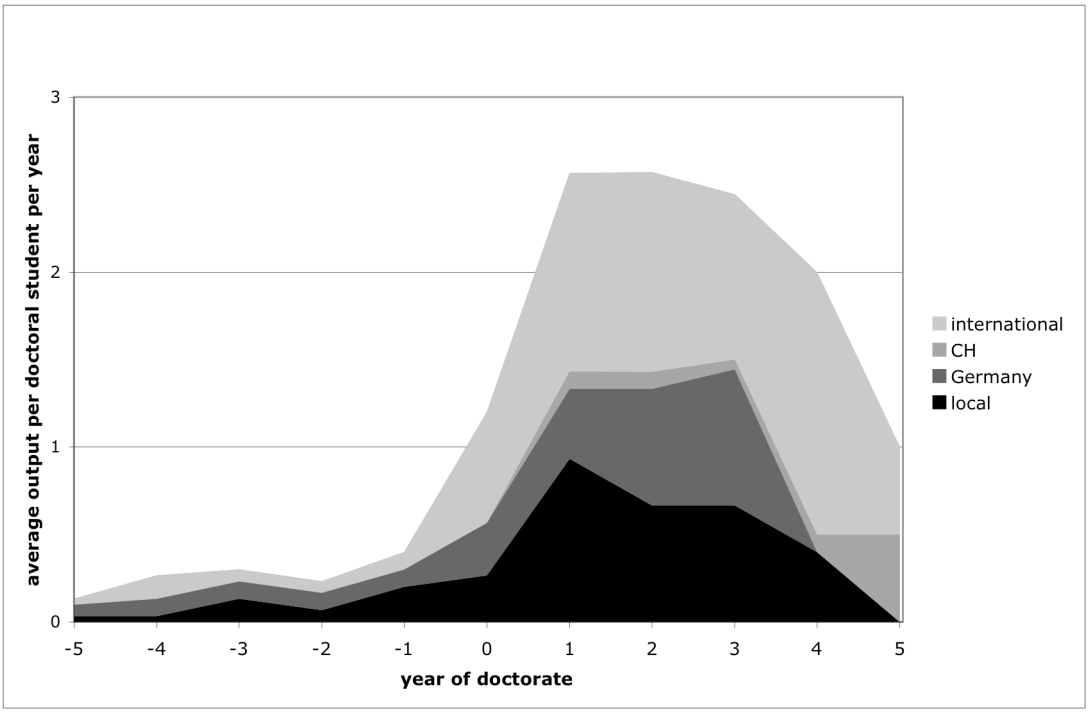

Figure 7: Geographical range of output of doctoral students with output (N=30) [37].

The study by Wirth et al. (2005b) shows that 71.4% of all doctoral students consider an international orientation, outside the own linguistic area, an important factor for their own scientific career. In my sample, most of the doctoral students with publication and conference activity use, at least to a certain extent, English as publication language.

Overall, 16 doctoral students in the sample have the majority of their publications and presentations written in English. Some of them also have some publications in their local language and other official Swiss languages. In the other 14 cases of doctoral students with scientific output, the local language is used as main publication and presentation language. 10 doctoral students in this group, however, also have at least one output in English.

[37] The decline in years four and five after the beginning of the doctorate (thus the fifth and sixth year of the doctorate) visible in this figure could be explained by different reasons. On the one hand, one could think that doctoral students in their last year(s) of the doctorate have less time for output other than their thesis, because they are busy with writing the thesis. On the other hand, one could also suggest that doctoral students who do not finish their doctorate within three or four years, and thus appear in this last part of the figure, are generally less productive than those finishing earlier.

Thus, English is an important language for scientific outputs of doctoral students in communication in Switzerland, especially in the German and the Italian speaking part. But what about the doctoral thesis? Table 13 displays the relationship between the internationality in the scientific output and the language in which the doctoral dissertation is written.

Scientific output:	**Dissertation in local language**	**Dissertation in English**
international	2	9
other CH	1	
Germany/Austria	7	
local	8	2
doctoral students without scientific output	8	1
Total	***26***	***12***

Table 13: Language of dissertation vs. internationality of other output (N=38) [38]

Thus, most doctoral students who have the largest part of their output on an international, English language level do or intend to write their dissertation in English, while doctoral students with their main output in Germany or Austria intend to write their dissertation in the local language – which in all these cases is German[39]. Only one of the doctoral students without scientific output plans writing his dissertation in English.

Overall, the local language seems to play a more important role in the German and the French language universities than in the Italian speaking part of Switzerland. This is in line with what our analysis on the field of communication sciences in Switzerland has shown (see chapter 3). Among doctoral students, however, English language publications seem to be more frequent in all linguistic regions than among the professors that were subject of this previous study.

So there are different types of tribes to whom doctoral students get socialised. Some doctoral students integrate into tribes of their own linguistic community, while others are more internationally oriented. What, however, does not seem to happen, is the integration into a tribe of another linguistic region of Switzerland than the one of the university of the doctorate. Integration is either in the same linguistic region, or on the international level in the English speaking community.

[38] 3 doctoral students are not included in this figure: two of them are undecided about the language in which they will write their doctorate, one will write it in his mother tongue which does not correspond to the local language.

[39] Doctoral students intending to write their dissertation in English are enrolled at two universities: in Lugano and St. Gallen. The three doctoral students in the sample that are enrolled in Geneva intend to write in the local language. They constitute only a small sample, but a look at the SGKM census also confirms this: the titles of all but one dissertation projects from the French speaking part of Switzerland are indicated in French (for more information and a discussion see 9.3.1).

About one fourth of the interviewed doctoral students, however, is not at (yet) visible in a tribe through scientific output. Out of those contributing actively to the tribe's discourse, some doctoral students seem to be rather on a lonely journey, while others are exploring the territories together with other tribe members, and thus also get visible as part of a sub-group in the tribe. But which are the territories they explore? This question is addressed in the following section.

7.3 A wide range of territories

Communication sciences are a broad field, and thus communication scholars inhabit a rather wide range of territories, and form different tribes. In this analysis of the doctorate in the field, it is thus interesting to understand why doctoral students engage in a specific territory, which these territories are, and whether they correspond to the institutions' or supervisors' territories. Additionally, this section also addresses the question of methodology: thus which are the methods doctoral students apply in order to discover the territory?

7.3.1 Different reasons for addressing a topic

Several doctoral students as well as supervisors underline that a dissertation topic should be at least to some extent related to the supervisor's areas of research and/or teaching. There seem to be, however, also other points influencing on the selection of the dissertation topic, and often several reasons converge.

In the study by Wirth et al. (2005b), 10 of the 57 respondents from Switzerland state that the topic was proposed to them by the professor, in again 10 cases it is related to the research project the doctoral student is employed on. 86.8% (46) of the Swiss doctoral students in this study state that they have searched their topic themselves.

In my sample, in 11 cases, the topic of the dissertation is influenced by a project the doctoral student works on: it is directly related to the project, or the project gave the idea to work on this topic. This is for example the case for a doctoral student who applies the theoretical framework of a project he works on to another linguistic region in Switzerland and in another type of media products.

Nearly one fourth of the doctoral students work on a topic they have discovered during their undergraduate studies. Two of them already wrote their thesis in this same topic area and now refine it, go more into detail for the doctorate. Others have addressed the topic of interest during their final exams. Some doctoral students report that they have discovered the topic they are now working on in a course taken during undergraduate studies – most often a seminar held by an external teacher telling about his own research or professional experience.

Again a fourth of the doctoral students work on a topic directly related to current or previous professional experience. There is for example a doctoral student in the sample who has established his own consulting company and who is now investigating the topic he usually consults on from a more scientific point of view, also in order to enhance his legitimation. Others work on topics they have discovered during internships or short working experiences between their first degree and the doctorate.

For another fourth of the doctoral students, the topic is related to personal experience. There is for example a doctoral student working on how media report of a conflict in his home country or another one who states that he does not really identify with the institute he works at and who decided to write on identification in organisations.

Seven doctoral students report that there have been major changes in their topic during their doctorate, in many other cases there have been small adaptations, for example in the focus of the topic. There seem to be mainly two reasons for which a topic change occurs, and these two reasons point in opposite directions: In some cases, the first topic was more or less imposed by the supervisor or chosen in order to be strongly connected to the supervisor's topics, and then later on the doctoral student decided to change topic – and, if the topic was imposed, also supervisor – in order to work on a topic that really interests him and which probably is no longer so close to the institute's or supervisor's topic. In other cases, the topic was adapted or changed completely in order to make it more compatible with the institute's profile or with a project the doctoral student is working on.

7.3.2 Different methodological approaches

For exploring a territory, tools are needed: methodological approaches. In most cases, doctoral students choose their methodological approach according to their topic. There are, however, also a few doctoral students who state that they wanted to use specific methods and choose the topic accordingly. Methodological issues are a point that is often discussed with the supervisor, but also with other senior researchers and peers.

These approaches develop and can change during the doctorate. At the moment of the interview, for 9 doctoral students – 7 of them *beginners* – it was not yet clear how they would proceed methodologically. The other 32 doctoral students use different types of methodologies.

11 doctoral students declare to use more than one methodological instrument simultaneously. They combine for example documents analysis with interviews, interviews with questionnaires or case studies with experiments.

15 doctoral students use methods that directly involve people. 12 of them use interviews, varying in their degree of structure. 4 doctoral students use questionnaires, online or in

paper-pencil versions. 3 analyse interactions they register, for example between medical doctors and their patients or between students. One doctoral student works with focus groups, one with experiments and one asks participants to fill in a diary.

16 doctoral students in the sample analyse different types of other material. These include documentations of organisations such as campaigns, press releases, annual or business reports, but mostly they consist in media products: thus people analyse newspapers, radio programmes, television news or soaps. They use different types of content analysis, qualitatively and quantitatively.

2 doctoral students, both closely related to business studies, use simulation as method for their doctorate, one doctoral student working in a computer systems environment intends to propose a model, another doctoral student working in a similar field plans to develop a language, a tool. One doctoral student with strong connections to sociology does a purely theoretical work.

7.3.3 Covered territories and their overlap with the institutions' topics

A look at the titles or working titles of the doctoral student's dissertation projects shows the wide range of territories that are covered. This is also reflected in the fields of study to which they attribute their topics (see Figure 4 on page 55), with no field having more than one fourth of the doctoral students working on it. *Organisational communication, mass communication* and *political communication* are the fields that are mentioned most often.

A look at the journals in which doctoral students publish and at the conferences where they have presentations allows to more clearly describe the tribes doctoral students are part of and the territories they cover.

Out of the 30 doctoral students with scientific output, 22 have journal papers in their publication list. The 55 journal publications are, however, divided among 38 different journals. There are only 3 journals where more than one doctoral student has a publication: *Medienwissenschaft Schweiz*, the former SGKM journal, with one publication by a doctoral student in Bern and two by a doctoral student in Lugano, *MedienWirtschaft* with 4 publications by 3 doctoral students from Zurich, and *Studies in communication Sciences* with 10 publications, one of them by a doctoral student from St. Gallen, 3 by one doctoral student in Lugano and the remaining 6 by 6 different doctoral students again from Lugano. This is not surprising, as *Studies in communication Sciences* is edited by the Faculty of Communication sciences at the university of Lugano. In 2007, this journal merged with *Medienwissenschaft Schweiz*, and is now edited jointly by the SGKM and the faculty in Lugano. Overall, doctoral students publish both in general communication journals as well as in more specialised ones.

A similar picture is visible when looking at the 174 presentations held at 114 different conferences, 14 of them appearing in the lists of more than one doctoral student (some of them, however, due to jointly written conference papers). Here, too, most conferences attended by the highest number of different doctoral students are general communication conferences. At the top, there is the SGKM annual conference, where – in different years – 6 doctoral students in the sample had a presentation, all of them from a different university, followed by the conference of the German association in the field, the DGPuK, where 5 doctoral students (1 from Fribourg, 1 from Lucerne, and 3 from Zurich) presented, and the International communication Association's conference with 4 doctoral students, one from Fribourg and three from Zurich, one of them having had two presentations. Most mentioned among the specialised conferences are the conferences of the DGPuK's subdivisions.

When looking at the scientific output, clusters can be identified. Some clusters seem to be more local, defined by the institutes' or chairs' areas of research, for example in the areas of media economics or health communication, while others are covered at different places. They come more visible when including also the titles or working titles of the doctoral projects, as this allows including also doctoral students that are not (yet) producing other scientific output.

There is a group of three doctoral students at one institute in Lugano, which is primarily publishing in the broader area of business studies – the area in which also the supervisors of these doctoral students publish. This area is also shared by a doctoral student from Fribourg, whose supervisor is active in this area, and one from Lucerne, and it serves as a background for all doctoral students in St. Gallen.

Another cluster is formed by six doctoral students working in the area of technology, two of them from the university of St. Gallen, four from two institutes in Lugano. Also in this case the topics correspond to the institutes' topics.

Political communication or communication of actors in the area of politics is a topic that is addressed by doctoral students in Bern, Zurich and Lugano. A general interest in mass media, including the producers' and the users' perspectives, can be identified among the interviewed doctoral students from Geneva, Basel, Lugano and Zurich

Thus, the topics addressed by the doctoral students more or less reflect the declared research topics of the individual communication units (see Figure 1 on page 41): a general interest in mass media covered by all institutes, a focus on political communication in Bern and Zurich (to which the results from the interviews with doctoral students add Lugano), a focus on health communication in Lugano, interest in technology in Lugano and St. Gallen, The more business oriented field is covered in Lugano and St. Gallen, but there are also doctoral students in Lucerne and Fribourg working in this area – something that is not visible in the previous analysis of the field.

7.4 Short conclusions: reflecting the field's cognitive and social structure

This chapter has addressed the academic dimension of the doctorate, thus the doctoral students' participation in the scientific community as well as the topics they cover and methods they use.

The intensity and type of participation of doctoral students in the academic community varies. Overall, three out of four doctoral students in the sample are active participants in a scientific community, most often through presentations at conferences or publications in journals.

Active participation in the scientific community is seen positively both by doctoral students and the supervisors. Some challenges and reservations, however, also emerge, for example regarding the question whether a doctoral student is allowed to publish preliminary results of his doctorate before finishing it or not.

Overall, the presented results confirm that communication sciences are a rather divergent community, with not so clear boundaries and the possibility to overstep them – as is for example done by doctoral students combining different fields and thus belonging to different scientific communities. When looking at the tribes to which doctoral students socialise and at the territories in which they move, it comes clear that the doctorate reflects the field's social as well as cognitive structure.

8 Personal relationships with seniors and peers

After the organisational, personal and academic dimension, this last section of part C describing the doctorate in Swiss communication sciences looks at the interpersonal dimension: at relationships doctoral students have with senior researchers – of whom the supervisor plays a particular role in the process – and with peers. Learning during a doctorate often occurs in formal and informal interaction (Campbell 2003), and both seniors and peers provide support during the process. Contacts with them have an influence on the doctoral experience, they are a central element of the socialisation process (Gardner 2006; Nettles and Millett 2006).

8.1 Supervision

Research supervision is "at the heart of the doctoral process" (Burgess 1994: 6, Brown and Atkins 1988). It is often through the supervisors that doctoral students get in contact with the scientific community – they therefore also act as gatekeepers and, ideally, facilitators. Parry (2007) shows that especially in fields of the humanities, where the supervisor is the main, and sometimes only, contact point to the discipline, his role is a central element allowing the doctoral student to learn how to behave inside the field, how to get recognition and credibility, and how to make contacts to other researchers in the field.

In some countries, the supervision relationship is institutionalised through a contract. In France for example, the contract is signed by the doctoral student, the supervisor, the director of the *école doctorale* and the director of the research institute where the doctorate is done. It states the responsibilities of all these involved actors during the process of the doctorate (Moes 2003). Other countries where contractual relationships are implemented are Norway, Sweden, the Netherlands and Italy (Broch and Hyllseth 2004; de Weert 2004; Moscati 2004; Mähler 2004).

The supervision relationship is often characterised by unequally distributed forces, and often supervisors also act as evaluators of the final product of the doctoral process, the dissertation. Supervisors are usually not trained to their role; they learn to be supervisors by doing it, or by asking their colleagues for advice ({{; 417 Hill,T. 1994; 311 549 Davis,Gordon B. 2004; 550 Youngman,M. 1994; 551 Burgess,R.G. 1994; }}). As noted by Hill (1994), not all supervisors have ever completed a research degree which allows them referring to their own experience. Regarding the interviewed sample, this is the case for three supervisors – they all have their academic background in Italy, where the doctorate has been introduced only in the 1980ies (see Germano 2001; Moscati 2004).

Supervision can be done in different ways, and disciplinary disciplines are often referred to (for example in Parry 2007). Berning and Falk (2005) individuate a continuum on

which they place the disciplinary groupings, ranging from project oriented to supervisor centred. On the project oriented extreme, where other scientists and other doctoral students play the most important role in supervision and where supervision is more frequent and intense, they locate engineering, followed by science disciplines, economics, social sciences, law and the humanities on the supervisor centred extreme, where the official supervisor plays the most important role in supervision. In these fields, the relationship between supervisor and doctoral student is seen as a crucial element for the doctoral process and its completion (Hill et al. 1994).

As the internal and external constraints for supervision and monitoring of the doctoral process, and thus also the organisation of the doctorate varies, also the strategies supervisors apply vary. Supervision can include different roles such as being a driving force of the project, a critical friend, an advisor also in aspects not related directly to the doctorate, a rescuer and a master of an apprentice (Burgess et al. 1994).

The following paragraphs look at the supervision relationship in the concrete case at hand, by presenting characteristics of the supervisors, addressing frequency and content of supervision meetings and finally showing what, according to the interviewed doctoral students and supervisors, supervision ideally would be like.

8.1.1 Who are the supervisors?

Most doctoral regulations analysed contain some information on the supervisor. How the match between supervisor and doctoral student is made differs. In Lugano and Geneva, the regulation states that the supervisor is designed by a "collège" or "collegio" of professors (from the interviews and informal talks with professors, however, it results that in practice, with only very few exceptions, the relationship is proposed by the supervisor, thus established before the committee decides). In St. Gallen and Fribourg it's the supervisor's task to propose or recommend a doctoral candidate to a responsible body. In Lucerne and Bern the consensus of a professor is necessary for application, meaning that a professor must agree to supervise the thesis. Basel's regulation foresees that supervisor and doctoral student jointly decide about the topic; if a dissertation is not completed within four years, the supervisor has the right to withdraw from the agreement. Basel's regulation is the only one that also explicitly foresees the possibility to hand in a dissertation that was not supervised by a member of the faculty.

Together, the 14 professors interviewed for this study supervise 79 doctoral students. The number of doctoral students per supervisor varies considerably: it ranges between 2 and 12, with half of the supervisors supervising two or four doctoral students, the other half five and more.

These numbers include those doctoral students the supervisors are officially responsible for and do not include doctoral students for whom supervisors act as informal or

additional supervisors or external experts. Two supervisors underlined that in addition to these doctoral students, there are others that rely on them for their thesis, but in an informal way.

52 of the 79 doctoral students supervised by the professors in the sample are employed at the universities, 27 are external doctoral students, not employed by the universities. Most supervisors are responsible for more internal than external doctoral students, and there are three supervisors in the sample with no external doctoral students.

Communication sciences are a rather young field of study, and there are many professors active in the field that, themselves, did not study or write their doctoral dissertation in this field (see Probst and Lepori 2007; Lepori and Probst 2009). Five of the 14 interviewed professors have their undergraduate and/or doctoral background in the field – two in *Publizistikwissenschaft*, two in communication management and one has written his doctoral thesis on television. The others have their disciplinary backgrounds in social sciences, philosophy, economics, engineering, psychology and history.

When asked whether they feel as part of communication sciences, however, most of the interviewed professors answer affirmatively – nine of them with a clear yes. One professor rather feels like being part of a sub-community, one states to feel part of communication sciences only partially, another professor states to do things in this field, but to be more linked to the original disciplinary background. One professor states that for him it's too confining to define himself as part of communication sciences, that his interest is rather in the analysis of social phenomena; another professor states to be more attracted by topics and problems than by discourses, and thus to have worked in several fields. Overall, however, most professors state to belong, at least partially, to this field.

8.1.2 Frequency of supervision meetings: from never to weekly

According to Berning and Falk's continuum, supervision is more frequent and intense in project-oriented fields than in supervisor centred areas. There are also national differences influenced by the organisational structure of the doctorate. While in some countries, the supervision relationship is regulated by a contract, in Germany for example, doctoral students do not even necessarily need to formally enrol for the doctorate, and until the 1990s there was very little contact with the university and the supervisor (Huber 1986; Gellert 1993). This has changed with the establishment of the *Graduiertenkollegs* in the 1990s, but still most doctoral students are not enrolled in such a graduate school and it is still possible to prepare a doctoral thesis without being enrolled at a university (Hüfner 2004). Thus, the intensity of supervision varies considerably among fields and countries.

My interviews also show a striking range of variety in the frequency of supervision meetings: there are doctoral students reporting that they meet their supervisors at least once a week, while others do not have individual meetings with their supervisor at all.

Four doctoral students only meet their supervisor during events of a doctoral school, or in doctoral colloquia. This, however, does not necessarily mean that the supervisor is considered not fulfilling his role:

> I don't have meetings for my doctorate, I do not at all talk to him about my topic, but he is very aware of what it means to be a doctoral student. With the activities of the doctoral school, he forms the framework. With the people he invites, he thinks generally for all doctoral students, this includes me. He forms the framework, but he does not fill it in.
>
> *Doctoral student*

The frequency of individual supervision meetings varies between once every one or two weeks (sometimes even more) and once or twice per year. It is generally higher for doctoral students that are employed by a higher education institution than for those who are not. The interviewed supervisors also confirm this. They equally report that informal meetings and meetings not directly aimed at the doctorate take place when doctoral students work physically in the same place and on projects and teachings together with the supervisor – meetings then are rather informal, and occur during the daily practice of the institute. Informal contacts help monitoring the process of the doctorate.

Some supervisors institutionalise supervision meetings by fixing their frequency. In one case, doctoral students consider this rather a farce, an answer of the supervisor to reproaches that he does not care about his doctoral students. It is interesting that this supervisor himself also considers the actual situation of supervision suboptimal; he sees this institutionalisation of two group and two individual supervision meetings as a less-than-ideal solution, which he wished to improve if there were enough time and resources for doing so.

More often, however, from what doctoral students report, it seems that supervision meetings are not institutionalised and it's the doctoral student's responsibility to contact the supervisor and ask for a meeting:

> I feel guided in the sense that if I want to have a feedback, I can have it. But it's me who has to look for it. If I would not be working on my doctorate by myself, I don't know how often he would come to talk to me. *Doctoral student*

This is confirmed also by some of the supervisors, who state that they are available to give feedback, for example on texts or ideas, but it's the doctoral student to decide when he wishes to receive feedback on his work. Some doctoral students like this situation; they think that it's their own task to move forwards. Others would like to have some

more pressure, deadlines and guidance. There are also supervisors who make clear plans of supervision meetings and insist on a high frequency and regularity.

It seems that the necessary amount and frequency of supervision meetings is conceived differently both within the group of doctoral students and within the group of supervisors. While some doctoral students think it's more than enough to have two supervision meetings per year, another doctoral student complained that his supervisor never has time for him – they meet every three weeks.

Supervision usually takes place in personal meetings in presence. There are, however, also two other modalities reported by doctoral students and supervisors. E-mail exchange seems to be rather frequent for short questions, or when geographical distances are high. One supervisor reports of supervising a doctoral student who is staying abroad for a longer period; they regularly meet through videoconferences.

Thus, conceptions of the role of a supervisor, of the responsibility for arranging supervision meetings and of the ideal frequency and intensity of supervision vary. This is also confirmed by the CEST (2007) study: rather than high frequency, continuity and availability of the supervisor are seen as important.

8.1.3 What supervision consists of

Frequency of supervision varies, and so does content. The interviews reflect that there are different beliefs about the role of the supervisor and supervision for the doctoral process. They are addressed in the following paragraphs.

The supervisor's role in the process

For most doctoral students, the supervisor plays a crucial role in the process of the doctorate. But ideas about this role vary. Some doctoral students consider their dissertation their own project, which they develop by themselves and where they will get at a point where they are the only experts in the very specific field, and thus it is difficult to get qualified feedback.

> When doing a doctorate, you realise that as soon as you focalize your interests, you depart from your supervisor's knowledge. We all work on topics that are so much specialized. (...) It's more support than direction, ultimately you cut your own path. *Doctoral student*

But even though they might become more expert in a field than their supervisor, they consider it useful to get feedback from their supervisor:

> I would say I use him as internal referee. If there's something he stumbles across, it's very likely that somebody else would stumble across it as well. *Doctoral student*

Also some supervisors underline that the dissertation is the doctoral student's work, and not theirs, as these two examples show:

> I have to be dignified as a supervisor. But it's the student himself who has to be competent as a researcher. *Supervisor*

> I do supervision, everything, but then the creativity, the energy – it has to be the candidate to do the dissertation. It's not that he should write my dissertation. *Supervisor*

There are also doctoral students that consider themselves rather independent – in one extreme case, the doctoral student sees the supervisor mainly as a formal element of the doctoral process which is necessary for the procedure; the doctoral student thus considers it his own task to do the dissertation independently. For this doctoral student, the supervisor puts the guardrails, but he does not influence directly on the dissertation.

Supervision as guidance

The supervisor's role in guiding doctoral students is perceived in different ways by the supervisors. From the interviews, it seems that there is a broad variety of standpoints and applied strategies, ranging from the supervisor who clearly sees it as the doctoral student's responsibility to design the doctoral process, and who is just available for feedback on request, to the supervisor who seems to guide his doctoral students step by step, with a very close planning and monitoring of the process, consisting in regular – up to weekly – meetings scheduled by the supervisor. Most cases, however, seem to be somewhere in between, with differing amounts of formal and informal meetings and differing degrees of direct collaboration on publications and other projects.

From the point of view of the doctoral students, it seems that an important aspect of this guiding role of the supervisor consists in asking the right questions and being available for discussions. This is also referred to by a supervisor who sees it as his task to support the doctoral student in thinking through his topic, in finding out what he wants, to define corner stones, methods. A doctoral student tells about his experiences in meetings with a professor during a stay abroad:

> He made me talk, he made me tell him how it works in Switzerland, the media situation; he did not know anything about it. I don't know whether it was because he was very good at making topics emerge (...) From time to time he suggested literature, we had meetings every week, of two or three hours, I was really guided, we talked about literature. When talking with him, the topics that made the basis of my doctorate emerged. It was not that he told me how to do it, but he pointed me to some topics, and automatically the ideas emerged.
>
> *Doctoral student*

Some supervisors also state that they guide their doctoral student in their choice of the topic in order to make sure the topic suits their personal future plans. This does not only

concern whether they wish to stay in academia or rather pursue a non-academic career, but also, if they aim at an academic career or however a career in research, which is the specific field they want to be connected to – for example, whether one rather wants to enter a more sociologically oriented communication community, or is rather directed towards political sciences. This seems to be particularly important in a multidisciplinary field as communication.

Gatekeeper to the scientific community

There are supervisors that accept doctoral students working on topics that are not directly related to their own areas of expertise. They accept supervising them usually because they are interested in the topic area. Some of them report that in these cases, they try to find at least one external supervisor or close contact person who is expert in the area, and with whom the doctoral student can work intensively, be it through a stay at this person's institute or through regular contacts.

But also when the doctoral students work in areas that are closely related to their supervisor's fields, some supervisors explicitly state that to put them in contact with other experts in the field is necessary:

> I establish a contact between [the doctoral students] and excellent researchers. For example the assistant I've just employed, I've directly sent her to [a place abroad], to the best expert in the field, there she could work with him for three months. They should learn from others, not only from me. *Supervisor*

One supervisor underlined that with the doctorate, the responsibility for evaluation is no longer mostly with the institution, but it's the scientific community that evaluates. Thus, it is necessary to bring doctoral students in contact with this community, and to make sure they work on a topic that is of interest for the community. To ensure connectivity of the doctoral student's work with the scientific field is mentioned as an important task by some supervisors.

Setting the framework

A doctoral student who has been working in private companies before doing his doctorate says that his supervisor's role is mainly to set the framework for his doctorate, to give it a scientific touch. Another doctoral student reports that his supervisor sets the framework by organising doctoral colloquia and possibilities of discussion with other scholars in the field.

Also supervision meetings are part of this process of setting the framework. There are different types of meetings. Often, doctoral students send texts (chapters of the dissertation, papers for publication, etc.) to the supervisor before the meeting, and then get feedback on the structure and/or the content and input for further work. Most

supervisors also report that they do this type of supervision. When no texts are available, for example in the case of *beginners*, supervision meetings are used to discuss ideas and readings. Often, supervisors give inputs about literature to read, which is appreciated by doctoral students.

Some doctoral students report that their supervision meetings do not regard much the content of their doctorate, but are rather about organisational aspects, for example about how to find an external referee or how to get access to interview partners.

One doctoral student said that the main role of his supervisor is to make sure he proceeds – to show which are the next steps, rather than to discuss the content. This role of process monitoring is also addressed by a supervisor telling that he makes sure that the time schedule is respected:

> I have registered the time schedules in my own diary, with the detailed planning of projects and publications. That's project management, that's how it works in every organisation.
>
> *Supervisor*

There is one doctoral student who reported about a true apprenticeship situation. In this case, supervision is a continuous, ongoing process that is not restricted to specific meetings – corresponding to the *bottega* model mentioned by supervisors (see 5.2.2). The doctoral student learns through direct collaboration in research, but also in teaching, as this example shows:

> There have been some lectures that I've taught, from the beginning to the end. But usually it was [my supervisor]. The way in which I learned was that [my supervisor] started talking, and then at certain moments said "now you continue", and more and more I took the floor. Thus without being prepared, well, somehow I was prepared, I knew the whole course, I talked. This helped, I've learned to teach in a natural way. *Doctoral student*

Individual differences

In line with Burgess' (1994) findings that supervision requires flexibility and adaptation to different students and different stages in the doctoral process and with Campbell's (2003) results showing that good supervision reflects individual differences and circumstances, some supervisors underline that the type of supervision that is appropriate depends on the candidate's characteristics.

> Every doctoral student is different, (...) you have to understand the type of person you have in front of you. I think that, individual by individual, we have to understand which is the road to autonomy. For one it's to leave him much liberty and give some paternal advice from time to time. For somebody however it's tearing him a little, because he is undecided, unconfident, too much confused. I don't see one single way. They are really very very very specific.
>
> *Supervisor*

Challenges in supervision

This same supervisor, however, fears that not all of his colleagues equally conceive it as their tasks to understand which is, for every single doctoral student, the best road to autonomy:

> Often, I've seen cases where (...) the supervisor seemed to think that he had found an adjunct, but that's not the point, not at all. (...) What the institution requires us is to put some energy, sometimes more, sometimes less, (...) in order to make sure that a person becomes able to do research autonomously. We are not producing out adjunct for the next years. (...) I fear that sometimes there are misunderstandings about this among the academics. (...) It's the institution that has invested on him so that he becomes autonomous. It's not you, [supervisor], who has invested to make him become your adjunct. *Supervisor*

Most, but not all doctoral students report positively about their supervision experiences. Most often, negative reports concern the fact that supervision is nearly inexistent, be it because the supervisor is not organised, not aware of the need for supervision, not enough involved in the topic or simply does not have enough time. In several cases, supervision is restricted to colloquia in which other people participate as well, thus there is no individual relationship with the supervisor. That availability of the supervisor is important has also been shown by Gardner (2006).

One doctoral student even has fallen out with his supervisor. At the moment of the interview, he was thinking about abandoning the doctorate. He asked for a change of supervisor, but the faculty did not allow it, for (according to the doctoral student) "internal political reasons".

Another doctoral student is in a rather challenging situation in that he is supervised by three different supervisors. Generally, he considers this a positive situation, but he also reports that it does not really work: it seems difficult to balance their differing ideas. But also very practical issues emerge, for example the challenge to match their agendas in order to define an appointment with all of them.

8.1.4 The ideal supervisor: many requirements

According to Burgess (1994), doctoral students see their supervisor as driving force in their projects. They expect guidance for literature, in research design, methodology and in finding the focus of their research project.

Enders and Bornmann (2001) have conducted a retrospective study, asking doctoral degree holders about their contentment up to 20 years after the achievement of the degree. They identified several factors that seem to have an influence on contentment: doctoral degree holders who would have wanted to have more support from their supervisor, who have had moments of interruptions in their process and/or who have

achieved rather modest final degree tend to be less satisfied, in retrospect, with the supervision they received.

Rose (2003) proposes a tool that allows to assess characteristics doctoral students request their mentors (she does not use the term supervisor) to have, and thus should allow for better matching students and mentors. This tool, the *Ideal Mentor Scale*, is constructed based on questionnaires asking doctoral students to rate the importance of items describing characteristics of a mentor. The results show that preferences differ a lot. There are only two universal ideal characteristics: from the point of view of doctoral students, an ideal mentor should "communicate openly, clearly and effectively" and "provide honest feedback" (Rose 2003: 479). Other characteristics found in this study regard integrity (thus that a mentor should believe in the student), guidance (mainly regarding the research project) and the personal relationship. Bell-Ellison and Dedrick (2008) replicated the study and found some inconsistency in the factors. They also show that female and male doctoral students are very similar in what they expect a mentor to be like.

I have asked doctoral students in the interviews to describe the ideal supervisor, the ideal supervision situation. Most doctoral students are generally happy with their supervisor – this is also confirmed by other studies in the similar and other contexts (see for example Enders and Bornmann 2001; Gerhardt et al. 2005; Wirth et al. 2005b). But most doctoral students had also several ideas about how supervision ideally should be.

The answers from doctoral students in my sample concern several aspects: personal characteristics of the supervisor, his position towards the topic and research in general, his level of knowledge and intelligence, his integration in a scientific context and his engagement to introduce the doctoral student to this context, or his position in academia. Besides ideal characteristics of the supervisor, doctoral students also describe aspects of an ideal supervision process. The answers from the doctoral students allow to look at their beliefs about the doctorate, at the cultural constructs that stand behind.

Personal aspects of the relationship

According to many of the interviewed doctoral students, an ideal supervisor is a person whom the doctoral student trusts. The relationship between doctoral student and supervisor is ideally characterised by confidence, and the supervisor is a person to whom the doctoral student likes to talk, he experiences this as pleasant – the relationship factor individuated by Rose (2003). The ideal supervisor is generally supportive, and he does not exploit his doctoral students. He rather gives them the feeling that they, their topic and their work are appreciated – what Rose (2003) refers to as integrity. This shows that for many doctoral students, the personal aspect of the supervision relationship is important. Rather than mentioning factors enhancing the quality of their doctorate or the

content of their training, they refer to the quality of the personal relationship to the supervisor.

> He is a person I can approach when I have a problem. He is somebody who puts fuel in my motor, he makes me discover new things, he reassures me when I think I cannot make it, he gives confidence. (...) it's a parent, a godfather. *Doctoral student*

Doctoral students also describe an ideal supervisor as somebody who has a great knowledge and intelligence:

> An ideal supervisor is intellectually brilliant, in that he makes you feel stupid at the right moment to push you to go beyond. *Doctoral student*

Process monitoring

For many doctoral students, an ideal supervisor is open for new ideas, leaves room for creativity, but puts also the guardrails. He finds a sound balance between freedom and guidance, which, however, is not always easy:

> [The ideal supervisor] would be a person that gives you much autonomy, but at the same time watches that you do not wander off. The problem is that in research it's difficult to understand when somebody is wandering off. *Doctoral student*

A supervisor thus ideally reacts when the doctoral student gets on the wrong track; he is attentive to the process. Here, cognitive aspects of the supervisor's role are visible. He guides the process also by support for structuring the work plan, and thus helps to avoid errors. He is strict, makes sure that deadlines are respected, but is also kind-hearted and understands that sometimes there are periods where it is difficult to go on with the doctorate. He supervises without discouraging, but he also requires a lot from his doctoral students, as this statement by an external doctoral student experiencing a lack of supervision shows:

> He should be demanding, so that I can improve. He should not simply say "everything is ok". *Doctoral student*

Interest in the research topic and the doctoral student

An ideal supervisor is interested in the doctoral student's research topic, but also in the doctoral student himself – he is personally interested in the future of the doctoral student.

> If I was a supervisor, I would try to have a much more enthusiastic relationship, more sharing of objectives (...). One could create much affiliation much self-confidence. Probably you would feel a little less free, autonomous, but on the other hand you would be more self-confident, you would have more discussions with your supervisor, more motivation. *Doctoral student*

He is passionate about research, and shares this passion with his doctoral students by making them participate in his research projects. Many doctoral students say that ideally a doctorate is located in a project for which the supervisor is responsible. This automatically leads to a closer supervision, the supervisor is personally interested in the outcome, and there is a strict time schedule to follow. When the supervisor works on similar topics as the doctoral student, it is also possible to have fruitful in-depth discussions.

A gatekeeper's role

Ideally, not only the supervisor, but also the whole team works on similar topics, thus fruitful exchange is possible. What is mentioned often is that an ideal supervisor is also well inserted in a scientific community, that he has a strong network and that he introduces the doctoral student to this community and network. Besides providing direct contacts to experts in the field, he also sends doctoral students to conferences, pushes them to publish and/or makes them collaborate in his own publications, advises them of what is going on in the field. The supervisor's role as a gatekeeper is addressed here. To write a dissertation should not only mean to produce a text, but to get the right start for a future in this environment. This includes also training doctoral students how to behave in the scientific community.

An ideal supervisor makes his network available to his doctoral students not only during, but also after the doctorate, as this supervisor puts it:

> A good supervisor cares for his "child". Even when the doctorate is done, he makes sure he gets a position somewhere. It's known how important the phone call to the colleague is.
>
> *Supervisor*

This statement can also be seen as an interesting indicator of the conception of the supervisor's role by the supervisor himself.

Providing a fruitful environment

A doctoral student mentioned that ideally a supervisor also provides a fruitful academic atmosphere within the institute, which is open for profound scientific disputation – also with other research groups. This exchange of ideas is seen as more fruitful when the supervisor and all of his collaborators work on similar topics. In the answers of this doctoral student, the *bottega*-model of the doctorate is implicitly visible.

Ideal supervisors are able to contextualise a doctoral project. They know whether a topic is of interest to the community, whether somebody has already worked on it or not, whether it is feasible for a doctoral project. More than giving the right solutions, an ideal supervisor is able to ask the right questions. Especially in the beginning, some doctoral students wish to have clear direction, to receive indications for example regarding basic

literature in their field – these aspects are summarised under Rose's (2003) guidance factor.

Availability and active supervision

Several doctoral students wish to have a supervisor who is more available, who has more time to read their texts and comment on them. This issue is also perceived by several supervisors. Besides the availability of time, it is also useful when doctoral student and supervisor are geographically located at the same place.

Many doctoral students wish to have regular supervision meetings, to receive feedback regularly. An ideal supervisor is available when needed, but also actively supervises. He puts some pressure on his doctoral students, he notices when somebody is going round in circles or stopped working on the doctorate, and he then approaches him, he checks whether the doctoral student is on the right track. An ideal supervisor actively provides the doctoral student with information – this need is particularly felt by external doctoral students.

Some doctoral students say that it would be useful to have more than one supervisor, because this enhances the possibility for contacts and feedback. Overall, it seems that contacts with other senior researchers besides the supervisor are considered a good source for a doctorate.

Different beliefs and implicit models

Thus, beliefs of doctoral students and supervisors about ideal supervision vary. The interesting question is: which beliefs of doctoral students and supervisors are compatible with each other and with the concrete situation, competencies and plans of the doctoral student? If top-level research is the aim of a doctorate, the ideal supervision process might look differently than if the doctorate is rather a side-product of an assistantship position serving local needs. While in the former case, conflicts and intense discussions might be part of the learning process, in the latter supervision probably might rather aim at making the process of the doctorate as smooth as possible.

Aspland et al. (1999) propose tools for enhancing the supervision relationship through making these compatibility issues explicit. They propose guidelines and questionnaire evaluation tools that allow to raise awareness of the importance of the supervision relationship and that encourage discussion about it in an early stage in the doctorate and regularly during the process. These tools help to make explicit both the doctoral student's and the supervisor's beliefs about supervision, and thus to highlight conflicts and challenges in the current situation, but also to orient the process of the doctorate towards the desired outputs.

8.2 Contacts with other senior researchers

Supervision and guidance in the doctorate is not only provided by the official supervisor. Other senior researchers also play an important role in the doctoral process (Lévy et al. 1997; CEST 2007).

There are situations where contacts with senior researchers besides the official supervisor are institutionalised. In Italy, for example, doctoral students are required to stay in regular contact both with their supervisor and with foreign scholars (Cimino and Ferreri 2003). Also doctoral students participating in graduate schools usually get in contact with senior researchers, as graduate schools foresee the constant and sporadic participation of several experienced scholars.

In some cases in my sample, supervisors or the institution put the framework for informal contacts through the organisation of doctoral colloquia or doctoral schools where not only the supervisor and his doctoral students, but also other members of the institute and invited researchers participate. A supervisor who has established a doctoral school recently states:

> The doctoral school has two aims: one is peer communication, meaning that doctoral students talk to each other, also with different backgrounds. (...) The second aim is to put them in contact with important persons from the scientific community. The doctoral school allows it also financially to invite the principal authors of the sector. *Supervisor*

Enders and Bornmann (2001) have asked doctoral degree holders whether they had established contacts with scientist outside their own higher education institute during their doctorate: 26% have established national or international contacts with scientists at other higher education institutes, 15% with scientists outside higher education institutes.

In my sample, all but 8 of the 41 interviewed doctoral students report that they have, regarding their doctorate, some form of contacts with other senior researchers besides their supervisor. This includes, however, also members of the university where they are enrolled at, therefore the number is considerably higher than what Enders and Bornmann report. Formality and intensity of these contacts vary.

8.2.1 Formal and informal contacts

In the case of four doctoral students, supervision by more than one supervisor is institutionalised officially. One of them is in a co-tutelle situation, supervised by a professor at his home institution and a professor at a university in the neighbouring country of the same language. Three doctoral students report to have two or three official supervisors, all of them from their home institution.

Four other doctoral students have regular contacts with the professor that will act as second member of their final dissertation committee, their second reviewer. This can be considered also as an institutionalised, formal type of co-supervision. In all four cases, these are professors from the same institution, in two cases even from the same institute. Some other doctoral students report that they expect that they will have regular contacts with their second reviewer, but that this person has not yet been defined.

Two doctoral students employed by the university and a private research unit located at the university are officially supervised by a university professor, but report to have regular contacts to the director of the research unit as well. This is similar to the situation of the doctoral student employed by a University of Applied Sciences but supervised by a university professor: he reports that he has regular exchanges with his superior at the UAS, and that this person is quite much interested in his results as they are also connected to the institute's activities.

The other 22 doctoral students that report of contacts with senior researchers have rather informal contacts to them. These range from punctual discussions or e-mail contacts up to very regular meetings, for example with senior assistants, assistant professors or professors at the same institute. Some doctoral students still have contacts with the supervisor of their undergraduate thesis, and thus stay in contact with the university where they have done their undergraduate studies.

One doctoral student even reports that he is actually supervised by a professor who is not officially his supervisor, and that his official supervisor probably is not aware of the degree of support he gets from this informal supervisor. In this case, a conflict between the beliefs of the doctoral students about his needs and the concrete official supervision situation is visible. The doctoral student explains how he manages the conflict:

> I've never had any meetings with both of them. To [my informal supervisor] it's clear that the main supervisor is [my official supervisor], but I don't know whether it's clear to [my official supervisor] that [my informal supervisor] is co-supervisor. (...) [My official supervisor] does not know that [my informal supervisor] already has read the dissertation. I think he would feel in an inferior position, I don't know. I know that with him it's ok like this, I am able to manage it. He has never been too much interested. I manage it how I think is the best way. You also learn to manage your decisions politically, when you work with them. *Doctoral student*

That a large part of the supervision tasks is delegated for example to a post-doc researcher, as it is common in some national and disciplinary contexts (for example in many science fields), is a situation I did not find in my sample. Some doctoral students report that they have contacts to post-docs or senior researchers at their research unit, but none of them pictured the situation as official delegation.

8.2.2 Internal and external contacts

The 33 doctoral students mentioning contacts with other senior researchers have contacts both with professors from their home university or institute and with professors from other universities, most often from abroad, as well as with professors from other universities that have an institutionalised contact to their home university in that they act as visiting professors or teach a limited amount of classes.

14 doctoral students tell about internal contacts, three of them have also contacts to visiting professors. 11 doctoral students in the sample have contacts to external researchers. 7 have both internal and external contacts, one of them additionally also to visiting professors, while one only reports about contacts with visiting professors.

There are different ways in which doctoral students can get in contact with external senior researchers. They include stays abroad, conferences and workshops, as well as the collaboration in research projects that are done together with other institutions.

It seems that this collaboration is an important tool for getting in contact with other researchers. These contacts are often used also for the doctoral project – one supervisor clearly states that he counts on the support of the collaborator in a project for the supervision of his doctoral student working in this same project.

The role of the doctoral student as a newcomer in the community is seen as a privilege – as a supervisor puts it, this role can facilitate contact to other researchers:

> The doctoral student has a role that allows him to explore other realities. (...) Any person in the scientific community accepts talking to you – you have to exploit this! *Supervisor*

In line with other supervisors, this supervisor also observes that doctoral students really do it – they easily get in contact with senior researchers, once they are physically located at the same place, for example in a conference or during a stay abroad.

8.2.3 Stays abroad

The frequency of stays abroad depends on the discipline as well as on the national context. Regarding doctoral students in France, stays abroad are rare, and it seems that supervisors do not encourage their students to mobility, because they think it to be too time-consuming, given that funding doctoral students receive is restricted to 3 years (Paul and Perret 1999). A reason for low mobility in engineering and technical sciences is competition: as in these urban (Becher and Trowler 2001) fields, doctoral students are often part of research groups working on topics involving patenting, licensing and intellectual property aspects, research groups might feel to lose part of their knowledge when sending doctoral students to other groups (Kehm 2007a).

In my sample, 6 doctoral students have been abroad for some months during their doctorate, 7 planned to do so at the moment of the interview. During these stays abroad, they have the chance to get in close contact with experts in their field. Several doctoral students report that they have established the contact to the research centres they have visited by themselves, while in other cases these contacts have been facilitated through the supervisor.

All of the six doctoral students that have spent a period abroad during their doctorate refer to this experience as a fruitful one, as a crucial moment in their doctorate:

> By now, if I wouldn't have gone on this stay abroad, I don't think I would ever have been able to do this doctorate. *Doctoral student*

Stays abroad allow doctoral students to get in intense contact with experts in their field, to work together with them. One doctoral student reports that during his stay abroad he has met his hosting professor every week for two to three hours – and thus has had much more intense supervision than at home. Only in one case, the doctoral student was unlucky: the professor he was supposed to work with had received an appointment at another university shortly before the doctoral student went for his stay abroad, and thus was bothered with moving and did not have time for the doctoral student.

Besides the chance to get in contact with interesting people and ideas, a stay abroad is also seen as the chance to completely immerse in one's topic for a certain period, without being bothered by other tasks and activities. However, a stay abroad also needs long-term planning, in order to make sure it can be exploited as much as possible. For example, if one wants to use a stay abroad for data analysis, data gathering must obviously be finished before.

Some doctoral students also benefit of the course offer at the university they visit, or participate in workshops and seminars, and thus get in touch with other senior researchers and peers. Two doctoral student tell that they have enjoyed the academic atmosphere, the constant discussion at the university they visited – something at least one of them truly misses at his home university.

One doctoral student who was about to departure for a stay abroad a few days after the interview reported that he thinks that this stay abroad will be very useful for him, even though it might slow up the doctoral process: he was not going to work directly on his dissertation, but to benefit from the stay abroad for a full immersion in his broader topic area. This doctoral student aims at an academic career, and thus considers it important to broaden his knowledge also beyond his specific dissertation topic.

Most often, stays abroad are financed through scholarships. The Swiss National Science Foundation has a programme that is aimed at financing stays of doctoral students at foreign research institutions, and several doctoral students, as well as supervisors, refer

to this as a very good tool from which to benefit. Besides providing the chance for funding of a stay abroad, this scholarship programme also forces doctoral students to make the point of the situation when applying for it.

Not only doctoral students, but also supervisors generally consider stays abroad a good opportunity for doctoral students. They underline the importance of international contacts, especially if one aims at an academic career. One supervisor also states that the number of comparative research projects increases, and thus stays abroad are useful also for the concrete research projects.

8.2.4 What contacts with seniors are useful for

Contacts with other senior researchers besides the supervisor vary in their intensity. While some doctoral students just have punctual e-mail contacts or report of singular discussions they have had during a conference, others meet these senior researchers regularly.

Doctoral students consider it fruitful to have contacts with other senior researchers besides their supervisors. These researchers are often experts in the specific field the doctoral student works on, or at least in aspects of it – they "talk the same language", as several doctoral students underline. Also supervisors see it as a good thing to put their doctoral students in contacts with colleagues that are experts in specific areas of the doctoral projects. This holds particularly true when a supervisor acknowledges that his own expertise in the specific area is not high enough in order to allow for high quality supervision in all aspects. Also the scientific community's role in judging the work of doctoral students, and thus the importance of contacts to this community, is mentioned.

One doctoral student still at the beginning of his doctorate stated that contacts with visiting professors help to feel part of a scientific community:

> I feel quite much like a scientist, now that [a visiting professor] has been here. We had meetings, developed a model together with him, discussed correlations. All these intelligent things. *Doctoral student*

Some doctoral students in the sample often used the word "we" when talking about what they do in their doctorate. Some of them referred to the local research group at the institute, while one stated that he was talking on behalf of the whole community working on the topics he was interested in – he clearly feels part of a common scientific endeavour.

Two doctoral students report that they have contacts to professionals that have activities in the field the doctoral student looks at in his doctoral project. Talking to professionals provides them with fruitful insights, and they also report that the professionals are interested in what they are doing in their research. One of them clearly states that for him

it is more interesting to talk to professionals than to researchers, because he thinks that there are very few researchers that are truly interested in all of the topics he combines in his work.

Not all doctoral students, however, have fruitful contacts to other researchers regarding their dissertation. One doctoral student thinks that it is his own responsibility to write a doctorate and thus he should not contact other experts, while another one reports that in theory he would know senior researchers and a professor from another Swiss university because he has done his undergraduate studies there, but he thinks that this institute is too much in competition with the institute where he is enrolled for the doctorate, and thus he should not contact them too much.

In one case, the difficulty to get in contact with other experts is given by the sub-field's characteristic:

> [I'm working on] a hot topic, it seems to me that working on it behind the scenes, but they don't talk about it. (...) It's about commercial applications. *Doctoral student*

This doctoral student works in a technological field, where most of the research is done by private companies who make monetary profit out of it.

Again a challenge can occur when the doctoral student's research topic is not connected directly to the research topics of the institute – one doctoral student reported that he has many internal and external contacts, but they concern his tasks as employee and are not directly useful for his doctorate.

Overall, even though there are some challenges, contacts to senior researchers besides the supervisor are seen as useful, whether they are formal or informal, internal or external.

8.3 Contacts with peers

Besides contacts with senior researchers, many doctoral students also have contacts to other doctoral students. Interestingly, however, this number is lower than the number of doctoral students stating to be in contact with senior researchers: overall, 23 of the interviewees reported to discuss about their doctorate with other doctoral students.

9 of them have contacts to doctoral students from other universities, while in 7 cases contacts are limited to the same university and institute. Again 7 doctoral students report that they are in contact with both doctoral students from the same institute or university and from other universities.

One doctoral student reporting about internal contacts to other doctoral students states that now that he is about to finish his dissertation, he has become an informal advisor for

younger doctoral students, and thus is in contact with them about their doctorate and less about his own topic.

Some doctoral students also institutionalised contacts to other doctoral students independently from the institutional setting. In the interviews, three examples of self-organised institutionalised exchange among doctoral students emerged:

In Lugano, a group of doctoral students has created an own doctoral school ("autoscuola"), in which they regularly meet in order to discuss basic texts of their field. They distribute the texts beforehand, and everybody participating in the meeting is supposed to have read them. Usually, they invite also professors for discussion.

Doctoral students from one chair at the communication institute in Zurich have built an interest group regarding their topic area. Short after the interviews with a doctoral student that was among its founders, the first event took place: they have organised a workshop in which doctoral students working on these topics had the chance to discuss their projects with experts in the field. This interest group is supposed to cover German speaking doctoral students working in their field, but enrolled at different universities.

A third initiative was undertaken by a group of doctoral students that are mostly employed by universities of applied sciences and doing a doctorate at a university. Their aim is to build a network of support that allows them covering the needs they feel because they are not directly integrated at the university. They meet three to four times per year. Meetings include discussion of projects, but they also invite experts for talks or visit organisations that are of interest to them. Besides content-wise support, they also provide social and psychological support to each other.

This twofold characteristic of content-wise and social/psychological support of peer contacts is common to the accounts of many doctoral students in the sample. Generally, it seems that contacts with doctoral students at the same institution as well as contacts with friends doing a doctorate in any field at another university are used more often for moral support. Doctoral students working with the same supervisor or at the same institute often feel like being in the same boat, especially if they have started their doctorate more or less simultaneously. This also holds true for doctoral students from other institutes at the same university – here, friendships between doctoral students emerge. They have a similar background, they have to cope with the same institutional requirements, and they encounter similar problems.

Contacts with doctoral students from other universities are used for content-related discussions. This is clearly related to the proximity of the topics – many doctoral students report that they have found doctoral students working on very close topics while attending summer schools, workshops or conferences abroad, while at their home institutions the proximity of the topics of doctoral students is not high enough to allow

for really fruitful discussions. Additionally, it is also seen positively to get new perspectives on one's own work when discussing it with people with whom one is not in daily contact.

Several doctoral students also report that they have friends, for example from undergraduate studies, which are doing a doctorate at another university or faculty. In this case, they report about general intellectual discussions they have on a wide range of topics, but also about mutual complaining about the difficulties of being a doctoral student.

Besides other doctoral students, family members and non-academic friends also seem to be important figures in supporting doctoral students.

8.4 Short conclusions

This chapter has addressed the dimension of personal relationships with seniors and peers. In these relationships, beliefs about the doctorate are reflected. This is especially visible in the supervision relationship: here, the variety of the situation could be described as a continuum ranging from a hierarchical master–apprentice situation to a situation where the doctoral student and the supervisor collaborate as colleagues. Murphy et al. (2007) have found similar results in a study including interviews with doctoral students in engineering. They organise doctoral students' beliefs about supervision in the two dimensions: regarding the role of the supervisor they distinguish between *controlling*, thus taking over the responsibility, and *guiding*; regarding the focus of the supervision the dimension ranges from *task-focussed* to *person-focussed.* The distinction between *controlling* and *guiding* roles of the supervision seems to correspond to the distinction between the hierarchical master-apprentice situation and the colleague-like collaboration.

Besides the supervisor, also other senior researchers and peers, both from the same and from other universities, play an important role in the doctorate, be it in terms of content-related input and feedback or in terms of emotional support. Here, too, differences between local and international orientation are visible. Generally, contacts to other researchers are considered as enhancing the doctoral experience, both by doctoral students and supervisors.

This chapter concludes part B containing the description of the dimensions of the doctorate, thus a first presentation of the results of my study. The formal and organisational, personal, academic and relationship dimensions have been addressed. The following third part looks at these results from a more analytical perspective, by trying to identify some structure and patterns within the already presented diversity.

III. CATEGORISATION AND PATHWAYS

9 Diversity in the Swiss communication doctorate

In the previous part, descriptive results of this study have been presented, illustrating the wide range of diversity regarding four dimensions of the doctorate in Swiss communication sciences: the formal and organisational, personal, academic and relationship dimensions. It is the aim of this last part to bring some structure in this broad variety, by deducting a classification of the doctorate and analysing pathways of doctoral students.

In this first chapter of the last part, a categorisation of the doctorate is proposed and described. This categorisation was built in an inductive way, emerging from the data. The clustering of doctoral students according to their situation showed that the integration in the scientific community is a dimension that allows for a rather clear categorisation criterion, which reflects many other characteristics. A second crucial dimension that is, however, closely linked to scientific integration, seems to be represented by organisational integration. In the following, these two integration dimensions are addressed. Then, the categorisation, based on the dimension of scientific integration, is described. Finally, the categories are put in relationship with other characteristics of the doctoral students and the environment of the doctorate.

An important shortcoming of such a categorisation is obviously in the fact that it describes static situations. The doctorate, however, is a rather dynamic process, in which changes occur. This more dynamic dimension is brought into the description of the doctorate in chapter 10, which addresses individual pathways of doctoral students, and where it comes clear that the boundaries between the presented categories are blurry, and doctoral students might move between them during their doctorate.

9.1 Dimensions of diversity: integration

When analysing diversity, a first question that arises is: diversity according to what? It is thus necessary to define the dimensions of diversity that should be analysed.

The function of the doctorate as research training and its role as an entry ticket to the academic community are widely acknowledged, in the policy and scholarly literature, but also among academics and doctoral students, as my interviews have shown. Even if other possible ways than the academic career are seen for doctoral degree holders, the doctorate's role as reproducing the academic community seems to remain the core of the concept. Academic professionals are integrated both in a local, organisational setting and in a disciplinary community – thus, it seems plausible to define diversity in the doctorate according to these dimensions. One could for example expect a doctoral student

pursuing an academic career to be highly integrated both organisationally and scientifically, while for a doctoral student without academic aims scientific integration is probably less important – integration in a professional context might be of higher relevance in this case.

Organisational integration seems to be a crucial aspect of doctoral training. Doctoral students not employed by a higher education institution report that they miss a closer integration into a concrete local context, and those who are employed by a higher education institution acknowledge the advantages of this integration, in terms of access to resources of different kind: to infrastructure such as libraries or a workplace with a computer giving access to scientific databases; but mainly to peers and senior researchers and to information, for example regarding conferences, new publications or the current discussion of the scientific community. The sample includes 6 *external* (not employed by a higher education institution) and 35 *internal* (employed by a higher education institution) doctoral students.

Situations of doctoral students in this study point to a connection between scientific and organisational integration. Doctoral students in the sample who are not integrated in an academic organisational context also lack of integration in a broader scientific context.

Participation in the scientific community can occur in a passive or active way (see also 7.1), thus for example through participation at conferences with or without presenting one's own work or through reading literature and actively contributing to the scholarly discourse by own publications.

Regarding the dimension of scientific integration, I focus on active participation in the community. Active participation seems to be linked to the sense of belonging to a scientific community as well as to contacts with other researchers, and thus the visible participation and the self-representation of a doctoral student seem to be connected.

During the interviews I have asked doctoral students for their publication lists or, where not available, to list their publication and active conference presentations. In order to measure active participation, I have counted all conference presentations and publications in scholarly journals or books, from the beginning of active participation until the end of the year 2007. Not included were reports, as they were usually based on mandated research projects and thus do not represent an active output towards the scientific community but rather a result of a project that is given to the client or sponsor, and newspaper articles, a genre that is quite frequent among doctoral students in the field of communication sciences, but, however, represents an output towards society and not towards a specific scientific community.

All scholarly publications and conference presentations are counted, including output produced before starting the doctorate. As the sample of doctoral students is

heterogeneous regarding the moment of the beginning of the doctorate, and thus regarding the years passed in the doctorate until the moment of the interview, the total number of scientific output is divided by the year of the doctorate, or, if the doctoral student had scientific output before starting with the doctorate, by the years since the first publication or conference presentation. This gives an approximate indicator of active participation in the scientific community.

This indicator is split into four groups: *inactive* doctoral students without any scientific output in their doctorate (12 doctoral students in the sample), *slightly active* doctoral students with an average of maximum one publication or presentation per year (8 doctoral students), *active* doctoral students with an average of more than one to a maximum of two scientific outputs per year (10 doctoral students) and *very active* doctoral students with more than two publications or conference presentations per year (11 doctoral students). The ranges defining the four groups emerged from the distribution of publication/presentation numbers (for example, there was a gap between 2.0 and 2.4 publications/presentations per year) and a closer look at the individuals at the extremes of the groups.

Here, a remark regarding a methodological shortcoming is to make. There are doctoral students in the sample, who are still rather at the beginning of their doctorate (the *beginners,* see 4.3.2), who have not yet clearly defined their topic. It is thus likely that they did not yet do any publication or conference presentation. Some supervisors in the sample underlined that they do not expect their doctoral students to become active participants in the community already in their first year. This might lead to some distortion in this dimension: probably, some of the *inactive* or *slightly active* doctoral students that are still at the beginning of their doctorate might become more active during their doctorate.

	beginner	**project is clear**	**data gathering**	**data analysis**	**writing up**	**handed in**	***total***
very active	3	3	4		1	1	*12*
active		3	3	3		1	*10*
slightly active	1	2	3	1	1		*8*
inactive	5	3	2	1			*11*
total	*9*	*11*	*12*	*5*	*2*	*2*	*41*

Table 14: Comparing scientific integration with stage of doctorate

Table 14 illustrates this by comparing the degree of scientific integration with the stage of the doctorate. It seems thus that the share of *inactives* slightly decreases during the process. However, there are also *very active* doctoral students among the group of the *beginners.*

9.2 Description of diversity: an inductive categorisation

When grouping the doctoral students in the sample according to their degree of active participation in the scientific community (*inactives*, *slightly actives/actives* and *very actives*), it emerges that these groups share also other characteristics. Therefore, the categorisation proposed in the following is formally based on the dimension of scientific integration, but covers also other dimensions.

What is presented in the following is, in the terms of Jacob (2004), a categorisation, and not a classification: the boundaries between the categories are fuzzy, and membership to the categories is dynamic. Also, membership to a category can be of lower or higher intensity. The categories presented in the following can be ordered on a continuum, and they represent specific, typical situations that are also found in the interviews.

In the following, the three categories of situations of doctoral students are described individually. Then, descriptive statistics about publication and presentation activity of the doctoral students in the different categories are provided (9.2.4). Finally, Table 16 (9.2.5) gives an overview on the three categories and their characteristics.

9.2.1 Academics

Anna[40] is a typical example of an *academic*: already during her studies, she established a connection to the academic world, by working as a student assistant. The supervisor of her Master thesis knew that she was interested in doing research, and thus informed her that a colleague of him at a Swiss university was looking for an assistant with her profile, so she applied for the position. Even though Anna considered also other possibilities when she had finished her Master's degree, she decided in favour of the assistant position, as she had enjoyed what she had experienced as academic work as student assistant. For Anna, it's clear that to do a doctorate also includes participating to the community's discourse; therefore she starts participating in conferences, first in a passive way, already in her first year of doctorate. She enjoys the scholarly discussions, and soon starts contributing to it as well. Her environment favours this integration: together with her supervisor, she edits a book where she also writes a chapter. Her supervisor also encourages her to participate in conferences. She likes the experiences she makes during her doctorate, and thus states that she will try to find a post-doc opportunity when she has finished the doctorate.

Academics are doctoral students that are employed by a higher education institution and highly active in a scientific community. Their organisational integration is often less

[40] As respondents were promised full confidentiality, the names in the text are invented. Some of the „typical examples" also combine characteristics of the situation of more than one doctoral student.

intense than in the case of *multifunctionals* and *workers*, but still they actively contribute to the local organisational environment.

The tasks of *academics* usually involve research projects, which are often strongly linked with the dissertation project. Usually, they are also involved in teaching activities, in which they can integrate results and other material from their research and dissertation projects.

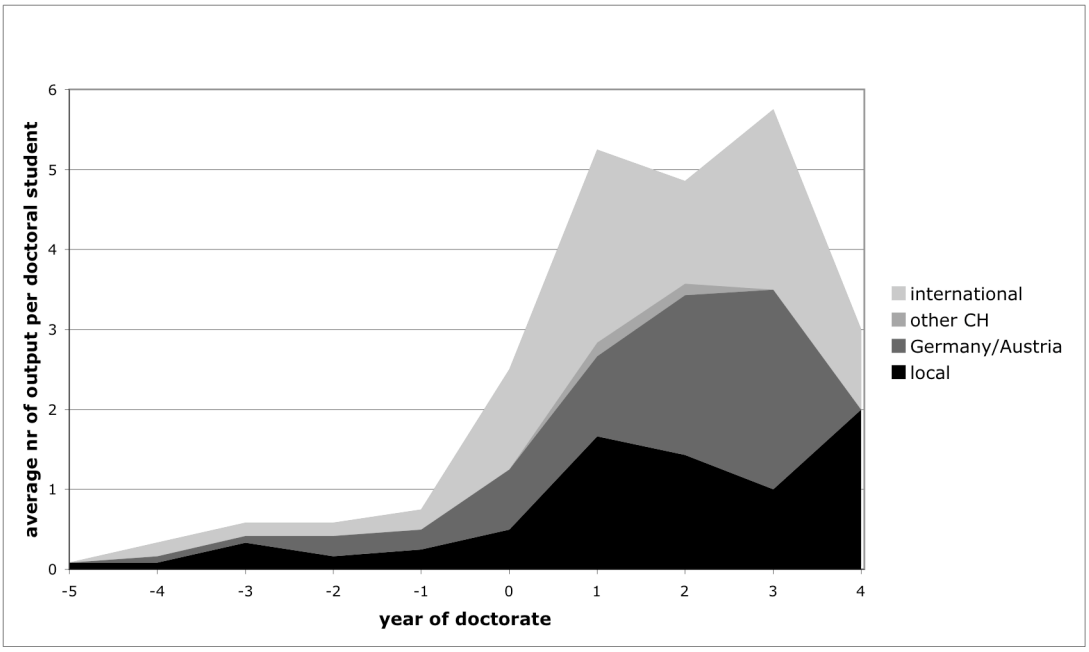

Figure 8: Geographical range of output, academics (N=12)

Most *academics* see an academic career as a possible option for their future. Only one *academic* stated that he preferred a non-academic future – mainly because of the insecure financial situation, as he was planning to start a family. One year after the interviews, one of the *academics* was on a post-doc position abroad, while another one had received a request to teach a course at another Swiss university.

The output of *academics* covers both a local and international range (Figure 8). *Academics* generally show an increase in publications over time (Figure 9; the numbers in the legend of the lines indicate in which year of doctorate the individuals are). Some of them have already been active participants in a scientific community before starting the doctorate; therefore the scale on the x-axis starts at -5.

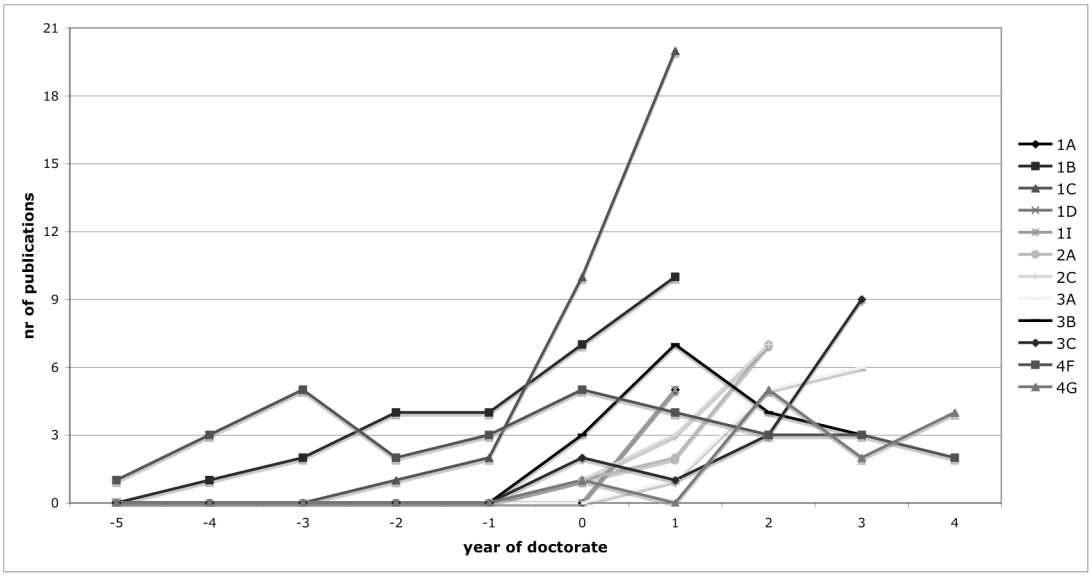

Figure 9: Output over time, academics (N=12)

In one case (4F), publication activity has decreased after the beginning of the doctorate – this can be explained by the fact that with the beginning of the doctorate, this doctoral student added also an assistant position to his already established professional activities, which he continued. Thus, the availability of time obviously decreased, which might have had an influence on the scientific output. A closer look at the titles of publications and presentations however shows that with the beginning of the doctorate, this doctoral student has shifted his orientation towards an area more closely connected to communication sciences. Also, an increase in English language publications can be observed in this particular case.

Another line catching one's eye in Figure 9 is the one of doctoral student 1C. This doctoral student has an astonishingly high amount of publications and conference presentations – all together 33, divided among 26 conference proceedings and 5 journal papers. A closer look at the publications reveals that this doctoral student often publishes with two and more co-authors. He appears as first author in 14 of the 33 publications. In the interview, he explains that he divides the work of presenting and writing publications with colleagues – there are moments where they are simultaneously presenting papers on two different continents. Also, they often present more than one paper at a conference. From the interview, it comes clear that he considers scientific output an important part of the doctorate:

> I've started presenting results already while writing my Master thesis, so meanwhile the list has grown. Journals, conference proceedings, it works out. Every time I have a result that is presentable, I really try to place it adequately, to set the cornerstone, also in order to be able to show afterwards what I've done. *Doctoral student*

Interestingly, when compared to the overall sample, *academics* have a slightly lower international output. This is counterbalanced by a higher output in German speaking countries. Equally, compared to the *multifunctionals, academics* have a lower output in English and a higher output in the local languages. This can be explained by the at least two reasons: on the one hand, eight out of the twelve *academics* write their dissertation in the German speaking part of Switzerland, seven of them are Germans and have done their undergraduate studies in Germany. On the other hand, *academics* overall have more publications and presentations than *multifunctionals*, and thus it also seems likely that among them they have both international and local output, thus being integrated in an international community, but also active at the local level.

9.2.2 Multifunctionals

A typical example of a *multifunctional* is Tim: Tim was approached by his supervisor while writing his Master thesis. The supervisor proposed him an assistantship position, which entailed also the possibility of doing a doctorate. Tim thought "why not" and started the doctorate without a clear plan for his future, but with a strong interest in the topic he works on. His employment position includes teaching assistantship as well as collaboration in a small, local research project, both in the area of his dissertation topic, but covering rather the basics of the field than his specific topic. Out of this research project, a first publication emerged, a paper that he presented at a local conference, which was then published in the university's journal. He then started writing another paper with a colleague from the institute, which he submitted to an international conference, and which was accepted. He thus sporadically participates in conferences or writes a publication, but his main activity remains local, in that he is quite engaged in teaching assistantship and the research project. He is not yet sure whether his future will be in the academic or the non-academic field, but currently he tends to prefer the academic field, as he experiences positively both teaching and research activities, including participation in the academic community.

Multifunctionals – the largest group in the sample – are doctoral students who, as the name says, fulfil different functions, and are in a situation that prepares them for different roles for their future. They are generally highly involved in a local, organisational context, but do also participate, at least to a certain extent, in a scientific community.

Several *multifunctionals* in the sample are employed at least partially on research projects, which show some synergies with their doctorates. All but one of the *multifunctionals*, however, regularly fulfil also tasks in the area of teaching.

One could say that in the case of the *multifunctionals*, the implicit contract between doctoral students and the university is fulfilled: *multifunctionals* provide the work the

university needs in order to maintain its functioning, but, on the other hand, also have the possibility to do a doctorate and to experience what it means to do academic work and to participate in a scientific community. It seems that this is a good base that allows then for a conscious decision about one's future career – *multifunctionals* have had a glance at the different activities that characterise the academic profession. They also have the chance to build their own network in the scientific community, which seems to be crucial for a future career in academia. Similarly, several *multifunctionals* also have contacts to professionals outside the academic community.

When looking at the publication and presentation activities of *multifunctionals* considering the time dimension, a division in three groups emerges: those who started publishing rather late in their doctorate but with an increasing number of publications, the *multifunctionals/late starters*; general *multifunctionals* with a steady up and down in the number of publications in the years; and *multifunctionals* with a very *low number of publications*.

Multifunctionals/late starters

A first group of *multifunctionals* shows similarities with the patterns of *academics'* pathways. They are considered *multifunctionals* because their average scientific output over the whole period of the doctorate is at most 2 per year, but when looking at their individual publication and presentation patterns (Figure 10), it comes clear that they show the same increasing tendency as *academics* – with the difference that they started their publication activity later on in the doctorate, and generally with a lower overall output. It is therefore interesting to look more closely at these doctoral students' individual pathways, in order to understand this difference.

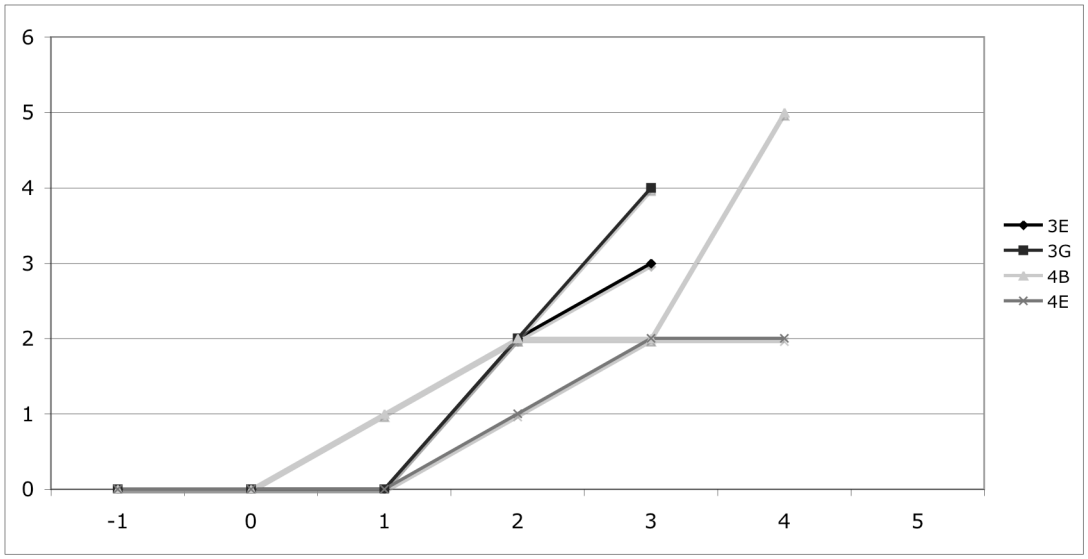

Figure 10: Output over time, multifunctionals/late starters (N=4)

Compared to the overall sample, *multifunctionals/late starters* do not show a decreasing tendency in output from the fifth year of the doctorate on. The average number of publications and conference presentations per year in the fifth year is even higher in this group (3.5) than among the *academics* (3). It is also interesting to note that *multifunctionals late starters* overall show a higher share of international publications than the average of the whole sample (Figure 11). However, the sample is small, so these numbers have to be read with care.

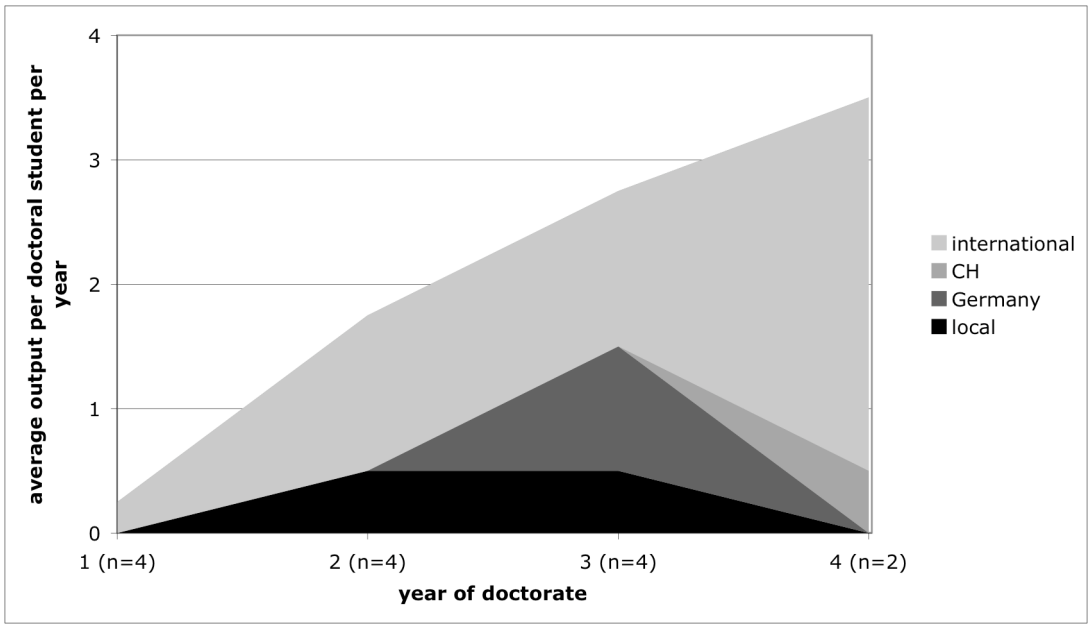

Figure 11: Geographical range of output, multifunctionals/late starters (N=4)

Three of the *multifunctionals/late starters* clearly wish to pursue an academic career, while the fourth states that he prefers to leave the academic environment when he has finished the doctorate.

Something that distinguishes this group from other doctoral students in the sample is the high share of publications written together with the supervisor – about half of the publications have the supervisor among the co-authors, while this share is about one fourth in the whole sample. There is one doctoral student in this group without any publications co-authored by the supervisor. In this case, the supervisor is a professor who teaches only a few hours at the university where the doctoral student is employed. Among the five publications of this doctoral student, however, three are written together with the director of the institute where the doctoral student is employed, thus also co-authored by a person that has an institutionalised relationship to the doctoral student.

Three of these four doctoral students work in an area that is closely connected to new information and communication technologies. These three doctoral students rather slipped into the doctorate – one wrote his master thesis with the supervisor of the doctorate, who proposed him to do a doctorate, another one became an assistant by coincidence, because a colleague of him found another job and then proposed him as substitute, and the third applied for an executive master and during this master also started the doctorate. They started their doctorate without clear ideas about it.

But how can it be explained that these doctoral students started being active participants only at a later stage in their doctorate? Two of the four doctoral students are not employed directly by their supervisor, and fulfil mainly tasks in the areas of teaching and administration. Also one of the two doctoral students employed by the supervisor fulfils mainly tasks in the area of teaching. Together with the fact that they rather slipped into the doctorate, probably in the beginning they were too busy with teaching and administration activities and did not yet consider active participation in a scientific community as part of the doctorate. The fourth *multifunctional/late starter* works on a research project that required some time to allow for the production of results that could be published or presented.

I have interviewed two of the four professors supervising doctoral students in the group of the *multifunctionals/late starters*. They both underline the importance of active participation in the scientific community, and state that they encourage their doctoral students to publish and present their results.

General multifunctionals

The most general pattern of output of *multifunctionals* is shown in Figure 12: a comparatively low scientific output, with no visible tendency towards increasing or decreasing activity, but a steadily ongoing up and down. A closer look at the interviews

of the doctoral students in this group shows that they are all strongly involved in teaching and administration tasks.

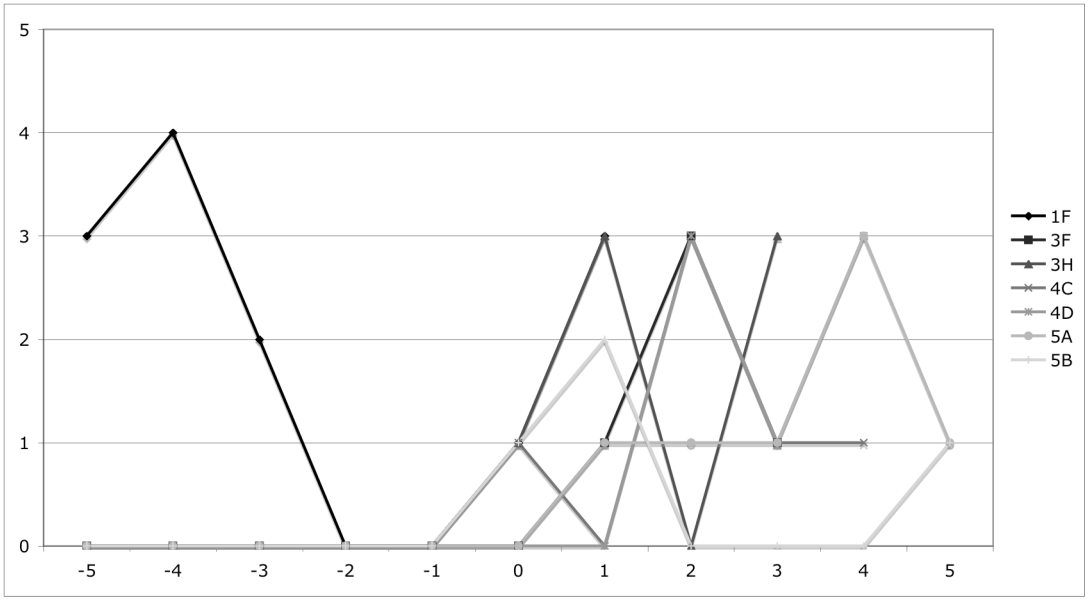

Figure 12: Output over time, general multifunctionals (N=7)

The only doctoral student in this group with publications before the beginning of the doctorate (1F) is working in the area of technology. Before starting his doctorate, he has been employed by private companies, working on projects that included parts of research and development and therefore also led to publications and conference presentations. For this doctoral student, to do a doctorate means to add another project to his activities, with the difference that this time his employer is a university. He plans to leave the university after the doctorate.

The up and down in the scientific output through the years is even visible when aggregating the data of all *general multifunctionals* (Figure 13).

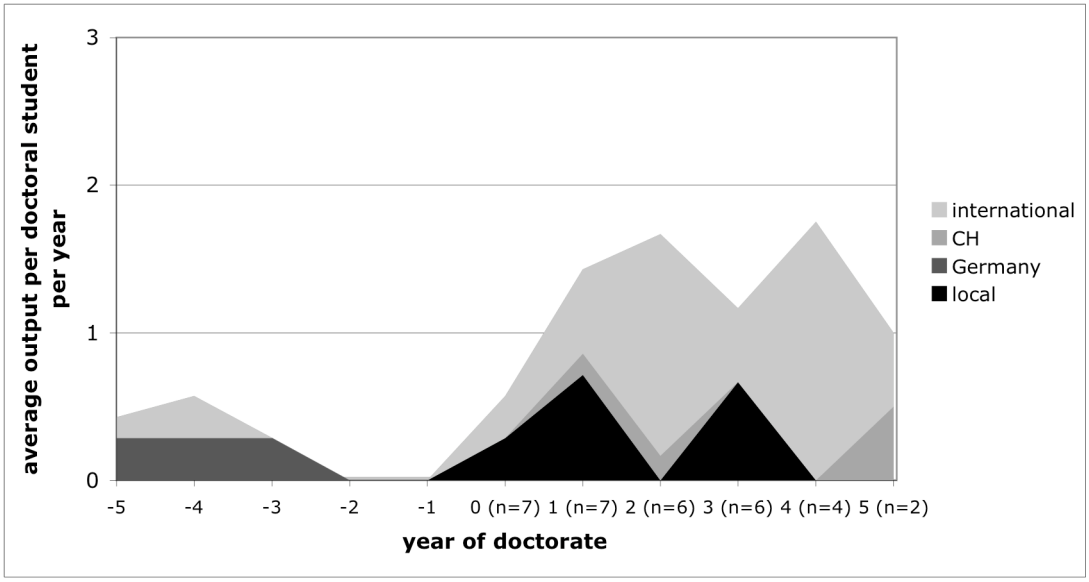

Figure 13: Geographical range of output, general multifunctionals (N=7)

More than half of the publications of *general multifunctionals* are single-authored, and less than half of the multi-authored publications are written together with the supervisor. While less than half of the single-authored publications are on an international level, this share is nearly three out of four for the multi-authored publications.

Three of the seven doctoral students in this group have mainly single-authored output, while two do not have any output without co-authors. One of the latter has all but one output together with his supervisor, while the other one has all his output (only presentations) together with other doctoral students from the same university. In this latter case, it seems also from the interview that the initiative to write a paper usually came from the co-authors rather than the doctoral student himself. Both doctoral students publishing only with co-authors state that they do not feel like being part of a scientific community that goes beyond the organisational unit.

Multifunctionals with few publications

A last group among the *multifunctionals* are those with a very low publication output, a maximum of two publications over the whole period of the doctorate. This output can occur at different moments during the doctorate. It can be expected that these doctoral students show similarities with *workers*.

The *multifunctionals with few publications* in my sample do not have any publication together with their supervisor, and two third of the output, including all international output, is multi-authored, written with other doctoral students, in one case with a post-doc researcher, from the same institute. Only in one conference presentation, a professor

regularly visiting the university where the doctoral student is enrolled and employed appears as third author.

Doctoral students in this group are strongly involved in local and organisational activities, including teaching, administration and research or service projects on a local level (for example the analysis of an internal newspaper of a local company). From the accounts of two of the five *multifunctionals with few publications* it seems that supervision is rather scarce. Another doctoral student states that he would prefer to have a supervisor that is "academically more powerful" – from the interview it also seems that there is no encouragement for participation in a scientific community. One doctoral student in this group is employed by a University of Applied Sciences, and seems to be completely overloaded with work stemming from teaching and local research projects. The fifth doctoral student in the group is still in a beginning situation in the doctorate, and has had one publication in the very beginning of the doctorate, together with a doctoral student who was about to finish his doctorate.

Overall, *multifunctionals with few publications* seem to be in similar situations as *workers*, with a large share of their time being devoted to local activities in teaching, research and administration, and not much encouragement for active participation in a scientific community on the part of their supervisors and other members of the local environment.

9.2.3 Workers

Wanda is a typical example of a *worker*. She already has some professional experience in a field that is somewhat related to her doctorate and is employed as a teaching assistant, meaning that she assists lectures, but also supervises students in their Bachelor and Master theses. Since some time, she is also responsible assistant for a Master, and thus is quite involved in student support also from an administrative point of view. She feels fulfilled by this work with the students. Wanda says that she does not participate more actively in the scientific community for two reasons: on the one hand, she feels that she does not have enough time for doing so, on the other hand she thinks that her English skills are not good enough, and there is no local community of reference she could refer to. Once finished her doctorate, she will rather try to find a job outside academia, or, if related to academia, not in an academic position but rather in administration or management.

Another typical example of a *worker* is Eric. He has a background in a neighbouring field of communication sciences, and has done a Master at a Swiss university that brought him into contact with communication sciences. He decided to enrol for a doctorate at the same university because he wanted to go on learning, to deepen his knowledge in an area that is part of this field. He had the chance of getting a scholarship

for doing his doctorate. During the process, however, he felt the need of more integration into an academic setting, and therefore tried to find a job at the university. Given the fact that he was already financed through the scholarship, however, this was a difficult endeavour, and he did not succeed. He is now struggling with the difficulties of this missing integration. Even though originally he wished to pursue an academic career, he resigned, because he thinks that he does not have enough connections and he is not active enough in the academic community – something that, according to Eric, would have been easier if he was more closely integrated in the higher education institution.

These two examples show that the category of the *workers* contains two basically different types of situations, but who lead to similar situations: in this group, there are both internal and external doctoral students.

Internal workers therefore are doctoral students employed by a higher education institution, but who do not actively participate in a scientific community. They generally participate intensively in local activities of the university. For example, they often have an important role in teaching assistance, in student management and student supervision, or they participate in administrative activities of their institute. Some doctoral students in this group are rather in the beginning of their doctorate and thus probably become more active participants in a scientific community later in the process.

External workers are by definition not employed by a higher education institution and therefore not officially integrated into an organisational context. In this sub-group, two different situations are found: there are doctoral students who started their doctorate as *externals*, and others (two in the sample) who were employed by a university but then decided to leave the job and thus became *externals*.

Among the *external workers*, mainly two ways for financing doctoral studies are found: through an employment at a non-academic organisation, or, in a few cases, through a scholarship or a sequence of scholarships. The interviews shows that in both cases that the lack of formal integration into a local organisational context is usually not counterbalanced by informal integration. Only one doctoral student in this group has some sporadic collaboration in small projects of his supervisor.

For some doctoral students in this group, the strong local integration, be it in an academic or in a non-academic organisation, is a reason for the lacking participation in a scientific community – they think that they don't have time for actively participating in the community. Most of the *workers*, however, do not (yet) seem to look for more participation in the academic community. Equally, they are not encouraged to be active participants by their supervisors either.

9.2.4 An overview of scientific output among the categories

Table 15 summarises the aggregated scientific output by the different categories and sub-groups, including total numbers as well as percentages per categories/sub-groups. Some particularly interesting numbers to whom reference is made also in the text are highlighted. As *workers* do not have scientific output, they are not included here.

	Academics (n=12)	**Multi-functionals: late-comers (n=4)**	**Multi-functionals: general (n=7)**	**Multi-functionals: low output (n=5)**	***Total (n=28)***
Total Publications	184	26	49	6	*265*
Publications per doctoral student	15.33	6.50	7.00	1.20	*9.46*
Publications with supervisor	45 (25%)	12 **(46%)**	11 (22%)	0	*68 (26%)*
single-authored publications	58 (32%)	9 (35%)	26 **(53%)**	2 (33%)	*95 (36%)*
publications with two authors	54 (29%)	2 (8%)	11 (22%)	2 (33%)	*64 (24%)*
publications with 3 and more authors	72 (39.1%)	15 **(58%)**	12 (25%)	2 (33%)	*101 (38%)*
multi-authored publications as first author	46 (37%)	4 (24%)	8 (35%)	2 (50%)	*60 (23%)*
books	5 (3%)	1 (4%)	1 (2%)	0	*7 (3%)*
book chapters	28 (15%)	5 (19%)	3 (6%)	1 (17%)	*37 (14%)*
conference presentations	116 (63%)	16 (62%)	36 (74%)	4 (67%)	*172 (65%)*
journal papers	35 (19%)	4 (15%)	9 (18%)	1 (17%)	*49 (19%)*
English	87 (47%)	18 (69%)	35 (71%)	4 (67%)	*144 (54%)*
local language	91 **(50%)**[41]	7 (27%)[42]	12 (25%)[43]	2 (33%)	*112 (42%)*
other language non CH	0	0	0	0	*2 (1%)*

Table 15: Summary statistics of doctoral students' publications[44]

[41] 24 Italian, 63 German

[42] 2 Italian, 5 German

[43] 7 Italian, 6 German

9.2.5 Summary of the categorisation

Table 16 gives an overview of the characteristics of the three categories. The first two rows show the scientific dimension that defines the categories, and the organisational dimension that is strongly connected. The other rows include information that has been used in the above description of the categories, or that will be used below. Part of the information from the description above will be used in the following section for comparing the different categories.

	Academics (n=12)	**Multifunctionals (n=16)**	**Workers (n=13)**
employment situation and main tasks	internal; main tasks in research and teaching (6), teaching (4), research (2)	internal; main tasks in research and teaching (9) or teaching (6), 1 staff	Internal (7) or external (6); internal: main tasks in research (3), teaching (2), or research and teaching (2)
scientific output per year	very actives	slightly actives and actives	Inactives or no longer active
language of dissertation	local language (8, all German) or English (4)	local language (8: German, Italian or French) or English (7), 1 undecided	local language (11), mother tongue (1, other CH language), English (1)
language of output	English and local language or mother tongue (10), English (2)	English (8), local language and English (6), local language (2)	No output by definition
Output local (CH + linguistic region) or international	All local and international	3 local, 5 international, 8 local and international	No output by definition
contacts to other researchers	most often external contacts	most often internal at home university (residential and visiting), some also external	most often at home university, residential and visiting researchers
stay abroad (done/planned)	2 done, 2 planned	4 planned, 3 done	1 planned, 1 done
plans for the future (academic or non-academic)	7 academic (2 wish to combine with non-academic), 5 undecided (1 rather non-academic)	6 academic, 5 undecided, 5 non-academic	5 undecided, 4 non academic, 1 academic, 3 would like to combine academic and non-academic

Table 16: Characteristics of the three categories

[44] Percentages refer to the total number of publications within each group (column).

9.3 Characteristics of the categories, contextual and individual factors

After this general introduction of the categorisation and the description of the categories along the dimension of the integration into the scientific community, the following sections offer a more detailed look at the categories and their relationship to characteristics of the environment of the doctorate as well as individual characteristics of doctoral students.

While several of the characteristics presented in this section have already been addressed in part B, here they are connected to the different categories, which are also compared with each other. It is important to note that the data at hand does not allow to define causal relationships, and thus what is presented in the following are rather observations of coincidence of characteristics of the doctorate and its environment or the individual doctoral student. The presentation starts with contextual elements and then moves on towards more individual characteristics.

9.3.1 Linguistic, institutional and disciplinary factors

At first sight, it seems that there is no relationship between the identified categories of the doctorate and linguistic, institutional and disciplinary factors – in all categories, there are doctoral students from different linguistic regions and disciplinary orientations. A closer look at the data reveals some differences regarding single dimensions, which seem, however, too small to have an influence on the overall categorisation.

One important observation regards the language of publication and dissertation. A look at the regulations shows that there is no unanimity about the language in which the dissertation should be written. With the exception of Zurich, all regulations contain information about the possible language(s) in which to write a doctorate. In all places, writing a doctorate in the local language is possible, and all regulations foresee also the possibility to do so in at least one other language. In Basel, Geneva and Lucerne, the regulations state that other languages than the local one can be authorised – in Geneva, it is underlined that other languages are only exceptionally admitted, and the defence will be in French. In St. Gallen, the approval of the supervisor is sufficient to write in English, French or Italian. In Bern, Fribourg and Lugano, the possibility to write in English is contained in the regulation. In Bern, it is also possible to write in French, in Fribourg a dissertation can be handed in also in Italian, besides English and the two local languages French and German. In most places, additional languages can be authorised on request.

I have asked doctoral students about the language in which they intend to write their dissertation. Here, a clear pattern regarding the three categories emerges: *workers* usually write in the local language. Doctoral students writing in English are found among the *multifunctionals* and *academics*. Interestingly, among the *multifunctionals*

writing in the local language there are doctoral students from all three linguistic regions, while *academics* only write in the local language when this language is German. All doctoral students intending to write their dissertation in English are enrolled at two universities: Lugano and St. Gallen – those universities who have shown an important presence of English language publications also in the analysis of the field (see 3.2). There are doctoral students from the universities of Zurich and Lucerne who have some publications in English, but they all intend to write their dissertation in German.

This presence of English language might be connected to the institutions' and thus also doctoral students' topics of research: doctoral students writing their thesis in English most often work in the areas of electronic communication (including for example e-learning or projects on the use of information technologies for business), organisational communication or health communication. Only a few doctoral students working in these fields intend to write their dissertation in the local language. People working in the area of mass media all write their dissertation in the local language – which might also be connected to the fact that they often look at the local situation, for example by analysing the coverage of a certain topic in local newspapers or by looking at the history of a specific medium in a national setting.

This pattern could be explained by the structure of the community and the sample: there is an important German speaking community in communication sciences in Switzerland, which is closely linked to the community in Germany, a rather strong community in the field. This community emerges mainly from the field of *Publizistik*, which is by definition interested in mass (media) communication. There is also a communication community in France, however with seemingly less connections to the Swiss context. The university in Lugano does not seem to have many connections to an Italian speaking community, and seemingly Italian is not a strong language in the field of communication sciences.

Thus, one could say that *academics* tend to write their dissertation in a language that gives them access to a wider community while among the other three groups and especially among the *workers*, the local language prevails.

All doctoral students stating that they intend to write their dissertation in English also have publications in English – with the exception of one *worker* who by definition does not yet have any publication, but also is still in a beginning stage of the doctorate. Overall, *academics* usually have publications and presentations both on a local and an international level, in the local language and in English, while *multifunctionals* are more often active only on one level and in one language.

Another characteristic of the doctorate in which differences between the institutions are visible is the membership in scholarly associations. One can express its belonging to a scientific community through such membership. In some cases, as for example in the

German Association of the field of communication sciences, the DGPuK, access is restricted to people who already have given written contributions to the field. The Swiss Association of communication and Media Research SGKM does not know any such restriction, and thus access is open also to doctoral students, who can become individual members of the institution (besides their membership through their institute). Membership in the SGKM, however, is frequent mostly among doctoral students from Bern and Zurich, and there is only one doctoral student from Lucerne and one from Geneva who belong to this association. This distribution seems to reflect the board of the SGKM, which is composed mainly by people from Zurich (including the president and the executive manager), with one member from Lucerne and Geneva. The former president of the SGKM was from Bern. It is interesting to note that doctoral students that are individual members in the SGKM are mainly found among the *external workers* (4 out of 6) and *academics* (4/12) and less among *internal workers* (1/7) and *multifunctionals* (2/16). Regarding the *external workers*, one could probably interpret this official integration into the field's association as a strategy for filling the gap of missing local integration.

9.3.2 The organisational setting of the doctorate

On the normative level, differences regarding the organisation of the doctorate are visible between the linguistic regions, but mainly between single universities. In Geneva, before the introduction of the Bologna model and the Master level – and thus in the case of the interviewed doctoral students –, a DEA was mandatory for access to the doctorate. The doctorate is structured in two phases, at the end of the first period doctoral students have to hand in a report, which is crucial for their definitive acceptance as doctoral students. Additionally, in communication sciences in Geneva there is a doctoral school, which provides a framework for doctoral students. In the German speaking part of Switzerland, the doctorate is rather under-regulated, with the exception of St. Gallen, where doctoral studies are clearly structured, with mandatory coursework and an intermediary report. In Lugano, the situation differs between the institutes within the Faculty of Communication sciences.

With the introduction of the ProDoc programme, some changes are going on in the landscape of the organisational setting. However, at the moment of the interview, only two doctoral students were part of such an institutionalised form of doctoral training.

Participation in a graduate school, thus in a structure that offers moments of training and discussion, with a more or less mandatory character, however, seems not to be linked too strongly with the identified categories. Doctoral students that are part of a graduate school like structure are mostly found among the *multifunctionals,* but also the category of the *workers.* No one of the *academics* is part of a graduate school structure – two of

them, however, are enrolled at the university of St. Gallen, where the doctorate is clearly structured.

Overall, it seems that rather than being used for differentiating the doctorate and its output, the introduction of doctoral school like structures occurs as an answer to on the one hand organisational challenges, for example the high number of doctoral students, or on the other hand external pressures and opportunities, as for example in the case of the ProDoc – money for doctoral training is only granted if some structured organisation is implemented.

9.3.3 Supervision

As has become visible in section 8.1, there are different ways in which supervision is done, and different conceptions about ideal supervision coexist, both among doctoral students and supervisors. Supervision ranges from very close guidance to virtually not existing supervision, and the relationship can be situated on a continuum ranging from a master – apprentice model with a clear hierarchy to a situation of collaboration among colleagues.

It seems that among *academics*, colleague-like supervision is frequent. This is also expressed in the amount of publications co-authored by doctoral students and supervisors. Collaboration is usually strong, and often regards also projects besides the doctorate, but strongly linked to it. However, there are also exceptions – there is one *academic* in the sample who meets his supervisor only twice a year for meetings together with other doctoral students. This doctoral student already worked on research projects for several years before starting the doctorate. He also states that, from what he has done before, he rather feels like a senior researcher, and that people he meets at conferences are often astonished when he says that he does not yet have the formal qualification, the doctoral degree.

As *internal workers* often work as assistants in the area of teaching, they usually have regular meetings with their supervisor, who is most often also their boss. These meetings, however, often concern work-related issues and not the doctorate. When they concern the doctorate they only regard the doctorate as such and are not about a broader integration of the doctoral student in a scientific community, thus for example about publications, conference participations or networking.

Some of the interviewed doctoral students have the same supervisor, which allows comparing their situations. Doctoral students of the same supervisor tend to be in similar situations. Only in the case of one supervisor, the three interviewed doctoral students are part of three different groups – a *worker*, a *multifunctional* and an *academic*. This supervisor, however, states that according to him a doctorate should prepare for different types of careers. Additionally, the worker (who was in a early phase of his doctorate)

communicated soon after the interview that he had decided to abandon the doctorate, and the *multifunctional* is actually a *late starter*. Even though it seems that supervisors tend to supervise doctoral students in similar situations, also individual differences appear – for example in the quality of supervision perceived by doctoral students, or in the frequency of supervision meetings.

9.3.4 Contacts to other researchers

Most *multifunctionals* and all *academics* have done at least part of their publications or presentations with at least one co-author. An interesting difference, however, applies: all but one *academic* have publications or presentations together with their supervisor, while only part of the *multifunctionals* do so. The exception among the *academics* is a particular case: the doctoral student is enrolled for the doctorate abroad. Another *academic* with only one publication with the supervisor is employed by a research laboratory of a private company and the university simultaneously and publishes among others with the director of the research lab, who is, however, not his supervisor. All *academics* have co-authored papers and presentations also with other scholars besides the supervisor, including doctoral students and senior researchers. Among the *multifunctionals*, co-authored papers are most often written with other doctoral students or other senior researchers belonging to the same institute.

Most doctoral students have contacts with other researchers besides their supervisor. Here, too, some patterns distinguishing the three categories emerge. *Workers* usually have contacts at the university where they are enrolled for the doctorate. While in the case of the *external workers*, contacts seem to be restricted to the regular staff members of the university, *internal workers* also report about contacts with visiting scholars. An explanation of this distinction could be that *external workers* are not physically present at the university, and thus are less informed about what is going on and also less likely to get in contact with visiting scholars. Also *multifunctionals* most often report about contacts at their home university, both with residential and visiting scholars. Some of them, however, also tell about external contacts. Among *academics*, contacts to scholars at other universities are most frequent.

A possibility of establishing contacts to other researchers and deepening one's network is given by stays abroad. These stays are most frequent among the *multifunctionals*, where nearly half of the group has already been abroad for some months during the doctorate or plans to do so. Two of the *academics* have been on a stay abroad, other two doctoral students in this group plan to do so. One *academic* states that even though he has not been on a stay abroad, he feels like he had, because he has regular contacts to other institutes, and regularly visits them for shorter stays. All other *academics* have

done their previous studies at another institute than where they are now doing their doctorate.

9.3.5 Individual factors: characteristics of the doctoral student

To conclude the description of the categorisation, this section looks at individual characteristics of the doctoral students. On the one hand, it presents demographic elements, such as age or gender, on the other hand, it addresses motivational aspects and at the meaning the doctoral students attribute to the doctorate. As has been shown, doctoral students often start a doctorate without really knowing what they are on to, and without clear ideas for their future after the doctorate. During the doctorate the meaning attributed to both the process and the degree develops. The meaning attributed by the doctoral student and the supervisor seems, to some extent, to be connected also to the situation of the doctoral student. However, it is not possible to say whether the attributed meaning determines the situation, or whether the meaning is shaped by the situation.

Years between first degree and doctorate

Generally, it seems that younger doctoral students are more likely to become *academics* or *multifunctionals/late starters.* Table 17 shows how doctoral students are distributed among the categories according to how quickly they started their doctorate after their first degree. Nine of the twelve *academics* started their doctorate within the first two years after the doctorate; among the eleven doctoral students starting the doctorate more than three years after their first degree, there are three *academics* – all of them were active in research between first degree and doctorate –, three *multifunctionals*, and five *workers*.

years between first degree and doctorate	**worker**	**multi-functional few publi-cations**	**multi-functional**	**multi-functional late publi-cations**	**acade-mics**	**total**
0	1		2	1	5	9
1	5	3	2	1	4	15
2	2	1	2	1		6
3					2	2
4	2			1		3
6					1	1
7			1			1
11	2	1				3
15	1					1
total	*13*	*5*	*7*	*4*	*12*	*41*

Table 17: Category vs. years between first degree and doctorate

Motivations for doing a doctorate

The reasons why somebody decides to do a doctorate vary, as has been shown in section 6.1. Differences between the categories are visible: *workers* in my sample do a doctorate most often because they like learning, because they enjoy doing scientific work or want to deepen a topic. Two of them do a doctorate in order to reflect previous professional experience. Out of the 16 *multifunctionals*, nine first mention cognitive reasons (two of them do the doctorate for reflection), three rather slipped into the doctorate by chance, to one it was proposed by the supervisor, one wanted, at the beginning, to pursue an academic career, one did not see an alternative and one wants the degree in order to get more interesting job positions. The two doctoral students doing a doctorate as challenge and for personal vanity are in the group of the *academics*. Out of the remaining ten *academics*, seven mention cognitive reasons, one was encouraged by the supervisor of his master thesis, one needs the degree in order to be able to teach and one has already done research before, but sees the doctorate now as chance to get explicit research training. So overall it seems that unclear motivations or the doctorate as only alternative are connected with low scientific integration.

Plans for the future

Plans for the future seem to be linked with the type of doctorate: People aiming at an academic career are found mainly among *academics* and *multifunctionals*. Only one of the *workers* wishes an academic career – at the moment of the interview he was rather at the beginning of his doctorate. One of the *workers* states that he would like to stay in the academic environment, but that, given his missing participation in the scientific community, he sees hardly any possibility for a scientific career, and thus would like to work rather in administrative roles. There are no *academics* that clearly prefer a non-academic career.

Thus, overall it seems that people with plans for an academic future are rather found among those that also actively participate in an academic community already during the doctorate. Whether their plans make them participate more actively, or whether active participation shapes their plans, however, remains an open question.

One could think that those who are not participating in an academic community and do not aim at an academic career probably are unhappy about their decision to do a doctorate. This, however, does not seem to hold true. When asked whether they would again decide for doing a doctorate, a large majority of the respondents answers with yes, among them also people clearly aiming at a non academic career. Thus, also among the doctoral students, the doctorate is perceived as something that allows and is useful both for a future career inside and outside academia.

Gender differences

Even though it is not in the scope of this thesis to discuss gender issues in doctoral training, it is striking to look at the distribution of male and female doctoral students among the sample. It is absolutely clear that my data do not allow making general assumptions, but, however, the observation of a certain tendency suggests itself. The sample consists of 18 male and 23 female doctoral students. While among the *multifunctionals,* there is the same number of male and female students, the *workers* show a clear dominance of female doctoral students. Among the *academics* some more male doctoral students are found.

When splitting up the *multifunctionals* into the three sub-groups described above, the differences between male and female doctoral students become even clearer (Figure 14). While in the sub-group of the *multifunctionals* that are most similar to *workers*, those with *few publications*, there is a clear overrepresentation of female doctoral students, the contrary holds true for those most similar to *academics,* the *late starters.*

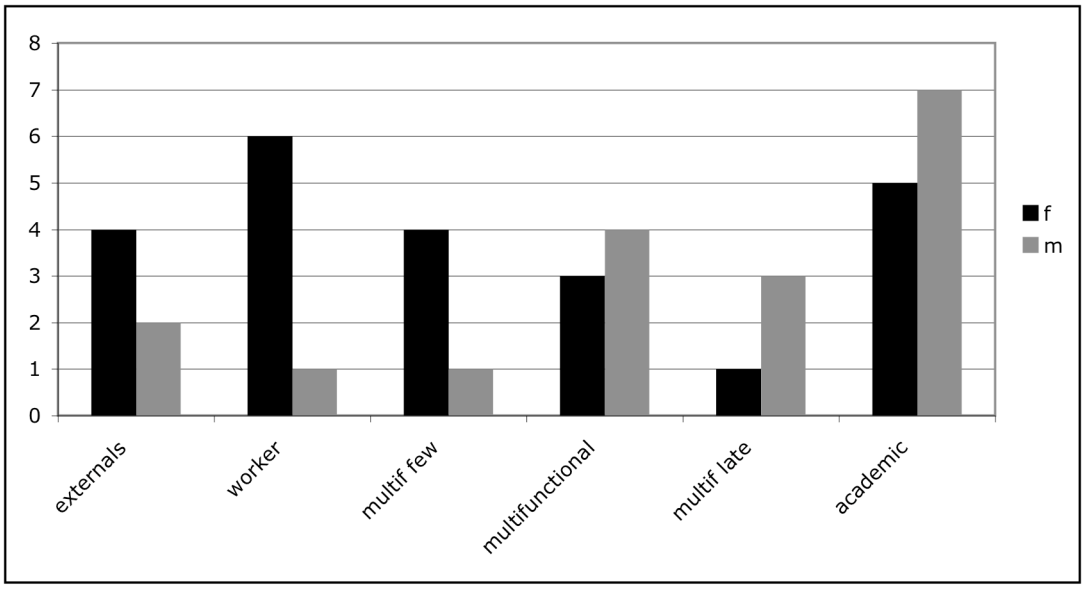

Figure 14: Gender distribution among the sample (N=41)

This suggests that, overall, male doctoral students are more active participants in a scientific community than female doctoral students, which might also be used as an explanation for the often observed under-representation of female scholars in the higher levels of the academic profession (see for example Lind 2004). But why are male doctoral students in my sample more active than female doctoral students and thus are less found among the *workers*? My data allow only limited analyses, but some distinctions between the 18 male and 23 female doctoral students in the sample appear.

A first interesting difference between male and female doctoral students appears when looking at the educational background of their parents. This information was available for 12 female and 12 male doctoral students. Even though numbers are small, a difference is visible: while among the 12 female doctoral students, in 5 cases at least father or mother has concluded a university degree, this is the case for 8 among the 12 male doctoral students. The three doctoral students with a parent with a doctoral degree are all male – two of them *academics* (in both cases the father is professor), one is a *multifunctional* (his father is already retired).

Also regarding the time elapsed between the first degree and the doctorate, a gender difference appears: while 8 out of the 23 female doctoral students have started their doctorate only at least four years after their first degree, all but one of the 18 male doctoral students began a doctorate within three years after graduation. As was shown above, short time between the first degree and active participation in the community seem to be connected.

This might also be reflected in the motivations for doing a doctorate. Female doctoral students starting their doctorate several years after their first degree often indicate the wish to deepen a topic or to reflect their practical work as the reason for doing a doctorate – and thus are more likely not to pursue an academic career and to go back to their previous work after the doctorate or at least to wish to combine elements of it with an academic career. Reflection of one's own professional activity with the aim of improving this activity probably also leads to more interaction with professionals than with an academic community, and thus to a lower integration into the scientific context.

Generally, more than half of all doctoral students state that they feel at least partially like being part of an international scientific community. Among male doctoral students, this share is, however, higher than among female doctoral students. Male doctoral students also seem to be more proactive when it comes to contributing to the scientific community: Female doctoral students most often write their publications and conference papers with one co-author, while among male doctoral students single-authorship is more frequent. In multi-authored publications and presentations, male doctoral students appear more often as first author than female doctoral students, even though here the difference is less salient.

9.4 Short conclusions

This chapter has brought some structure in the broad variety presented in the previous part, by introducing a categorisation of typical situations of the doctorate in communication sciences in Switzerland. This categorisation is mainly built on the dimension of scientific integration, which allows also covering other aspects. Some distinguishing characteristics have been identified.

Overall, the influence of linguistic and disciplinary differences seems rather low; some difference according to the institution can be identified. The type of supervision seems to be a distinguishing element between the categories. Differences are also visible in contacts to other researchers and in individual factors, including the time elapsed between the first degree and the doctorate, motivations for doing a doctorate and plans for the future. Also some gender differences, probably connected to the former factors, apply.

While in this chapter, the categorisation and its characteristics have been presented, the following chapter is interested in understanding why doctoral students end up in a particular situation, and whether and how changes during a doctorate occur.

10 Doctoral pathways in Swiss communication sciences

The above chapter has presented three categories of the doctorate in Swiss communication sciences. These categories represent general descriptions of possible situations of doctoral students. When looking at them, some questions arise: Which are the factors influencing the situation of the doctoral student, i.e. why does a doctoral student end up in a specific situation? Which are the crucial moments in the doctoral process that determine the model? Is it possible to change between categories? How? To sum up: What types of pathways are found, and how can they be explained?

My data does not allow making statistically tested statements to answer these questions. However, a more detailed look at single pathways reveals some interesting patterns and allows making some observations about differentiation and crucial moments in the Swiss communication doctorate. This is the aim of this second chapter of the third part of this text. First, some elements of a framework for the description of doctoral pathways are presented, followed by the description of four individual pathways of doctoral students. Finally, the framework is applied to the study at hand: observations about the interaction between the doctoral student and the doctoral environment in Swiss communication sciences are made.

10.1 Elements of a framework for describing doctoral pathways

The doctorate can be seen as a constellation where an actor (the doctoral student) enters into an environment (the university, department or institute where he writes his doctorate, including the supervisor) and starts interacting with this environment. On the basis of this very general assumption, in this section I elaborate some elements of a framework that allows describing pathways of doctoral students.

Both the actor and the environment have beliefs and meanings they attribute to the doctorate. Beliefs about the doctorate include beliefs about the process and about its output. They regard questions such as: What is learned in a doctorate? How is a doctorate organised? Is classroom teaching necessary in a doctorate? Should access to the doctorate be restricted? What requirements should a doctoral student fulfil? Are doctoral candidates students or employees? Should doctoral students fulfil other duties besides the doctorate? Should doctoral students get in contact with a wider scientific community? Is it possible to present in conferences and publish results already before finishing the doctorate? How should a doctoral thesis look like? What is the supervisor's role? Are there possibilities for doctoral degree holders outside academia? What is the academic profession? Part of these beliefs are manifest in reality and rather stable, for example in regulations or organisational structures, while others are implicitly present and subject to change and re-negotiation.

The decision to do a doctorate is characterised by bounded rationality (see for example Simon 1991). The potential future doctoral student has only limited information available both about what it means to do a doctorate and what a doctorate is useful for. He might have read the regulations and probably even talked to other doctoral students or doctoral degree holders, but it is not possible for him to know what expects him when he decides for the doctorate. Thus, most doctoral students start their doctoral journey with unclear ideas. Equally, also supervisors do not have unlimited availability of information regarding the potential doctoral student when deciding about admission.

In a situation of bounded rationality, beliefs – or representations (Simon 1991) – are important. Beliefs are based on current knowledge and experiences of an actor. While at the beginning of a doctorate, a doctoral student has very limited information about the doctorate and possible future pathways, during the process he starts getting to know it better. A doctorate is a process that includes learning-on-the-job, not only regarding contents, but also regarding the profession. Once entered in the doctoral environment, the doctoral student's ideas and beliefs about the doctorate start evolving. The doctoral student starts understanding at least parts of the conception his environment has of the doctorate, and starts, to a greater or lesser extent, assimilating to this conception.

The beliefs of the environment regarding the doctorate are part of the university's wider organisational culture. They also include the role of the doctorate and of doctoral students in the organisational setting, thus for example whether doctoral students are employed as assistants and to what extent they fulfil tasks that are not directly related to their doctorate. These roles are influenced by the beliefs about future careers of doctoral students – for example, can they stay at the university after finishing their degree? – and by the corresponding beliefs about what doctoral students are trained for.

These beliefs can be flexible or not, they leave room for interpretation to a greater or lesser extent. They allow for individual adaptation of the doctoral process to a varying degree. Where the organisation of the doctorate is clearly prescribed by a regulation defining many aspects of it, from admission to graduation, the room for interpretation is lower than with a regulation that includes only a few general dispositions.

Also supervisors, as part of the environment university, but also part of the broader scientific community, have beliefs about the doctorate and future possibilities of doctoral degree holders, and here as well flexibility and room for adaptation vary. For example, a supervisor can clearly state that he trains only doctoral students that want to pursue an academic career, and he has a very clear idea of what an academic career means and what is necessary to reach it, while others might accept doctoral students with varying aspirations and also levels of knowledge and skills, and aim at training them for a broad variety of future careers.

During the doctorate the beliefs of the doctoral students are confronted with the beliefs of the environment – in a situation where power is distributed unevenly – and with reality. In this interaction, the beliefs of the doctoral student evolve. He learns what it means to do a doctorate by doing it – and thus his idea of the doctorate is shaped by the local situation. He builds a meaning of the academic profession by observing his direct environment. Additionally, he personally develops and starts understanding his own capacity and inclination towards academic work, and starts planning his future.

Many doctoral students also get in contact with an environment that goes beyond the organisational context and the supervisor – with a scientific community. Through interaction with other doctoral students and senior researchers, they get insight into other realities, and get to know other explicit and implicit beliefs regarding the doctorate. They might understand that the situation they experience is not the only possible way, and that other solutions would probably better suit their needs. Thus, this wider environment might also influence the beliefs of the doctoral student.

Besides doing a doctorate and being inserted in an academic environment, doctoral students are also individuals with a private life outside academia. A doctorate is often done in an age in which one might start thinking of having a family, start caring about having a secure position, about financial issues. These considerations might influence also the image a doctoral student has of the attractiveness of the academic profession.

In the interaction of the doctoral student with the doctoral environment and reality, there is potential for conflicts. They emerge when beliefs of actor and environment or beliefs and reality are not compatible. This might for example be the case when a doctoral student has started his doctorate with a supervisor who was in need for somebody who provides good work as teaching assistant and in administration, and then during the doctorate the doctoral student discovers that he would like to do more research and to insert himself in an international community: or when a doctoral student started a doctorate aiming at an academic career and then discovers that his competencies are rather in other areas than what would be requested for this type of career.

The potential for conflict is high when beliefs and/or reality are incompatible and inflexible. While the environment can be seen as rather stable – doctoral regulations or the ideas of a supervisor for example hardly change within the 3-5 years of a doctorate – the beliefs of the doctoral student are in a constant process of change ad development, based on his interaction with this environment, on the experiences he makes during the process.

The cost of reversing decisions taken in the doctorate is often high – once a doctoral student is enrolled for a doctorate in a specific institution and with a specific supervisor, he hardly can change this setting. Thus, when conflicts arise there seem to be two main possibilities: either a solution is found within this specific setting (for example additional

support through a second supervisor), or the doctoral student leaves the environment, which usually means that he abandons the plans for doing a doctorate. Conflicts can be of varying intensity, and they are not always made explicit.

This rudimentary framework of the doctorate as an interaction between the doctoral student and his environment serves now as a basis for the description and interpretation of doctoral pathways. In the following section, four concrete examples from the sample are presented, with particular attention to the beliefs of both doctoral students and the environments.

10.2 Examples of interesting pathways

The examples presented in this section include pathways that seem to be particularly interesting, pathways that do not seem to be linear and where conflicts have emerged. They include doctoral students in different situations and stages of their doctorate, and again display the broad variety of the doctorate in Swiss communication sciences. In order to respect privacy of the respondents, names and some details in the descriptions are changed.

The described examples are: Daniel, an *academic* who, despite his typically academic doctorate, wishes to leave academia after his doctorate; Paula, a *multifunctional* experiencing challenges because of lacking supervision, but who overcomes this lack through other strategies; Marc, a *multifunctional* that has started intense publication and presentation activities in a late stage of his doctorate; and Monica, a *worker* combining her doctorate and assistantship position with family duties.

10.2.1 Daniel: an *academic* wishing a non-academic career

Daniel has already finished the conceptualisation of the most important part of his dissertation, which consists in a theoretical discussion. At the moment of the interview, he stated that one fourth of the text was written and the remaining parts were ready in terms of idea and material. His organisational integration and publication and presentation activity situates him in the category of the *academics*.

Born in a family for which it is common to go to university, Daniel enrolled for a neighbouring field of communication sciences, and did communication as a minor. He describes his life as a student as intellectually challenging and satisfying:

> I have studied for a long time, I fully immersed in [the field of my major], especially in theories, I was fascinated by them. I was very active, among us students we did free tutorials, it really was the life of intellectuals, what we had. I enjoyed this very much. After lecture we went for a beer and continued the discussion, about critical theory and so on. I had a very free study time. *Doctoral student (Daniel)*

He was financially sustained by his family, lived in flat share with other students, and had some casual jobs from time to time. He also worked as a student assistant in teaching. Towards the end of his study period, he went abroad for a year, where he prepared his thesis.

Daniel was so much immersed in this intellectual life that it was clear for him that, once finished his studies, he wanted to go on with a doctorate. He would have liked to do it in his main field of studies, but did not find any job position with a professor he would have appreciated as supervisor. He then found this opportunity in communication sciences, with a professor whom he had known and appreciated already during his studies. During the first two years, he was employed on an empirical research project, and did some teaching activities besides. At the moment of the interview, the research project is finished, and his activities cover the areas of research, teaching, student supervision and administration.

His dissertation is strongly connected to the research project, but with a different focus: while the project was mostly empirically oriented, his dissertation provides a possible theoretical background to the study. He appreciates the freedom given to him by his supervisor:

> What I appreciate about her is that she makes this possible, she does not force me into her theory, into the field itself, but she gives me freedom. I have worked deeply in the field within the project, with these methods, I had to trim back my theoretical aspirations, but now in the dissertation I can let them out. *Doctoral student (Daniel)*

He also states that he does not want to be supervised too closely – he rather experiences this as confusing, as he has very clear ideas about what he wants to write. He meets his regular supervisor at most twice per year, and he has sporadic meetings with a second professor, who supervised his master thesis.

His supervisor also organises doctoral colloquia with all his doctoral students. Daniel considers them as useful, even though he says they usually don't give him input regarding the content of his dissertation, as his topic is too narrow, too specialist. He rather uses them as "forum for learning to argue, to defend".

Daniel's publication list contains 15 entries, published or presented between the year in which he begun the doctorate and the year of the interview, his fourth year, with a clearly increasing tendency. Most output stems from the last year and is related to the research project. He writes most publications together with co-authors, among whom often the supervisor, while most conference presentations are single-authored.

But even though Daniel gives presentations at conferences of communication associations and publishes in journals and books in the field, and even though he is member in associations in the field, he states that he does not feel like belonging to the

community of communication sciences. Theoretically and methodologically he feels like being too far away from the main paradigms in communication sciences – at the same time, he does not feel like belonging to his former field of research anymore. He also expresses some criticism towards the field of communication sciences.

Daniel states that he started his doctorate with a big idealism regarding science, and then recognised that academic work contains much political and strategic aspects:

> I now rarely can come up to the scientific ideals I have, because the constraints are too big. (...) During undergraduate studies, I could explore my limits. Now I have the impression to get to my limits in terms of performance, but not intellectually. Today I write things and argue in a way that before I would have considered too pragmatic and unscientific. (...) I have become pragmatic, that's frightening, one thinks that it goes on, that one could flower out intellectually when employed in academia, and here I just see that it's a job like many others, where you have to present results and can not question everything as much as you probably would like to. *Doctoral student (Daniel)*

For Daniel, the academic profession has lost a lot of the brightness it had in his view, he now considers it as a job that is similar to others – with interesting elements, but also tasks one is less interested in. During the interview, he states that he would prefer a career outside academia. He confirms this in the follow-up e-mail a year after the interview. The main reasons for this decision, as he explains it, are not in the above-described disappointed ideals. He decides against an academic career for financial reasons – he plans to start a family – and because he recognises that career possibilities are low in the field. Additionally, he finally wants to leave academia and experience work in a non-academic context.

As he states, he took this decision rather late in the doctorate, and acknowledges this as problematic – had he made this step earlier, he says, he could have done a less intensive doctorate and just tried to get the degree as quickly as possible. When asked whether he would again do a doctorate, he answers with yes, but says that with what he knows now he would try to finish it in two years, as he knows that he does not want to pursue an academic career. Nevertheless, he doesn't regret having put that much time and energy in the doctorate, he says.

Daniel's supervisor is convinced that a doctorate should prepare both for an academic career and for a professional future outside academia. He also acknowledges that ideally two different types of doctorates would be distinguished. Daniel's supervisor organises doctoral colloquia together with other institutes, and also promotes a sane spirit of competition among his collaborators, by publicly complimenting people on their successful presentations and publications.

In the case of Daniel, a conflict between his original belief regarding the academic profession and the reality he lived in his concrete environment, in the project, emerges. When starting his doctorate, he expected to continue with what he experienced as research in his studies in a neighbouring field of communication sciences. But he was confronted with a different research culture, probably influenced both by the field's characteristic and by the fact that he worked on a research project with an external sponsor. Additionally, he went through a process also in his private life; he plans to have a family. In his direct environment, he perceives the pyramid of the academic career, and he also sees that in pure financial terms an academic career in communication sciences is less attractive then to be employed outside. Through the work on the research project he has seen an alternative to the academic career: he aims at becoming one of those individuals they have researched in the project.

This example shows that even what might seem as a typical doctorate preparing for an academic career – with a high initial motivation and interest for doing intellectual work, a job position including collaborative work on a research project closely connected to one's dissertation, a supervisor that opens the way to the scientific community and with steadily increasing numbers of output – can lead to the decision to leave academia.

10.2.2 Paula: a *multifunctional* overcoming lack of supervision

Paula is writing her doctorate at the university where she did her undergraduate studies in communication sciences. In terms of publication and presentation activity and organisational involvement she is a *multifunctional*. At the moment of the interview, she already had handed in her dissertation to her supervisor for the final reading.

It was only towards the end of her studies that Paula started considering the idea of doing a doctorate. In a seminar, she was confronted with a specific type of research and realised that this was something she would like to do. She did her master thesis with a professor she appreciated much. He explained to her what a doctorate is, and she thought that she might like to do it, because this would allow her to go on discovering and exploring interesting topics. She thus signalled her interest to him, and when he had a free assistant position, he informed her.

During her studies, she did an internship in a private company. This was a positive experience, and she was also offered a permanent job position. But she wanted to finish her university studies, and when offered the assistant position she decided to accept and do also a doctorate with her Master thesis supervisor.

Inspired by seminars she had attended during her studies, Paula already had an idea about the area in which she wanted to do her doctorate. Even though she knew that the topic she wants to study was not exactly correlated with her supervisor interests, she proposed it to him, and he accepted. She states that from the beginning on she knew that

she would not have got much support regarding content, as she was going in a direction that he was not strongly skilful. She thus started on her own, without clear guidance:

> For the first months, I've searched on my own, in the library, in the Internet (...). I've started reading some things, I've seen much literature of every kind, afterwards much of what I've read showed not to be useful, not corresponding to what I wanted to do. (...) I had not really clarified what I wanted to do; it was only vaguely that I understood what I was interested in.
>
> *Doctoral student (Paula)*

After some months, a new professor started working at the institute where Paula was employed. Soon she realised that he was working exactly on the topics she was interested in, and thus she started talking to him.

She also asked for a scholarship for a stay abroad – she was sure that when going on working as an assistant and without clear guidance in her doctorate, she would not be able to do a doctorate. By her own initiative she contacted five of the most important professors in her field – and had the chance that she received a positive answer from the professor in whose work she was interested most. She was granted the scholarship and went abroad, in an English speaking country. The experience of working with this professor has been crucial for her doctorate: she tells that it was during weekly discussions with him that she defined her topic. Paula is convinced that without this stay abroad she would never had managed to do her doctorate.

During her stay abroad, she also defined the methodology of her dissertation. Thus, when she came back to her home university, she had quite clear ideas about how to proceed. For some time she was very busy with her work as an assistant, which she continued after her stay abroad. She covers tasks in the area of student, teacher and course administration and coordination. Together with a post-doc colleague she applied for and received funds for a research project. This project is close to her dissertation, so there are synergies with her doctorate, but the project benefits more from her previous experience in the doctorate than vice versa. Overall, she states that she likes her job, but that it is much time consuming, more than the 70% stated on her contract indicate.

With some delay she managed to do the empirical part of her doctorate and then finally to write up. During this process, the new professor working on topics similar to hers guided her. With him, she discussed the methodology, but also the structure of the thesis. He read her chapters step by step, and gave her useful advice. This professor became her second supervisor. Paula is convinced that her official supervisor is not aware of the extent to which this professor guides her. She discussed the structure of the text with the official supervisor, and gave him the final text to read. At the moment of the interview, he was reading, and Paula was convinced that she would receive very valuable input from him regarding details and structure.

With her stay abroad, Paula started building an international network in her field. She established contacts to several senior researchers, but also doctoral students through participating in summer schools and conferences.

> I think conferences are very interesting, you get to know other people, you can discuss, and you listen to presentations that sometimes – not always – are interesting. It's a way of confronting, when you present. The idea is to say I present, let's see how they react, what criticism I receive. (...) I think it's useful, interesting, and it's also part of your CV. If you want to make your career, publications and presentations help. Additionally, it's always a moment of distraction as well. (...) To go to conferences allows me to talk about my topic to other people who work in this field. *Doctoral student (Paula)*

Paula says that she feels like belonging to a scientific community, in a specific sub-field of communication sciences with its own identity. She is convinced that participating in conferences and summer schools helps building this feeling of belonging.

Paula would like to stay in an academic environment after her doctorate. She really likes doing research, and teaching is something she is "not too much averse to". At the moment of the interview, she says that she would like to go abroad, preferably to the country where she had spent her stay abroad. She appreciated the way of doing research there. Her doctorate was very much inspired by this tradition. She also answered to the e-mail questions asked one and a half year after the doctorate. At this moment, she has concluded her doctorate and is employed on a post-doc position by the same university. She plans to ask for a post-doc scholarship for going abroad.

When comparing Paula's experience with what her supervisor says about the doctorate and supervision, two completely different accounts appear. From Paula's story, one could think that her supervisor does not provide much supervision. The supervisor himself, however, seems having quite clear expectations towards his doctoral students and guiding them through the process. In Paula's case, the problem might be what she identified herself: the fact that her topic and theoretical and methodological orientation do not correspond to his way of doing research. Indeed, another doctoral student of this same supervisor tells that he is supervised and guided closely, and that he has regular and interesting discussions about his doctorate with him.

In Paula's pathway, interesting changes in beliefs as well as conflicts are visible. She started her doctorate without clear ideas. In the beginning, she was erring through the literature without much guidance. The importance of supervision in this moment is visible – it was only when guided by a senior researcher that she managed to clarify her ideas and build a project. Through the work with this person and with other senior researchers during her stay abroad, she experienced a way of doing research she was attracted by. Through this positive experience, her plans for the future were formed, she

decided that she would like to stay in the academic environment, and ideally go to the place where she made most of these positive experiences.

The case of Paula is a case where the influence of the broader environment, beyond the university and the supervisor, is visible. It was through interaction with this broader environment that she had insight to a perception of the academic profession that she was attracted by. Thanks to this broader environment, including the second supervisor and the international community, she could fill the gaps she experienced in the local context, both in supervision and in the possibility of exchange with other people working on similar topics. Through her own initiative, she contacted other researchers and thus resolved the conflict between her beliefs about the doctorate and the situation she experienced with her supervisor, in a way that did not require any official changes in the doctorate.

10.2.3 Marc: from *multifunctional* to *external worker*

Marc is a doctoral student who switched from being a *multifunctional* to being a *worker* and finally is in the situation of an *external worker*: he left his job at the university. At the moment of the interview, he was analysing data for his doctorate. A draft of the theoretical part of his dissertation was already written. He expected to finish his dissertation within one and a half year after the interview.

Marc has studied communication sciences because he was interested in media and languages, but did not want do become a journalist. However, after two years he started working in journalism, and also found a trainee position directly after the end of his studies. Once this traineeship was finished, he had difficulties to find another job position. So he came across the announcement of an assistant position to which he applied. He was offered the job and accepted, but not really convinced:

> Nearly a year after graduating from university, I went back to academia. I never really knew if I wanted this, but for lack of alternatives I thought "now let's do this doctorate", then I've started here. *Doctoral student (Marc)*

So this position was not his first choice. However, he is truly interested in his doctorate, and likes doing research. But after working at the university for a while, he

> realised (...) we had some problems at the institute, in terms of resources, the job positions were reduced by the university. *Doctoral student (Marc)*

Thus, he decided to look for other opportunities as well, and quite soon found a position in journalism. He reduced the percentage of his assistant position to add the journalism position, thus overall covering a 100% job. There was not much room left for his dissertation, but nevertheless he tried to carry on. After a while, however, he decided to leave the university and to concentrate on his job as a journalist and on his dissertation.

When asked about supervision, Marc states that there was and is no supervision. He regularly met the supervisor in the corridor, but there was no real discussion. However, he acknowledges that his supervisor has been very helpful in providing contacts for interviews, which much facilitated access to people.

Marc did not want to get in contact with other senior researchers and he did not discuss his dissertation with other doctoral students and colleagues in the institute either. In his perception, a dissertation is a private thing:

> That's a job that you do on your own. Sure, I could look for somebody, there are people I could contact, but this would be a big effort, and I don't know what would look out from it. And there's also the risk that people start interfering so much that you do no longer know where to go. Thus probably it's also the easiest way to say I do it on my own.
>
> *Doctoral student (Marc)*

He also says that he is no longer interested in being part of the scientific community. He used to have several contacts, especially with doctoral students from other universities, and he also did some publications at the very beginning of his doctorate. At the moment of the interview, however, he was no longer an active participant in the scientific community.

Marc also had developed a rather negative image of the academic profession. On the one hand, he observes that most of the work done by academics is teaching and administration, while he would be interested in research. On the other hand, he sees that there are only limited career possibilities, and he says:

> It is probably easy to get a post-doc position, but after it gets difficult, it's a small world, corrupt to a certain extent, there are many insider relationships. For how I perceive it, there is also a net of intrigues that is woven, and I do not want to participate in this.
>
> *Doctoral student (Marc)*

He left his position at the university, but still continues his doctorate, even though he states that a doctorate is not useful except for an academic career. He says that he does his doctorate because he is intrigued by the topic.

In the interview with Marc's supervisor, a discrepancy between beliefs and concrete opportunities emerges. The supervisor clearly states that his supervision is scarce, and that he would like to have more resources that would allow him to do better supervision. However, the institute overall, seems to be in a rather precarious situation in terms of resources.

In Marc's case, the importance of beliefs that are built on the basis of his own experience of reality is clearly visible. The decision to work as an assistant and to do a doctorate was not his first choice; he rather did it for lack of alternatives. He did not have any clear guidance by his supervisor. Thus, Marc's experience of the doctorate, connected also to

his experience as an assistant, is rather negative. It is also interesting to look at his publication activity: he had three publications in the year before he officially started his doctorate, thus probably started with the belief that doing a doctorate includes also participation in a scientific community. Local constraints – especially the high workload – and missing guidance and supervision then gave him a different picture. Additionally, he believed that it was his own task to do a doctorate, and therefore did not seek for guidance elsewhere, as for example Paula did. His image of the academic profession is rather negative, probably also because his environment was characterised by decreasing resources and difficulties to get funds for projects. Finally, after initial reluctance at the beginning of his studies, Marc has been attracted by journalism, and continued having employments in this sector. Thus, he could also build ideas about this alternative profession, which seem to be much more positive than his beliefs about the academic profession. As soon as he had the chance to change working environment, he did so.

10.2.4 Monica: a *worker* with family duties

At the moment of the interview, Monica had quite clear ideas about her doctoral project, and planned to start data gathering. She was employed by a university, but had not yet done any publications, and so belonged to the *workers*. One year after the interview, in the e-mail questions, she stated that she had not yet started data gathering, but in the meantime she had prepared three publications, two of them out of a project, and thus started to participate to the scientific community.

When Monica started her doctorate, she had already gathered quite some professional and life experience. After her first year of studies, she worked in a private company, where she had the opportunity to attend a two-year professional training. Two years later, she went back to university. After graduating, she started the necessary didactical training for becoming a teacher, but soon her daughter was born and the family moved to another canton. As teacher training is regulated on the cantonal level, her previous training was not accepted. In the following years, she helped her husband in his job and was at home with her three children. From time to time, she did some teaching at professional schools.

Once the children were older, Monica decided to look for a job position. Already at the end of her studies she had the idea to do a doctorate, but then the circumstances did not allow for it. She carried on with her the wish to do a doctorate. So she asked at the nearby university for a job position. Thanks to her linguistic competencies, she was immediately offered a contract as a translator, and after a year she was employed on a project and started her doctorate. Her dissertation proceeds rather slowly:

> As I have quite a lot of other tasks to fulfil, and as I am also the mother of three children, the dissertation was always – well, the daily exigencies always come first, and then you don't

> have the intellectual energy to occupy yourself with demanding things.
>
> *Doctoral student (Monica)*

When asked about the role of her supervisor, Monica says that he pushes her to go on with the doctorate, and gives inputs from time to time, but she notes a lack of continuity. She attributes this lack to the fact that she is working on a topic that is not central to the work of her supervisor: he is personally very much interested in it, but is not active in research in this field. She appreciates it to discuss with him, and she would wish to have more guidance:

> I'm working on so many things contemporaneously. This has advantages, but often it also has the disadvantage that you are somehow lost, especially in this moment, I think as a doctoral student you need, well I need quite a lot of help to go on. I think I just do not yet have the independence to ask the right questions. *Doctoral student (Monica)*

Monica also sees that her colleagues who work on research projects with the supervisor receive more guidance. They do their dissertations in the area of these projects, and have much more discussions about the topic. They also regularly publish together with the supervisor. Monica also does not feel like belonging to a scientific community, as she is rather lonesome with her topic, at least in the direct environment of the university.

Thanks to a research project she works on, Monica has contacts to other researchers, especially to a professor from another university who is an expert in the field of her dissertation. In the interview, her supervisor clearly stated that he counts on this other professor for support in supervising her dissertation. From what Monica tells this seems to happen. The project team seems to fill part of the gap of her thematic isolation at the university.

When asked about her future, Monica says that she would like to stay in the academic environment. She says that she does not explicitly aim at a career as professor; she also thinks that she will probably be too old when finishing her doctorate. She wants to build on her doctorate, to see what possibilities there are. In the answers to the additional e-mail questions a year after the interview, she states that she plans a stay abroad.

Monica's example shows that it is possible to do a doctorate in the field of communication sciences also when coming from a different background – and that this different background can be an advantage when applying for a specific position, as in her case her linguistic competencies were asked. It equally shows that one can do a doctorate in communication sciences after a break of several years and while having family duties – if both the doctoral student and the supervisor accept that the doctorate might take more time, and that often there are moments where other things come first, thus when supervisor and doctoral student allow beliefs that are probably different from those in other cases, but suit reality in the concrete case.

In Monica's case, a complicating factor seems to be the fact that her topic is not directly linked to a research project or to her supervisor's main research topics. Even though her supervisor is personally very much interested in her topic, he often seems to forget about the fact that she is writing a dissertation in this field and needs some more guidance.

10.3 The interaction between actor and environment

It is the aim of this section to conclude the presentation of the results, categories and pathways by trying to understand how differentiation in the Swiss communication doctorate occurs. In order to do so, the above-presented framework is applied to the studied case, thus interaction between the doctoral students and their environments in Swiss communication sciences is addressed.

The observations made in this section originate in the above-presented results. Even though my data does not allow making general statements based on statistical analyses of a large sample, there are patterns that are observed repeatedly, and therefore can be interpreted as typical of the Swiss communication doctorate. Thus, observations about critical choices and crucial moments in the doctoral process are made.

This section represents therefore a summary of the results under the perspective of the interaction between doctoral students and their environments. This is done by addressing the flexibility of the environment, the compatibility between actor and environment, the influence of contextual factors and changes in pathways of doctoral students.

10.3.1 Flexibility in the environment

Doctoral environments differ in the degree to which regulations, rules, values and norms are flexible and in the extent to which they leave room for interpretation of the doctoral degree and process. Elements of environments can be more or less flexible at different levels, ranging from the organisational level to the individual supervisor. This flexibility can also be more or less formalised.

Doctorates are regulated to a different extent, and thus the formal environments allow for different degrees of flexibility. While at some places, regulations do not contain information about the doctoral process, other regulations clearly prescribe how the doctorate is organised and what is required at what moment in time. It seems likely that doctoral students doing a doctorate at a faculty where the process is highly regulated have more similar pathways than those writing their dissertation at a faculty without clear regulations.

This seems indeed to be the case when looking at the sample. The four doctoral students doing their doctorate and working at the university with the most regulated doctoral programme show several similarities, even though they are supervised by three different

professors. They all write their doctorate on a topic that is strongly related to a project they work on and thus see synergies between their job and the doctorate. The three of them that have already finished their first year have quite high numbers of publications, often out of research projects. Scientific output usually is multi-authored, and the most frequent form of output are presentations at international conferences, most often published in proceedings. Four out of five publications are written in English. When listening to these doctoral students and looking at their publication lists, it seems common to be as efficient as possible with publications: on the one hand, when they have a conference paper written by several authors only one of them presents it at the conference; on the other hand, they tend to present more than one paper at the same conference. They all plan to finish their doctorate within a comparatively short time. Three of the four doctoral students in the sample enrolled at this university are undecided about their future, while one clearly prefers a non-academic career. All four would again decide for a doctorate, underlining that they would again do it at the same place and in the same situation as well.

This case also shows the influence of another factor: the local culture. It seems that in this place there is a culture towards efficiency, and doctorates are always connected to (most often applied) research projects with external partners. The habit to have high number of publications and conference presentations is also reflected in the publication lists of professors: when analysing them for all professors that are supervisors of doctoral students in my sample (data from Lepori and Probst 2009), two of the supervisors of this university range at the top, with 61 and 51 publications in a ten year period (average: 20.6 publications)[45].

Also another example of a university where different professors supervise doctoral students in communication sciences shows that it is possible to establish a local culture of a doctorate. At this place, it seems that it is clear for all doctoral students that to do a doctorate does not only mean to write a thesis, but also to contribute to teaching and to participate in a broader community. In this place, it is common to have doctoral colloquia, and to have regular meetings within research groups. For an external observer, it seems that doctoral students are considered junior members of the academic profession, participating in all types of activities.

At other places, the local culture seems to be less clear, or rather restricted to individual chairs and thus influenced also by the supervisor's beliefs. This is clearly visible at one

[45] One might criticise the data gathering of this analysis: data was retrieved from publication lists available on the internet, and thus is probably not complete, meaning that other professors did probably not publish complete publication lists. If this was the case, the fact that for these professors more publications are listed could however be seen as an indicator of the importance given to publications by these individuals or this organisational unit. This is also evident in the fact that in the university described here, a publicly available publication database including all publications and presentations is used.

university where there seems to be no common culture of the doctorate, but strong cultures at the level of some chairs. Here, in one case a supervisor states that he wants to create an environment that is stimulating of in-depth discussion and exchange, a culture of collaboration, of learning. When listening to his doctoral students, it seems that this culture is established. For them, it is clear that research is something that is done in a team, and that discussion is an important part of it. They also underline the importance of exchange with researchers from other places and also have very concrete contacts and collaborations outside the home university.

From the data, one can presume that supervisors with clearer ideas about the doctorate and who establish a local culture also make a more conscious decision when selecting doctoral students. Even though this selection process is not formalised, these supervisors seem to have clearer ideas about what they require from their doctoral students, in terms of knowledge and competencies (for example field of studies or language skills) as well as in terms of motivation and attitude towards the doctorate.

In other cases, the environment seems to be much more flexible, and doctoral students that are apparently in the same setting experience very different types of doctorates and develop different perceptions of the doctorate, but also of the academic profession. Here, individual characteristics of the doctoral student, for example his own motivation to build a network inside and outside his organisational setting, as well as the broader environment seem to play a more important role.

10.3.2 Flexibility of the actors' beliefs

As the above presented results have shown, many doctoral students start a doctorate without clear ideas about what they are going to do, often also without clear motivations and plans for the future. Their beliefs and plans are flexible, and they are influenced and formed by what they experience during their doctorate, both within the direct doctoral environment, but also within a broader scientific community and other environments outside academia.

This flexibility in the actor's beliefs has come particularly clear in the above presented examples of Daniel, Paula and Marc: Daniel started the doctorate in a way that seemed to lead him towards an academic future, but his experience of the academic profession led him to decide that he did not want to stay in academia; Paula begun as a *worker* and through interaction with senior researchers and the experience of an academic environment outside her home university she understood that she would like to become an academic professional in her future; and Marc's decision to leave the university seems to be influenced both by the experience of difficulties in the concrete local environment as well as his positive experience of a professional alternative.

There are, however, also a few doctoral students in the sample starting with quite clear ideas about why they do a doctorate and what they want to do with it after. One example is a doctoral student who has been working for consulting companies before starting the doctorate, in projects that included applied research components. He considers the doctorate an additional project in his professional pathway, which he wants to do well but also efficiently, and afterwards he will go back to private companies. He appreciates the doctorate because it offers him more possibilities for reflection than what he usually experiences in projects. For him, the role of his supervisor consists in making sure his doctorate has a "scientific touch".

There are also some doctoral students in the sample with clear beliefs about what a doctorate should be like and about the supervisor's role. One example is the doctoral student doing his doctorate in Switzerland, but who is enrolled abroad: he states that he does not want to have close guidance, that the doctorate is his own project.

Most doctoral students, however, build their ideas about what the doctoral process and supervision should look like only during the process. Their positive or negative experience as well as what they observe in the situation of colleagues contributes to this understanding. The meaning their supervisor attributes to the doctorate seems to have an important influence on the doctoral students' beliefs.

When asked about advice they would give to a future doctoral student, several respondents, but also some supervisors state that it would be useful to decide rather early in the doctorate what one wants to do in his professional future: this would allow then to construct the doctorate accordingly. Doctoral students say that, especially for those who do not wish to pursue an academic career, it would then be possible to do the doctorate as efficiently as possible. Those, on the other hand, who wish to go on with an academic career, could plan to spend some time abroad or to find other ways for socialising in a broader scientific community.

10.3.3 Compatibility and conflicts between actor and environment

It seems that it would be easiest to find perfect matches between doctoral students and environments if both had clear beliefs, and thus would also not be too flexible. This seems to be the case with the doctoral student mentioned above, who sees the doctorate as a further project in his career: he clearly knows what he wants, and he does his doctorate in an environment where the doctorate is structured and by definition entails collaboration with external partners. However, as this study has shown, in Swiss communication sciences beliefs about the doctorate are often not very clear, neither those of the actors, nor those of the environments.

Most often, there is no clear selection process at the beginning of the doctorate, and compatibility is not addressed explicitly. Some supervisors state that they try to

understand the motivations of doctoral students, but these motivations at the beginning of the doctorate are characterised by bounded rationality, as the doctoral student does not dispose of complete information regarding the doctorate. Thus, to find a good match is a difficult task, and many supervisors state that they rely at least partially on their gut feeling.

When compatibility is not given, conflicts between the actor and his environment can arise. This is for example the case when a doctoral student starting his doctorate without clear ideas discovers during the process that he would prefer a different type of supervision, or that he is not really interested in the topic that his supervisor proposed to him in the beginning. The following paragraphs address the issue of compatibility both regarding topics and regarding beliefs.

Compatibility in topics

It seems that the compatibility of the topic of the doctorate with the supervisor's research areas and with the local environment is crucial for good local and broader scientific integration, but also for supervision in general. If compatibility of the doctorate with the research topics of the supervisor is high, it seems that supervision is generally more intense and more satisfying for the doctoral student.

If a doctoral student's project is compatible with the supervisor's topics, this project becomes relevant for the supervisor's own work. An extreme situation occurs when the doctoral student writes his dissertation in close connection to a research project led by the supervisor. This is a situation many doctoral students experience as or observe as favourable. Many supervisors request that the topic of a doctorate is close to their own topics of research or at least of interest. The experience of Monica presented above, however, shows that supervisor's interest in the topic alone is often not sufficient: her supervisor is highly interested in her topic, but only on a private level, as a hobby. She experiences clearly less intense supervision and guidance than other doctoral students of the same supervisor working on topics that are connected to concrete research areas and projects of the supervisor (one of them has been interviewed).

Besides compatibility with the supervisor's topics, also compatibility with the local environment's topics is often addressed. As communication sciences allow for a broad variety of topics to be studied and as usually doctoral students can decide on their own what they work on, even the topics of doctoral students working with the same supervisor are often not close enough in order to allow for in-depth interaction. Several doctoral students report also that the distance among topics makes it difficult to have fruitful doctoral colloquia, let alone doctoral courses that go beyond general aspects. Some doctoral students counter this lack of possibility for in-depth discussion by

attending international conferences and summer schools on their specific topics or methods. They underline that these events are good occasions for receiving new inputs.

Supervisors could control the compatibility of their doctoral students' topics at the moment of selection. Often, however, this does not happen, supervisors require their doctoral students only to work in an area that is somewhere related to their own topics. Only a few supervisors state that they wish to create a local environment focussing on a specific topic, where compatibility between the collaborators' topics is given. The ProDoc programmes by the Swiss National Science Foundation and the Rector's Conference of the Swiss Universities require that all participants in ProDoc graduate schools work on a common core topic, thus they make a step towards more compatibility in doctoral students' work.

In the sample, there are several examples of doctoral students showing conflicts with the environment on the level of the topic. Besides the already mentioned difficulty of integration because of a topic that is too far away from the environment's topic, also another type of conflict seems frequent: several doctoral students in the sample report that when deciding on the topic of their doctorate, their supervisor had some influence – something they appreciated at the time. Later on in the process, however, some of them discover that they are not enough interested in their own topic, or they discover, for example through collaboration in projects, that they would prefer to work on a different topic.

Compatibility in beliefs

While conflicts on the level of topics can be addressed and discussed with the supervisor, this seems to be more difficult when conflicts regard incompatible beliefs about what a doctorate is and how the process should look like. Even though there are doctoral students in my sample who say that they prefer to do their doctorate on their own and without support from their supervisor, the study generally shows that supervision is an important and crucial element of the doctorate. As there is usually no institutionalised structure in the Swiss communication doctorate, the role of the supervisor is even higher than what it might be in a doctorate done in a graduate school with several professors involved and a certain degree of institutionalisation. The supervisor defines the process, guides the doctoral student, and in most cases also evaluates him at the end of the process. The broader environment leaves room for interpretation of the supervisor's role, and therefore supervision can be done in a wide variety of ways.

The ideas about how supervision ideally looks like differ. This is visible in the whole sample, including both doctoral students and supervisors. If the beliefs regarding supervision differ between a doctoral student and his supervisor, conflicts can emerge.

Most often, these conflicts are rather limited to single aspects – as for example a doctoral student wishing his supervisor to show more commitment or to put clear deadlines – and remain unsaid. In singular cases, conflicts between doctoral students and supervisors are so important that the supervision relationship breaks. As the example of Paula presented above shows, there are also other possibilities and strategies to fill the gap – especially through contacts to other senior researchers, be it locally or on an international level.

From the interviews, also some incompatibilities between the beliefs of doctoral students and the organisational environment emerge. For example, some doctoral students wish to have the possibility to attend courses, but the university does not offer any or only a few courses for doctoral students that would be of interest. In other cases, more structure in the organisation is wished, for example including clear deadlines for handing in the doctoral thesis. Here, however, another conflict between the two roles doctoral students fulfil at the university can emerge: as most of them are both doctoral students and employees, time is scarce, and thus additional coursework would probably lead to even more difficulties in this respect.

10.3.4 Changes in pathways

When conflicts emerge, changes in pathways can occur. Overall, changes in the pathways of doctoral students in the sample are rather small adaptations than abrupt shifts in direction. There are, however, a few examples where conflicts lead to more important changes.

One doctoral student reports that this doctorate is already his second attempt to pursue this degree. Several years before starting with the doctorate in communication sciences, he already started a doctorate in another field, but as important conflicts with the supervisor emerged, he decided to stop.

Another doctoral student reports a change in supervisor: he started his doctorate with the professor who directs the institute where he is employed, and worked on a topic that was proposed to him by this professor. After some time, however, he discovered incompatibilities between his own and his supervisor's theoretical, epistemological and methodological approaches. In this case, the doctoral student decided to break off the supervision relationship, and is now supervised by another professor at the same university.

It seems difficult to make such drastic changes in the environment. Once enrolled for a doctorate at a specific university and with a specific supervisor, doctoral students usually go on with this constellation. If conflicts emerge, solutions are usually found within the situation.

Conflicts in topics can often be resolved in discussions with the supervisor. The interviews with doctoral students show that supervisors are usually open to discuss these issues. Complete changes in topics occur, but are not too frequent. What happens more often are smaller changes in the focus of the topic or changes in the methodological approach. These are rather iterative changes than brusque moments of reorientation, and doctoral students in the interviews often do not refer to them as changes.

Conflicts in the beliefs about the doctorate seem to be more difficult to resolve. It seems that doctoral students are more reluctant to address them directly, but they rather tend to find other strategies to remedy, such as going to summer schools and conferences where they can interact with experts in their field, or approaching other senior researchers in their direct environment who support them in the process – with or without official acknowledgement of this second supervision.

10.4 Short conclusions

In this chapter, the doctorate in communication sciences in Switzerland was analysed as a constellation where an actor enters in an environment and starts interacting with this environment. In this interaction, beliefs of both the actor and environment play an important role.

Based on this rudimentary framework, four concrete examples of pathways of doctoral students have been presented, indicating the variation in the interaction between actor and environment as well as possible tensions that can emerge when beliefs of actors and environments or beliefs and reality do not correspond.

To what extent the environment and beliefs of the actors are flexible has an influence on the doctoral process and the possibility to handle possible conflicts. In the cases of doctoral students interviewed for this study, most often solutions are found within an existing setting. It seems that, generally, doctoral students adapt to their environment, at least to a certain extent, and that the environment and beliefs of other actors in the environment influence on the beliefs of doctoral students, thus doctoral students most often have beliefs that are compatible with the possibilities offered to them by the environment.

11 Conclusions

In this concluding chapter, the research questions that stood at the beginning of this text (1.4) are again addressed. The doctorate is again briefly addressed from a theoretical point of view, referring to the different possible interpretations of the doctorate. Then, the results describing the doctorate in Swiss communication sciences are brought in relationship with the field's social and cognitive structure, as presented in chapter 3. Reflections about limitations of this study and ideas for further research work in this topic area conclude this text.

11.1 Answering the research questions

At the beginning of this study, there was the question: What is a doctorate in Swiss communication science? This study has shown that, as expected, there is no unique answer to this question. Instead, a broad range of diversity can be observed.

This diversity covers the normative level as well as the organisational level, the individual actor as well as the environment. On the normative level, there is no common framework for the doctorate among the different Swiss universities. But even within most universities, the regulations leave much room for interpretation, so that often the doctorate takes different forms within one institution. The doctorate in Swiss communication sciences is generally under-regulated.

This is also reflected on the organisational level: only a few doctoral students in the sample are part of an organised structure that frames their doctorate. Where doctoral schools exist, they again differ in their form – from the clearly structured work plan and coursework in one university to the mere offer of discussion platforms and presentations at other places. Most strikingly, admission is not controlled: the regulations contain only few information about admission requirements, and it is usually up to the supervisor to decide whether he accepts a doctoral student or not. Thus, there is much diversity in the provision of doctoral training.

Diversity is also visible in the student population. Doctoral students in this field come from different disciplinary backgrounds, and have collected different amounts and kinds of experiences before starting the doctorate. The reasons why they do a doctorate vary, and so do their plans for their future. The continuum ranges from the professional who wants to reflect his experience and then go back to his previous work, to the doctoral student who started a doctorate because he was proposed to do so and now discovers that he actually likes what he is doing, to the doctoral student who already made his first academic experiences as a student assistant and starts the doctorate with the idea of an academic career in mind.

But also the environments of the doctoral students vary. While some do their doctorate on scholarships, on their own means or while working outside academia, most doctoral students are employed on assistantship positions, covering tasks in the areas of research, teaching and administration. Usually, they are employed at the same university and institute where they are enrolled for the doctorate, often working together with their supervisor. This leads to a twofold role of both the doctoral student and the supervisor. On the one hand, their relationship is one of doctoral student – supervisor, on the other hand it is an employer – employee situation. Equally, the doctoral student's relationship towards the university is twofold: on the one hand, he is a student who is trained and aims at a university degree, on the other hand he provides important work for the functioning of the organisation. This situation that can be characterised as implicit contract leads to different types of expectations from both sides.

Thus, the doctorate in Swiss communication sciences is diversified, but not officially. It leads to different outputs and to different types of careers of doctoral degree holders, but formally there is only one degree.

Even though diversity prevails, some common features of the doctorate in communication sciences in Switzerland can also be observed. For example, it seems that generally the doctorate is seen as a particular period in one's life, which is characterised by learning, but also by discovering oneself. A doctorate is also seen as a qualifying period and degree, but the value of this qualification is judged in different ways. Regarding the doctoral project, it can be said that in communication sciences in Switzerland, a doctorate usually contains an empirical part; purely theoretical dissertations are the exception. The type of data gathered and the methods applied on these data, however, differ; a whole range of methods, mostly from social sciences and humanities, is used. Overall, a common culture of the university and academic world, seems to exist, which allows for a common understanding of the construct of the doctorate. How this is operationalised, however, can differ even within a particular disciplinary field in a specific country, as has been shown in this piece if research.

While the first research question presented in section 1.4 was interested in the characteristics of the diversity in the doctorate, the second one referred to factors influencing on differentiation. So how can diversity be explained? It is not sufficient to search the answer only in disciplinary and linguistic differences – they are reflected in Swiss communication sciences, but they do not seem to explain much of the difference in the doctorate. The linguistic region seems to have some influence on the organisational form of the doctorate, but in a very limited way. Also disciplinary differences seem to have only limited explanatory factors. Some institutional differences apply – they could be ascribed probably to linguistic and disciplinary differences, as every single institution represents its own thematic mix and is situated in a specific linguistic region. But only in one case, the institutional dimension seems to play a

somewhat strong influence on the doctorate: at the university of St. Gallen, where the regulation of the doctorate is highest, and strong interaction with external partners is frequent.

In this study, I have thus looked for another solution to explain or at least order diversity. The selection of two dimensions that can be seen as containing the core of the idea of the doctorate has shown to be useful: the integration in the organisational context, and the integration in the scientific community. In this two-dimensional space, three categories of typical situations of doctoral students have been identified: *workers, multifunctionals* and *academics.*

Workers are internal or external doctoral students who do not actively participate in a scientific community. This seems to be caused by different factors: *workers* are often much engaged in local activities in teaching and local research projects, and thus state they don't have time to go to conferences or write papers; their supervisors do not seem to push them towards more active participation in a scientific community, but they do not seem to wish to be more active participants either. In the case of *external workers*, the fact that they are not integrated in a local academic organisational setting seems to contribute to their lack of scientific integration.

In the case of *multifunctionals*, it seems that the implicit contract is fulfilled: they are highly engaged on the local, organisational level and provide much work to the institution, but they do also experience at least some participation in a scientific community, and thus get insights into a wider dimension of the academic profession. Within the group of the *multifunctionals*, three sub-groups were identified: *multifunctionals with few publications* who seem to be quite similar to *workers; general multifunctionals;* and *multifunctionals/late starters* who show similar output patterns as *academics* (increasing output over time), but who started later in the process with their first publication or presentation and thus overall have a lower output per year than *academics*.

Academics are doctoral students employed by a higher education institution who are very active participants in a scientific community: they have an average of more than two publications and/or conference presentations per year. They are often internationally oriented and have contacts to researchers outside their home university. They consider it as part of a doctorate to actively participate in the community, and they usually work with supervisors who are rather active participants as well. Their supervisors also seem to encourage them to do so, and it seems that the supervision relationship in many cases is a relationship between a senior and a junior colleague rather than between a teacher and a pupil; there is also quite some collaboration in output activities between supervisor and doctoral student.

How does this differentiation occur? This study has shown that contextual factors such as the disciplinary orientation and linguistic regions only have limited influence. Disciplinary differences are visible only at the extremes and only to a limited extent, for example in the high internationality and intensity of publications in technology oriented areas. The linguistic region or linguistic orientation of the university seems to have some influence on the organisation of the doctorate, but as overall the influence of the organisation of the doctorate is low, only a few differences between the linguistic regions can be observed.

In this under-regulated context of the doctorate, beliefs about the doctorate and the interaction between the actor (doctoral student) and the environment (local environment including the supervisor, but also wider environments) play an important role. The environment's beliefs about the doctorate are to a certain extent manifest in regulations and organisational structures, but also to a large share implicit. The doctoral student's beliefs develop and change during the doctorate. Even though it is not possible to define whether the doctoral student's beliefs make him choose the environment or whether the environment shapes the beliefs, it seems that most often the latter is the case. Doctoral students start a doctorate without clear ideas, and their beliefs are influenced by their experiences and observations in the direct environment of the university, but also in the wider scientific communities and in their private environment.

Conflicts emerge when the discrepancy between the beliefs of the doctoral student and of the environment is too big. As the doctoral student's beliefs change through the process, these conflicts are not necessarily visible from the beginning on. To change the environment seems to be nearly impossible, thus conflicts have to be resolved within the existing environments. Not always they are made explicit, and doctoral students apply different types of strategies in order to overcome conflicts.

Changes during the doctoral process occur, but most often in small steps. Topics are adapted, methodologies refined, some tasks from the employment situation changes. Complete changes in topics usually occur rather in the beginning; changes of supervisors are rare.

Overall, this study has brought some structure into the wide diversity that can be observed in the doctorate in Swiss communication sciences.

11.2 So what is a doctorate?

At the very beginning of this text, there was the question "What is a doctorate?" Different possible interpretations, from different theoretical perspectives, have been addressed (1.1). Overall, this study has shown that when looking at the doctorate, it is useful to look at this degree from different points of view.

The perspective, rooted in sociology of science and sociology of the profession, which sees the doctorate as a *multiple socialisation process* during which a doctoral student gets socialised to a scientific community, an academic profession, and a local organisational setting, can be confirmed. The study at hand has shown that the socialisation process occurs with differing intensity to the various types of community; while some doctoral students get socialised intensively to the "tribe", the scientific community, others experience a stronger socialisation to the local organisational setting.

It has also come clear that the doctorate is indeed a *learning and selection period*, as is postulated by perspectives from sociology of science and studies on communities of practice. The situation of *legitimate peripheral participation* is visible in most descriptions of the doctorate, but the intensity and speed of moving towards the community's centre varies. The learning process is seen, both by doctoral students and supervisors, as one of the most important constitutive elements of the doctorate, and the doctorate also figures as selection period, from the point of view of the academic community, but also of the individual doctoral student, who gets to know the academic profession and constructs his own, individual ideas about the attractiveness of an academic career.

Also the interpretation of the doctorate as a social and cultural construct, rooted in sociology of culture and sociological institutionalism, can be confirmed. The convergence of different cultures within universities is visible, particularly in the interviews with the supervisors, who bring together different disciplinary, organisational and individual perspectives. On the one hand, some common myths about the doctorate emerge, for example its role in preparing future researchers or the importance of this degree as a basis for an academic career. It is, on the other hand, also visible how beliefs about the doctorate are constructed and re-negotiated in individual processes of social interaction.

Especially in the Swiss context and in a field of social sciences, where doctoral students are most often employed as assistants, also the interpretation of the doctorate as an *element of organisation* is acknowledged. The twofold situation of the doctorate, visible as a relationship between, on the one hand, a doctoral student/employee and on the other hand a supervisor/employer characterises the situation of most doctoral students in the sample. This twofold relationship entails benefits, in that it intensifies the collaboration and allows for synergies, but also leads to challenges, especially regarding the availability of time for fulfilling both roles, which differ in their content.

Additionally, as part of the organisational setting of the university, the doctorate is also subject to requirements from the broader society. The large number of undergraduate students leads to the need for workforce, which is answered with the employment of doctoral students as assistants. This leads to the situation of an implicit contract, in

which the doctoral student provides workforce and the university provides the possibility to earn a doctoral degree. Such an implicit contract, however, is only possible in a context where the doctorate also has value outside the academic environment, where highly-skilled knowledge workers are requested by the labour market: it produces much more doctoral degree holders than needed by the academic community. The effects of this situation are visible in the sample: there are doctorates of different degrees of intensity in terms of the doctoral student's preparation for an academic career, and both doctoral students and supervisors are aware of the fact that an important part of the doctoral students will have to find an occupation outside the academic context. From this situation, it comes clear that the doctorate should not only prepare for an academic career, but more in general prepare for professional activity in the knowledge society.

Overall, this study has shown that in the diversified context of communication sciences in Switzerland, where *explicit differentiation* of the doctorate is not possible, *implicit differentiation* occurs at various levels, which leads to a diversity in the doctorate that answers the needs of the different actors involved – a diversity that serves different masters. In the following section, this diversity is re-linked to the characteristics of the field.

11.3 The doctorate and the field's social and cognitive structure

At the beginning of this text, the social and cognitive structure of the field of communication sciences in general and particularly in Switzerland has been addressed, and a map of Swiss communication sciences was presented.

The analysis of the doctorate in this field has confirmed features of this map: for example, there is not much exchange between the French and the German speaking region; there is a strong connection between the German speaking part of Switzerland and Germany; English as publication language is used mainly in Lugano and St. Gallen; and doctoral students write their dissertations in fields that correspond to the local areas of research, thus for example with a focus on business and technology in St. Gallen, high importance of mass (media) communication in Zurich, connections to cultural studies in Basel and a broad variety of topics in Lugano.

Particularly reflected in the doctorate is the field's rural and divergent (Becher and Trowler 2001) structure. In a rural field, the people-to-problem ratio is low, meaning that many different topics can be explored without creating conflicts between concurring researchers. Thus, there is no race for being the first individual or group to discover something new.

This rurality of the field allows for doctoral students to be employed as assistants with an important share of activities in the area of teaching and administration: doctoral students are not necessarily needed as workforce in research projects that have to be carried out

as soon as possible, in order to discover a new feature before another team does so. Equally, doctoral projects are rarely embedded in larger research projects, and thus do not have to respect tiny time schedules in order to allow the team's work to proceed. Combined with the fact that in this field there are high student numbers and therefore teaching load is high, it is not astonishing that doctoral students fulfil many tasks in teaching and administration.

As doctoral projects are not needed as part of competitive research projects, doctoral students in communication sciences are also rather free to choose their own topic. Several doctoral students choose a topic they are personally interested in, because of their own experience or experiences of people that are close to them. As the field is non-paradigmatic, it is also possible to be innovative in a doctorate, for example to combine methods and topics that have not been combined before, thus to find new pathways within the field's territories and tribes. The blurry boundaries of the field also allow adopting methods from other fields and applying them to communication contexts.

The non-paradigmatic character of the field is also reflected in its open boundaries: it is possible to enter the field also from neighbouring fields, as is reflected in the disciplinary background of doctoral students. Costs of entry are rather low, doctoral students do not need to attend years of classes in communication if they have a background in a different area, but they rather can add a communication point of view to their previous knowledge. Equally, there is no consensus on a common methodological body, and it is thus possible to apply a broad range of methodological skills.

As it is possible to access the field from outside, it is also possible to leave it. The boundaries of the field are not clearly delimited, and it can even be asked whether it is possible to talk about one field. External observers would probably attribute several projects of the doctoral students in the sample to other fields, and also some doctoral students underline that their projects are rather based in other fields than in communication sciences.

Also the importance of applied research in the field is reflected in the doctorate. Many doctoral projects contain fieldwork that involves organisations outside the academic environment. Thus, doctoral students often also have contacts outside academia and can build ideas about possible non-academic professional futures.

This study can therefore also be interpreted as an example showing that the social and cognitive structure of a field is reflected in the way in which future researchers are trained in this field.

11.4 Limitations of this study

The way in which this study was conducted, as well as the selection of the case (Swiss communication sciences) and the sample entails some limitations to its results. It is the aim of this section to address these limitations.

For this study, I decided to do an in-depth analysis of the doctorate in a particular disciplinary and national setting. As diversity within this disciplinary and national setting is already high, I decided against a comparative study including other fields and/or national settings. Thus, instead of an analysis of diversity between higher education systems and/or disciplinary fields, I opted for an analysis of diversity within a particular national and disciplinary context. This obviously limits the possibility to generalise the results to other fields and countries.

The study was conducted based on an explorative, qualitative methodology, including interviews with the main actors of the doctorate, doctoral students, but also an exploration of the environment through an analysis of doctoral regulations and interviews with supervisors. The semi-structured interviews with many open-ended questions led to many interesting insights and to the possibility of interpretations which would probably not have been possible with more structured instruments, but they also entail the challenge that not all answers are comparable, and that not for all individuals every piece of information was available. The experience has shown that even when asked a literally identical question, individuals tend to interpret it in different ways, also depending on the context within the interview, and thus to give different types of answers.

Another limitation of this study consists in the missing time dimension in the methodology. It was possible to interview doctoral students only once. In order to introduce some temporal elements, I have asked them in the interviews to tell me about their whole doctorate, and have tried to focus on moments that seemed to be particularly interesting. Also I've added some longitudinal element by sending them a short e-mail questionnaire between one and one and a half year after the interview.

An additional challenge in this study is surely given by my double role as doctoral student and investigator of the doctorate in the same field. This role allowed me a facilitated access to interview partners, both on the level of doctoral students and supervisors. To be a legitimate participant in the community of communication sciences also allowed for participant observation – during this doctorate, I participated at conferences of the SGKM, and also was a member of the SGKM work group implemented for enhancing the doctorate in communication sciences in Switzerland.

But besides this facilitating function, the double role also entails possible biases. They regard, on the one hand, the information that was given to me by interview partners, and on the other hand also my own cognitive work in interpreting the data.

Probably, I would have received different answers if I were a senior researcher, or a researcher from a completely different field of study. I had the impression that doctoral students were quite honest and open – sometimes it seemed to me that I was rather considered a colleague in the same boat than an external investigator. Several times, after the interviews doctoral students told me things like "thank you, finally I could talk about all my experiences" or "this made me conscious of some points I didn't notice before". But also regarding the interviews with the supervisors, my role as doctoral student in the field might have led to different answers than another investigator might have received. This particularly in the interviews at the university where I am enrolled for my doctorate, with supervisors whose classes I had attended as an undergraduate studies and whom I regularly met in the corridors during my work as assistant. I deliberately decided not to interview my own supervisors, as in this case the manifoldness of our roles would probably have been too high.

In order to prevent biases in the interpretation, I consciously reflected my own experience in the doctorate. I did this on my own, together with my supervisor and also when talking with other colleagues or senior researchers, thus trying to be aware of what might influence the way in which I interpret the data. I have thus tried to make a step back, and to remove my role and point of view as a member of the examined population. What also helped to prevent this biases were the possibilities I had to present intermediary results of this doctorate during conferences or at colloquia in the community of higher education research. This particularly helped also to understand and recognise specificities of the field of communication sciences and of the Swiss higher education system, which to me, as a participant in this field, were self-evident and thus not of particular interest.

11.5 Ideas for further research

From this study, new questions emerge, such as: Can the three categories also be identified in other fields and national contexts? To what extent is the proposed one-dimensional definition of the categorisation (scientific integration) useful? Is the importance of beliefs equally high in more regulated or more urban and convergent contexts? From the above addressed limitations, it is possible to deduct ideas about further research work to do in this area. It would thus be possible to extend this project in at least two dimensions: regarding the studied field and regarding methodology.

First, one could extend the study in the dimension of the field looked at. It might be particularly interesting to look at the doctorate in fields that are generally described as

very different in terms of their social and cognitive structure (for example an urban and a rural field, or a "hard" and a "soft" field), but also in national contexts where the role of the doctorate differs – for example in Italy, where the doctorate is only useful for an academic career, and in Germany, where the doctorate opens up a wide range of possibilities. It might be equally interesting to look at contexts showing different degrees of regulation in the doctorate, for example comparing graduate schools with and master-apprentice-situations. And finally, also a look at higher education systems where the doctorate is officially differentiated could lead to interesting insights.

Secondly, it would also be interesting to extend the study in terms of its methodology. Also in this regard, different possibilities apply. On the one hand, it would be interesting to develop this study into a longitudinal analysis, accompanying doctoral students during their whole process of the doctorate, and probably also beyond, in their first years of professional activity after the doctorate. In the Swiss context, it might be interesting to do such a study with a sample of doctoral students that participate in the newly implemented ProDoc programmes, by accompanying them during their whole doctorate and comparing their experiences to their colleagues that are not part of a graduate school.

On the other hand, it is also thinkable to extend the study in terms of methods used. While this study was largely based on qualitative methodology, it would be possible to use the results as basis for the development of more quantitative instruments. Together with results from and instruments used in other studies, such as large scale questionnaires on the doctorate (see for example Enders 1996; Avveduto 1999; Paul and Perret 1999; Mangematin et al. 2000; Enders and Bornmann 2001; Röbbecke and Simon 2001; Berning and Falk 2005; Gerhardt et al. 2005), the ideal mentor scale interested in supervision (see Rose 2003; Bell-Ellison and Dedrick 2008) or typologies of supervision (for example Murphy et al. 2007; Lee 2008), new instruments could be developed that would allow to make large scale comparative studies on the doctorate in different contexts, covering larger samples than what was possible in this study.

However, if one wants to understand the doctorate and its interaction with the environment, future studies necessarily also include in-depth analyses of the environment, including its disciplinary and organisational structure. Thus, one should develop instruments that allow for understanding the supervisor's point of view, as well as instruments for analysing the local, institutional and the disciplinary contexts.

What also came clear in this project is that in-depth interviewing leads to very rich data, which allows for more detailed insights and explanations than for example a mere questionnaire survey does. Thus, it could be interesting to integrate a comparative quantitative analysis with an in-depth analysis of some cases that emerge as particularly interesting from the quantitative data.

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