

ProFile - Interim Results 2014

On the following pages we would like to present some results of the **ProFile survey**. We begin with a brief description of the study before subsequently introducing the ProFile doctoral candidates with reference to specific characteristics. Following this, we picture findings of last year's main focus - the perception of plagiarism scandals from the perspective of doctoral candidates.

The ProFile survey

In recent years, a large quantity of new doctoral programs has emerged in Germany. It was the aim of these programs to improve the quality of doctoral education. The extent to which these goals have been achieved remains largely unknown. In general, the availability of information on the situation of doctoral candidates at German universities is still very limited. One reason for this lies in the lack of a doctoral student status¹. As a result, it is not known how many people are currently working on their doctoral project in Germany.

The Institute for Research Information and Quality Assurance (iFQ) responds to this shortage of information with the help of the ProFile survey and has designed and implemented a continuous monitoring of doctorate conditions and the careers of doctorate holders in collaboration with universities, other funding institutions and also initially with the German Research Foundation (DFG). In addition to the subjective assessment of doctorate conditions and the supervisory situation, the focus of the long-term conceptualised iFQ project is the investigation of course of the doctoral candidacy as well as careers of doctorate holders. ProFile is conducted by the iFQ in cooperation with universities, funding institutions and the German Academic Exchange Service (DAAD). Since 2009 doctoral candidates are surveyed at regular intervals. Currently, the following eight universities are involved in ProFile:

- Humboldt Universität zu Berlin
- University of Kassel
- Heidelberg University
- Freie Universität Berlin
- Friedrich Schiller University Jena
- Leibniz Universität Hannover
- University of Osnabrück
- Otto von Guericke University Magdeburg

¹ For doctoral student status and the legal fundamentals see Hornbostel: Wer promoviert in Deutschland?
http://www.forschungsinform.de/Publikationen/Download/working_paper_14_2012.pdf

In addition, the following foundations and doctorate programs also currently participate in ProFile:

- German National Academic Foundation
- Heinrich Böll Foundation
- Deutscher Akademischer Austausch Dienst (DAAD, German Academic Exchange Service)
- Goethe Graduate Academy of Goethe University Frankfurt (GRADE)
- Hartmut Hoffmann-Berling International Graduate School of Molecular and Cellular Biology (HBIGS)

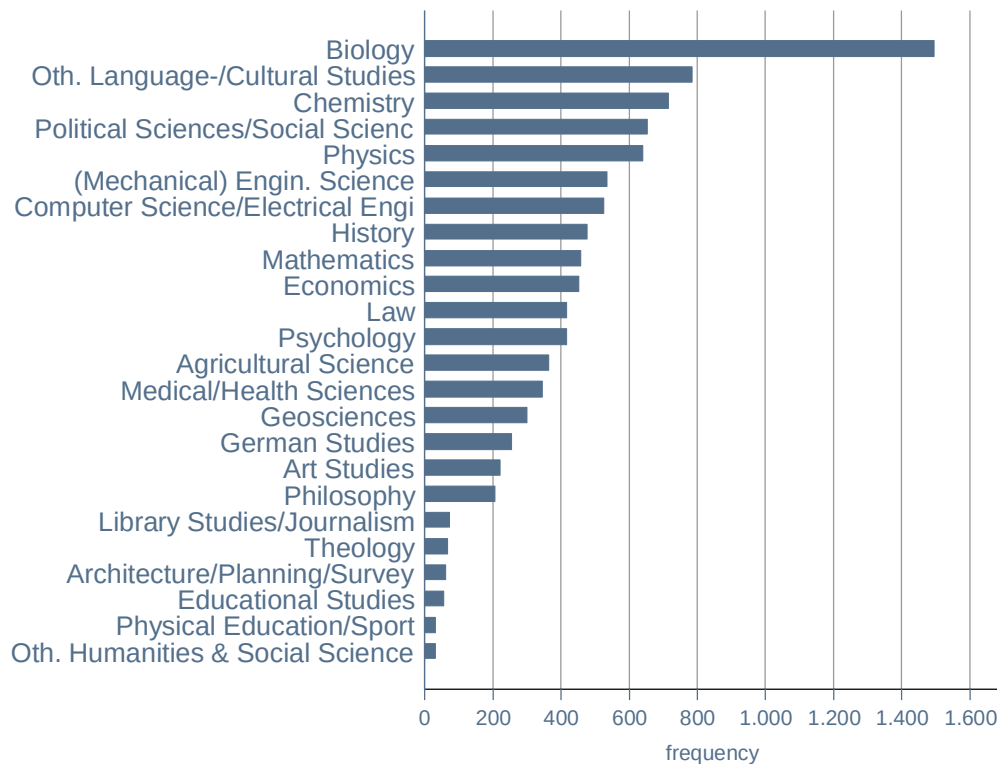
The data of those who were graduating in the years 2009 to 2012 from research training groups and collaborative research centers of the German Research Foundation (DFG) have also been incorporated into the results. Through these diverse ways of access to doctoral candidates, ProFile is able to map a wide spectrum of doctorate conditions and their resulting corresponding experiences.

ProFile is designed as a panel survey with new cohorts every year. Regularly, the data of the new doctoral candidates at the co-operating partner institutions are transferred to the iFQ, invited to participate and then surveyed annually for up to four years after the completion of the doctorate.

Who are the ProFile doctoral candidates?

The results presented below are based on data from 9,630 respondents who were working on a dissertation at the time of the survey – spanning the years 2009 to 2013.

Figure 1 Amount of ProFile doctoral candidates according to discipline of dissertation



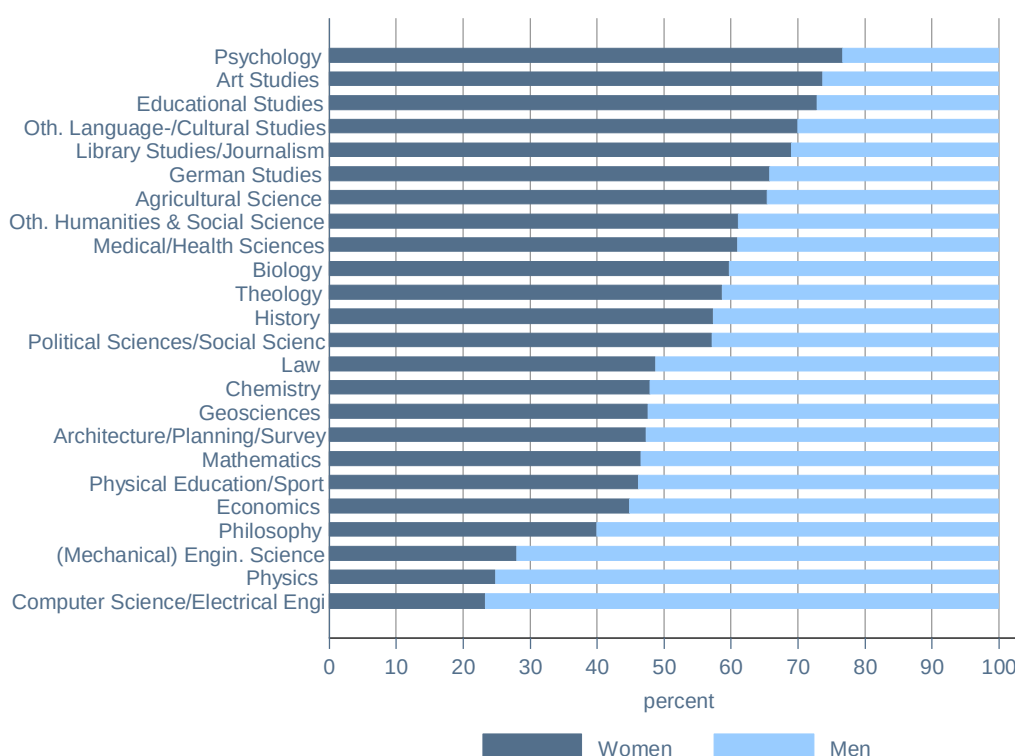
Source: ProFile 2009-2013, own calculations

ProFile represents doctoral candidates from all disciplines. It is evident that the proportion of medics in ProFile is comparatively small. This is due to the special features of the doctoral candidacy in medicine, since the respective dissertations are often already written during the course of studies. These difficulties in the collection of data have led us to only give priority to medical doctoral candidates who have already completed their studies.

The doctoral candidacy in medicine is not the only one that stands out in a particular way: disciplinary cultures and norms substantially contribute to the doctorate conditions, incidentally not only in Germany. While many graduates decide to work on a doctoral project in several natural sciences, the proportion in humanities is usually lower². We want to give you the opportunity to compare yourself with doctoral candidates of your respective discipline. However, due to the number of cases this was not possible for all disciplines.

² Read more: Cyranoski et al.: The PhD factory <http://www.nature.com/news/2011/110420/full/472276a.html>

Figure 2 Gender ratio within the disciplines



Source: ProFile 2009-2013, own calculations

The gender ratio for completed doctorates in Germany is almost balanced; there is only a small four percent lead by men³. Among those surveyed, however, the gender ratio is almost entirely balanced: here 50.46% are women and 49.54% are men. Though it should be noted that in comparison to men, women are slightly more likely to participate in ProFile, and are therefore over-represented in the overall data compared to the general population.

In recent years, the amount of females who have been granted a doctorate has increased in many fields. But women are often still not engaged in doctorates according to their share in the group of university graduates. The so-called leaky pipeline often already begins with the commencement of a doctorate⁴.

A distinguished feature of ProFile is that doctoral candidates from different institutional backgrounds come to participate in the survey. Due to our wide range of co-operating partners (universities, foundations, graduate schools), there is a predominance of doctoral students who finance their doctorate through a scholarship or research assistant position. This, of course, is not without

³ See the Statistischen Bundesamt (Federal Statistical Office) statistics:

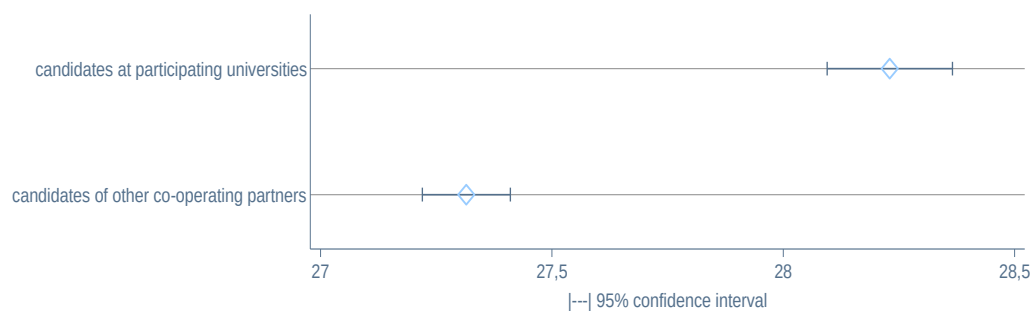
<https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/BildungForschungKultur/Hochschulen/Tabellen/BestandenePruefungenGruppen.html>

⁴ For more information, see page 122 et seq. in Hauss et al. : Promovierende im Profil:

http://www.forschungsinform.de/Publikationen/Download/working_paper_13_2012.pdf

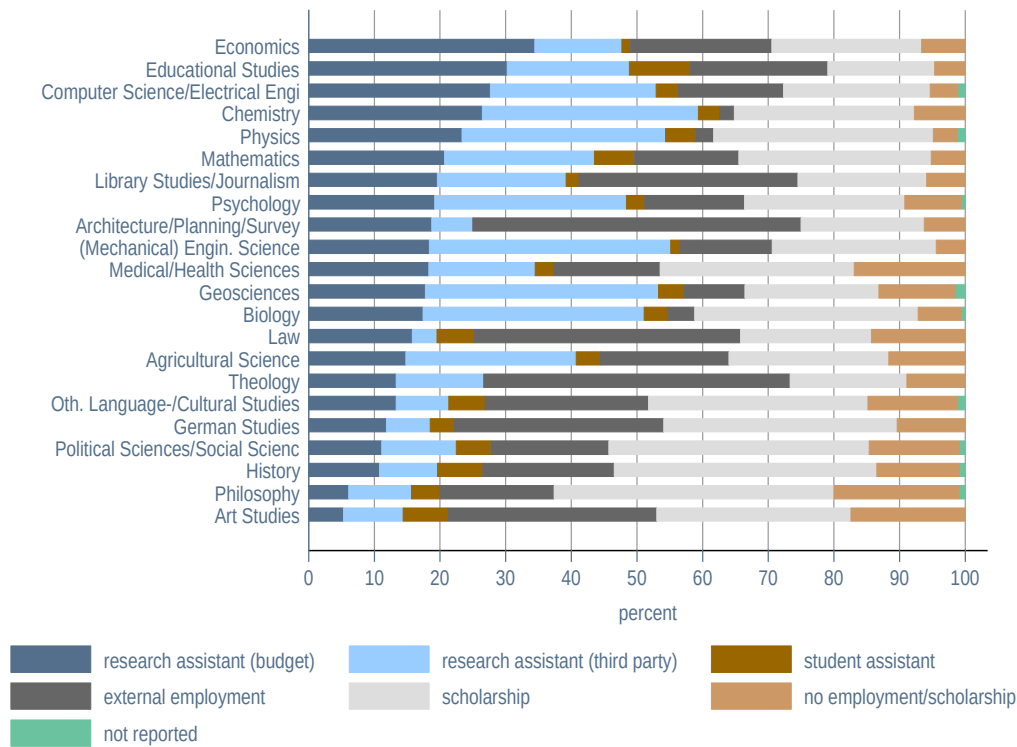
consequences with regard to the data analysis – so how can it be done in accordance with the aim of displaying results in the simplest form possible? We usually limit such descriptive and often bivariate analyses to the group of doctoral candidates who are affiliated with one of the eight universities participating in ProFile. The following figure, which shows the age at the beginning of the doctorate, is an example of why this is useful.

Figure 3 Diversity of the ProFile doctoral candidates – mean and standard error for the age at the beginning of the doctorate



On average, the doctoral candidates of universities participating in ProFile are slightly more than a year older at the beginning of their doctorate than those who haven't been reported to ProFile by a university but by a funding institution or graduate school and who were not working on a doctoral project at one of the participating universities. What is also noticeable is that the confidence interval within the group of doctoral candidates from the universities participating in ProFile is much greater than that of the other doctoral candidates. This suggests a greater variance for this group in the age at which a doctorate is started. The group of other doctoral candidates is substantially more homogeneous, mainly due to the fact that a greater proportion of doctoral candidates in this group have undergone a formalized assessment.

Figure 4 Primary form of finance for the doctorate at the time of the initial survey



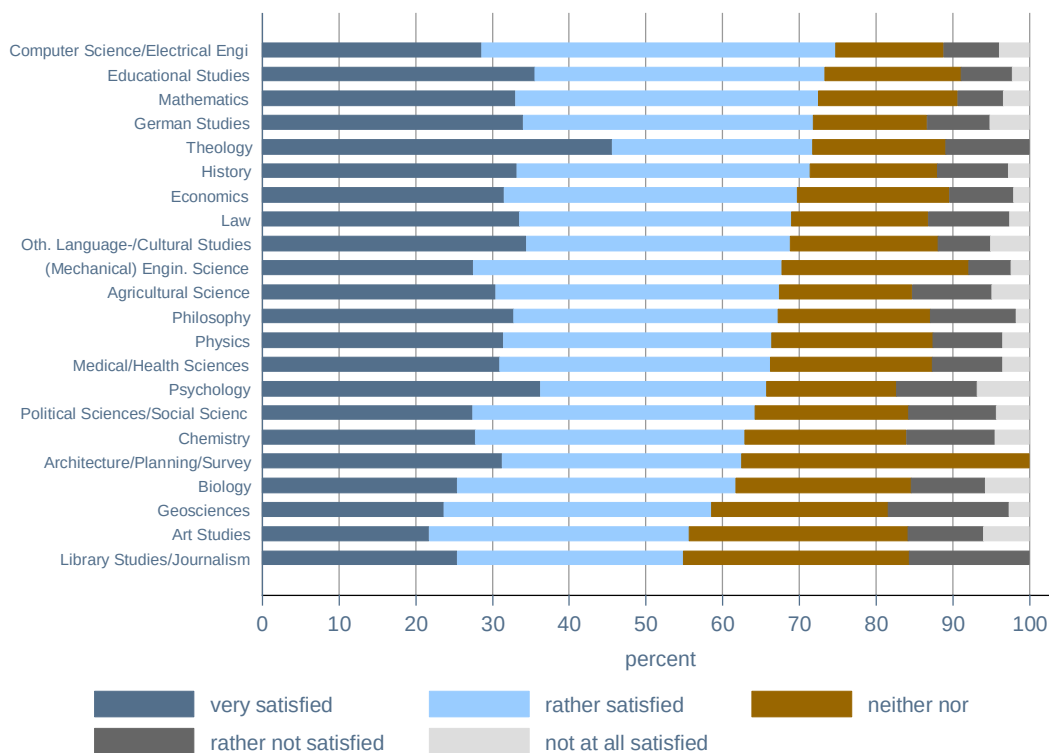
Source: ProFile 2009-2013, own calculations

In our presentation of the different ways of financing a doctorate we only considered the doctoral candidates who pursue a doctoral degree at one of the universities participating in ProFile (N = 5,218) due to the diversity of the groups. Otherwise, the predominance of the scholarship holders and those funded by assistant positions would be even more pronounced.

The various forms of finance differ in strength from discipline to discipline. External employments, with no relations to research and teaching, are more widespread in the field of law and theology than in other disciplines. Research assistant positions, whether they are budgetary-funded or third-party funded, dominate in many natural and engineering sciences⁵.

⁵ For more information, see page 122 et seq. in Hauss et al.: Promovierende im Profil: http://www.forschungsinform.de/Publikationen/Download/working_paper_13_2012.pdf

Figure 5 General satisfaction with the doctoral supervision



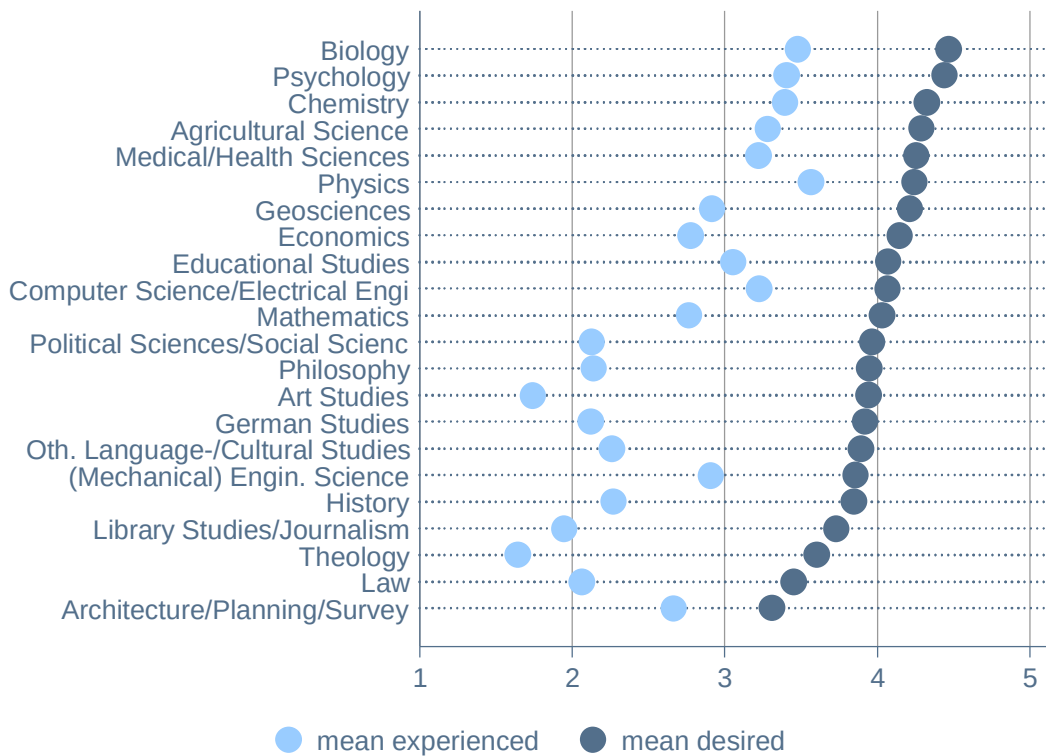
Source: ProFile 2009-2013, own calculations

In addition to forms of finance, for doctoral candidates good supervision is critical for the success of the doctoral project. We assume that the tension between supervisory guidance and independent research is very distinctive in Germany. One's own independent and original research performance is at the core of the doctorate; this is how it was formulated by the Wissenschaftsrat who thus clearly positioned itself as pro independence.⁶

When asked how satisfied doctoral candidates are with their supervision in general, about two-thirds indicated that they were very satisfied. This is an exceptional case in the study where the consensus among the various disciplines is very high.

⁶ For more information, see page 122 et seq. in Hauss et al.: Promovierende im Profil: http://www.forschungsinfo.de/Publikationen/Download/working_paper_13_2012.pdf

Figure 6 Experienced and desired supervision in the field of "publishing in journals"

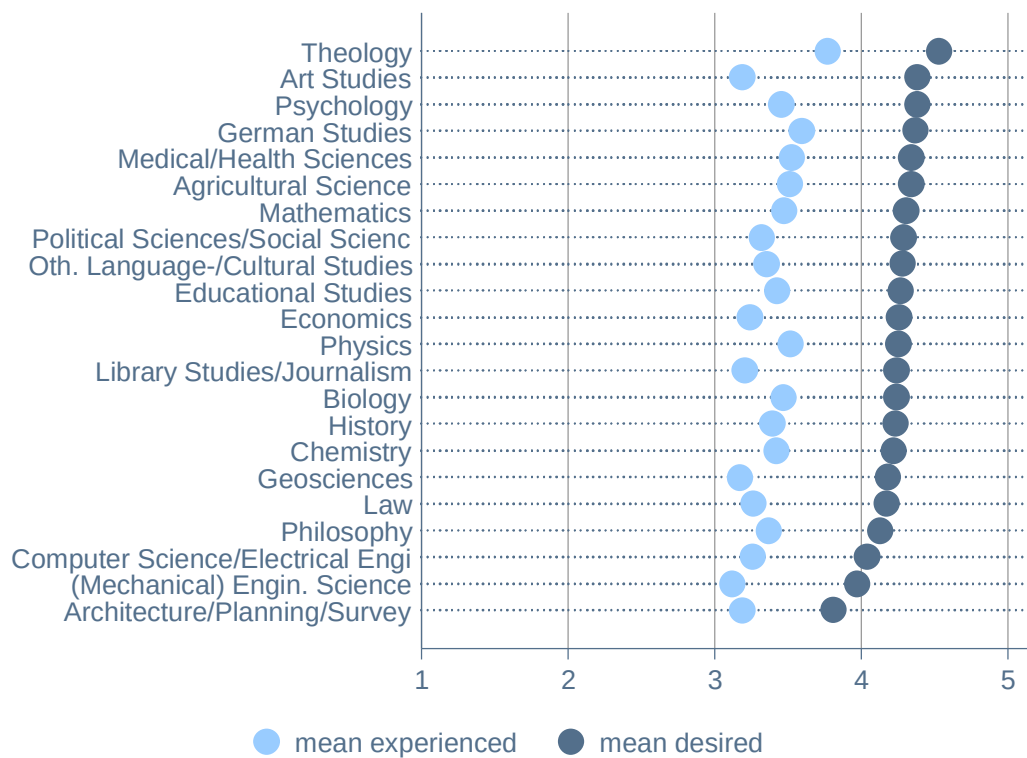


Source: ProFile 2009-2013, own calculations

A differentiated picture can be seen when the doctoral candidates were specifically asked how intensively they are supervised by their main supervisor in relation to how they would like to be supervised. Figure 6 compares the level of desired and experienced support for publishing in professional journals⁷. The average of desired support in all disciplines is above the figure for experienced support. The difference in size between these two factors depends significantly on the publishing cultures and norms in each discipline. In the social sciences and humanities, where monographs and anthologies are the dominant formats, the difference is greater in comparison to the natural sciences. Psychology and educational sciences show interesting anomalies; they are two former humanities-dominated disciplines which are undergoing substantial transformation processes.

⁷ For more examples and analyses, see page 231 in Konsortium Bundesbericht wissenschaftlicher Nachwuchs: Bundesbericht wissenschaftlicher Nachwuchs. buwin.de/site/assets/files/1002/6004283_web_verlinkt.pdf

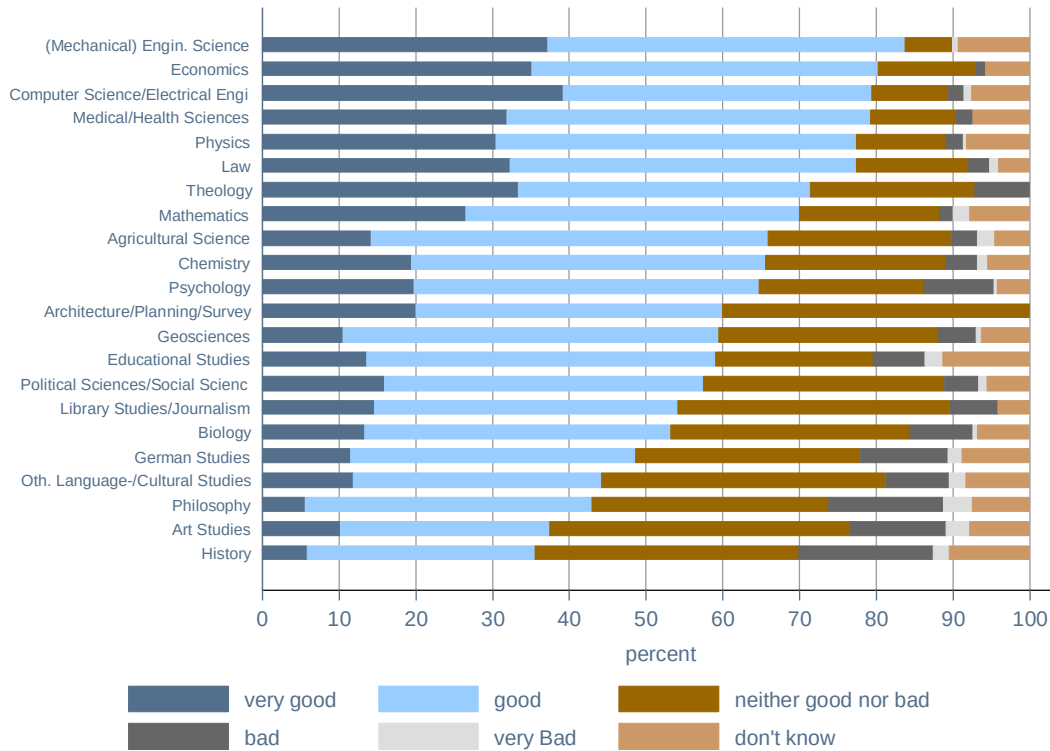
Figure 7 Experienced and desired supervision in the field of "questions with regard to content"



Source: ProFile 2009-2013, own calculations

A slightly different picture becomes apparent when looking at how intensively doctoral candidates are supervised compared to how they would like to be supervised as to questions with regard to content. They would like to have a somewhat more intensive support than in the previous example. At the same time, however, the experienced supervision level is higher, although it shows a smaller difference here between experienced and desired supervision. However, across all of the disciplines, the picture is more homogeneous and the variations in differences between experienced and desired support are less pronounced.

Figure 8 Assessment of the occupational perspective after completion of the doctorate



Source: ProFile 2009-2013, own calculations

What happens after the completion of the doctorate in terms of occupation? This question is hotly debated among doctoral candidates as well as in scientific politics, especially in view of the - statistically speaking - rather low probability of being appointed to a professorship. The diversity of the subsequent career paths is large and highly determined by the field of research.

While four-fifths in economics, physics, computer science/electrical engineering and engineering/mechanical science assess their career prospects as good or very good, the assessment in arts studies is less clear. Among the doctoral candidates in philosophy, history, German studies and other language studies/cultural studies, less than half express a positive assessment of their professional perspectives.

The plagiarism scandals from the perspective of doctoral candidates - excerpts from the main focus in 2013

The plagiarism scandal of the doctoral thesis by Karl-Theodor zu Guttenberg and those of other politicians have experienced wide media attention. Scientific misconduct, in relation to the acquisition of doctorates, has a long history and was already the subject of public debate in the 19th century⁸. The most recent plagiarism scandals have certainly raised many legitimate questions about the quality and quality control of dissertations in Germany. At some point, however, it seemed as if the discussion about "Dr. ctrl. c. Guttenberg"⁹ put the whole scientific community under general suspicion.

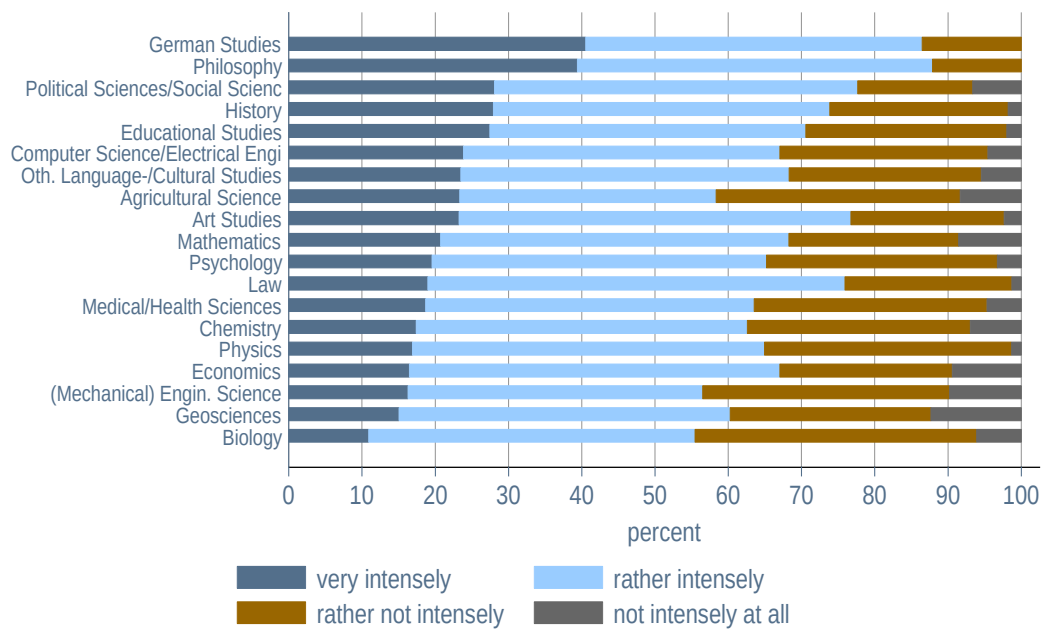
The doctoral candidates in ProFile had been observing this public debate while working on their own dissertations. Therefore, we have dedicated last year's surveys to this topic and here we present some of the results.

Two-thirds of the ProFile doctoral candidates state that they follow respectively followed the debate on scientific misconduct and revoked doctoral degrees, "quite intensely" or "very intensely". A minority of around five percent state that they have not followed the debate at all. This includes many who came to Germany specifically to pursue a doctoral degree here (so-called educational migrants).

⁸ An equivalent from the 19th century: Theodor Mommsen: Die Deutschen Pseudodoktoren.
http://de.wikisource.org/wiki/Die_deutschen_Pseudodoktoren

⁹ The title of a previous article: <http://www.sueddeutsche.de/karriere/wissenschaftler-ueber-plagiatsvorwuerfe-dr-strg-c-guttenberg-1.1063082>

Figure 8. Intensity level in relation to following/having followed the debate on scientific misconduct and revoked doctorates



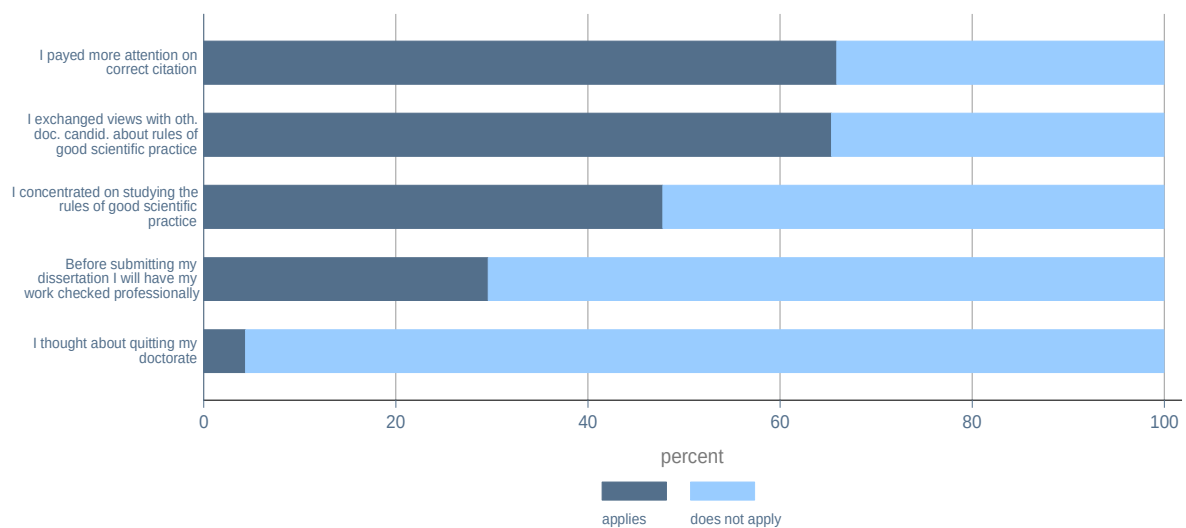
Source: ProFile 2009-2013, own calculations

Table 1 Evaluation of the debate (quantity in percent)

	The debate on plagiarism in doctorates...			
	Strongly agree/rather agree	Do not know/cannot judge	Strongly agree/rather agree	
...has harmed the reputation of doctorates	80.4	9.7	10	...has enhanced the reputation of doctorates
...has contributed to the clarification about misconduct.	79.7	5.9	14.4	...has not contributed to the clarification about misconduct.
...has damaged the credibility of science.	72.8	10.4	16.9	...has enhanced the credibility of science.
....was highly emotional	67.7	20.4	11.9	...was not emotional enough.
...leads to better doctorates in the long run	63.7	20.9	15.4	...leads to worse doctorates in the long run
...has damaged the credibility of Germany's position in science.	52.2	24.5	23.3	...has enhanced the credibility of Germany's position in science.
...should have been conducted exclusively within the scientific community.	41	37.3	21.6	...should have been conducted exclusively outside of the scientific community.

A clear majority of participants indicated that the debate on plagiarism has damaged the reputation of doctorates and science in general. At the same time, there is also something positive to be said about it: In their view, the debate has contributed to the clarification regarding plagiarism cases and will lead to better dissertations in the long run.

Figure 9 Personal consequences derived from the debate on revoked doctorates



Source: ProFile 2009-2013, own calculations

To get an impression about how the debate on revoked doctoral degrees influences the work of doctoral candidates, we asked about the personal consequences which derived from the debate. We found that two-thirds of the doctoral candidates have discussed what "good scientific practice" is with other do ones.

In most cases, the doctoral degree was revoked because in substantial parts of the work the use of someone else's ideas was not sufficiently identifiable - in other words, the citation rules were violated. It is therefore not surprising that almost two-thirds of the doctoral candidates claim to have put more attention on correct citation as a result of the debate. Nearly half of the doctoral candidates have actually engaged in informing themselves about the rules of good scientific practice, while just over half merely discussed the topic with other doctoral candidates.

A very different development can also be seen here: after all, almost a third of doctoral candidates plan to have their dissertation checked professionally for possible cases of plagiarism before submission. In this context, it should be noted that the efficiency of the software available on the market is seen critically¹⁰.

Lastly, nearly five percent say they have been thinking about not continuing their doctoral project as a result of the debate.

¹⁰ Cf.: Weber-Wulff, D. (2013). Technische Möglichkeiten der Aufdeckung von Plagiaten. In T. Dreier (Ed.), Plagiate. Wissenschaftsethik und Recht (1st ed., pp. 135–154). Tübingen: Mohr Siebeck.