

Ph.D. Graduates in the Humanities and Social Sciences: What do they do?

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Abstract

In recent years, more and more doctorate holders in Belgium and other OECD countries are employed in jobs outside academia. Particularly little is known about careers of graduates in the social sciences and the humanities (SSH). Therefore, this paper addresses several aspects of their careers. Based on the Belgian CDH data 2010, 919 doctorate holders were surveyed. We found that academia is the largest sector of employment for doctorate holders in humanities and social sciences but there is variation among cohorts and various subdisciplines within SSH. Only for a minority of the doctorate holders working outside higher education, a doctoral degree is required. Compared to other fields of study, doctorate holders in SSH experienced a difficult transition from academia to other sectors of employment. Despite these findings, Ph.D. holders in SSH feel their research experience is an asset for their current job. Future research needs to explore how the training of Ph.D. students can facilitate the transition to the non-academic labour market.

In the past two decades, there has been a sharp increase in the number of doctorate holders in the OECD member countries (Cyranoski et al., 2011). The number of doctoral degrees earned in OECD countries grew by 40%, from 140,000 in 1998 to 200,000 in 2006 (Auriol, 2010). This is also the case in Belgium where the number of the doctoral degrees awarded by the five Flemish universities has grown from 595 doctoral degrees in 1998-1999 to 1091 in 2006-2007 (Vlaams Ministerie voor Onderwijs en Vorming, various years).

The increase in the number of doctorate holders shows no sign of slowing down because most countries are investing in human capital and see highly educated workers as key to future economic growth. As doctorate holders are specifically trained to conduct research, they are considered most likely to contribute to the advancement and diffusion of knowledge and technologies and are often seen as one of the key players behind innovation- and knowledge-based economic growth (Auriol, 2010).

Traditionally, doctoral training was regarded as preparation for a position within academia. The increase in the number of people with doctoral qualifications combined with a lack of job opportunities at the universities have forced more and more doctorate holders to look for jobs in non-academic sectors (Mangematin, 2000). Given the need for highly trained professionals in other sectors of the knowledge-intensive industry, finding a job beyond the traditional academic labour market should not pose a problem for doctorate holders. Doctorate holders in the applied sciences, the natural sciences or medical and health sciences often cooperate with non-academic organizations during their doctoral training which creates career perspectives outside academia. These sectors also actively look for highly trained professionals to further their innovation- and knowledge-driven activities (Enders, 2005). However, such opportunities are rather limited for doctoral students in the humanities and social sciences. This may hamper their transition from the university to the non-academic sectors. While the interest in doctorate holders has grown in the non-academic labour market, little is known about the non-academic careers of doctorate holders in general and of doctorate holders in the social sciences

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and the humanities, in particular. Knowledge about doctorate holders' professional situation (i.e. sector of employment, type of contract and relation with the Ph.D.), their perception of the transition from university to other sectors and the advantages of their qualification level is limited.

This paper addresses the careers of Ph.D. holders in social sciences and the humanities (SSH) who obtained their doctoral degree between 1990 and 2009 at a Belgian university in the light of the issues outlined above.

- A first objective is to assess what the professional situation is of doctorate holders in SSH and how this evolves over time. In addition, we will investigate whether there are differences in careers among various groups and between cohorts of doctorate holders within the social sciences and humanities.
- The second objective is to assess whether Ph.D. holders in SSH are overqualified for their jobs and whether there are differences in the minimum required level of education for the jobs they hold among the various disciplines within social sciences and humanities.
- The third objective is to assess how doctorate holders in humanities and social sciences experienced the transition from university to the non-academic labour market. Do doctorate holders in SSH experience more difficulties with the transition from university to other sectors of employment compared to doctorate holders from other scientific disciplines? In addition, are there differences in perceived and experienced transition problems among the various disciplines within social sciences and humanities?

I. Method

This study is based on the Belgian data from the Careers of Doctorate Holders survey 2010. The Careers of Doctorate holders (CDH) project was initiated in 2004 by the OECD in collaboration with the UNESCO and EUROSTAT. The project aims at measuring career paths and mobility of doctorate holders. A first data collection was held in December 2006. The second Belgian CDH was conducted between June and November 2010 by the Belgian Science Policy Office. In order to obtain the best possible coverage of the target population a sampling frame was built based on the administrative databases from the Belgian universities of doctorate holders who graduated since 1990.

All doctorate holders who graduated between 1990 and 2009 at one of the Belgian universities, received an invitation letter including an ID code and a password to access the Belgian CDH 2010 web-based survey.

The Belgian CDH data provide information concerning doctorate holders' personal and educational characteristics, professional situation, Ph.D. holders' career and mobility, and their self-perceived skills. It also contains the doctorate holders' retrospective employment history. Respondents were asked to record chronologically their main professional activities (i.e. jobs) from graduation to the time of the survey. Respondents could record up to twenty activities. For each activity a range of data was collected such as start and end dates, type of contract, occupation and sector of employment.

For this paper we created snapshots of the respondents' professional situation at three intervals: 1 year, 3 years and 10 years after graduation.

In total, 4549 respondents filled out the questionnaire. The overall response rate was 26.5%. Among all respondents, 21% was holding a doctoral degree in the social sciences or humanities (N=919). Of these, 57% (N=525) held a degree in the social sciences and 43% (N=394) in the humanities. A closer look at the various disciplines within SSH showed that those holding a doctoral degree in language and literature represented the largest group (18.3%), followed by Ph.D.'s in economics and business administration (17.7%) and psychology and educational sciences (17.6%) (See Table 1).

Table 1
Disciplines Within Social Sciences and Humanities

Discipline	N	%
Language and literature	168	18.3
Economics and business administration	163	17.7
Psychology and educational sciences	162	17.6
Philosophy & ethics, arts, religious studies and other humanities	126	13.7
Archaeology and history	100	10.9
Political and social sciences	83	9.0
Law	69	7.5
Other social sciences	48	5.2
Total	919	100.0

More men (N=554) than women (N=365) completed the questionnaire. The respondents obtained their doctoral degree in social sciences or humanities at a Flemish university (65.9%) or at a French speaking Belgian university (34.1%). The mean age at which they obtained their Ph.D. was 32.4 years ($SD=5.7$) and at the time of the survey they had on average 7.2 years ($SD=5.1$) of work experience after graduation. Half of the respondents (51.0%) were still employed in their initial job after graduation, 29.3% of the doctorate holders indicated to have had one previous job, 18.2% had between 2 and 4 previous jobs and 1.3% of the respondents had changed jobs at least five times.

II. Results

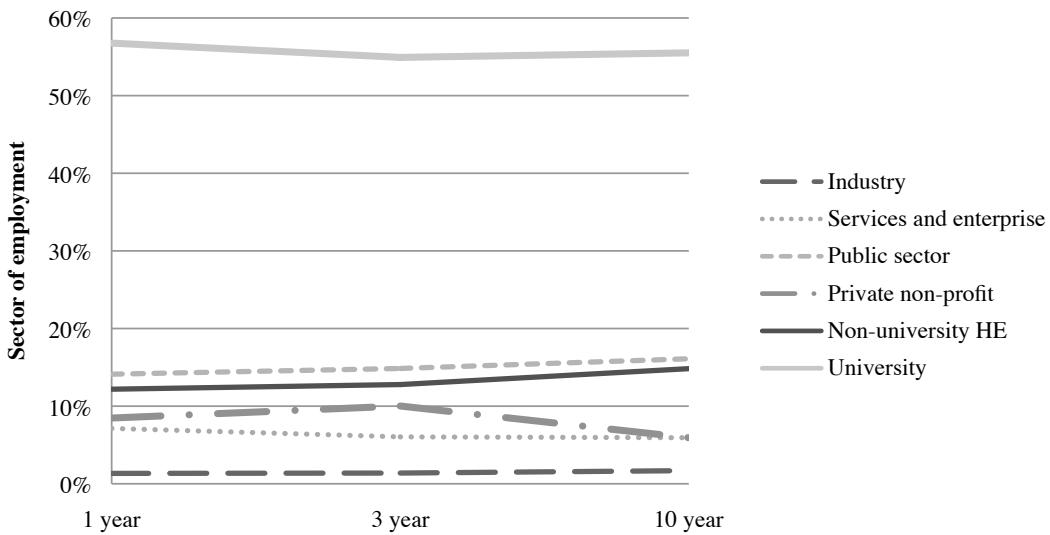
A. Professional Situation of Doctorate Holders in Humanities and Social Sciences

Sector of employment. After graduation, doctorate holders started working in a wide range of sectors, at the university as well as in other sectors such as industry, service and other profit sectors, the private non-profit sector, the public sector and non-university higher education sector. Our results show that 53.3% (N=472) of the Ph.D. holders in the SSH had at least one employment in a sector outside university between graduation and December 1st 2009 while 46.7% (N=413) of the respondents remained working at a university after graduation without ever moving to other sectors of employment.

Figure 1 shows the sector of employment of Ph.D. holders in SSH by the time since obtaining the doctorate. One year after graduation 56.8% of the doctorate holders holds a position (often as postdoctoral researcher) at a university. The percentage of doctorate holders working at a university remains remarkably stable over time. Ten years after graduation, 55.5% of the doctorate holders still works in academia¹. The public sector and the non-university higher education sector are the second and the third largest sectors of employment for SSH doctorate holders. The percentage of Ph.D. graduates working in these sectors increases slightly over time to respectively 16.1% and 14.8% ten years after obtaining the doctorate. Doctorate holders in SSH are only rarely employed in industry (about 1.5%) and this percentage remains stable over time. The percentage of SSH Ph.D. graduates working in the service and other profit sectors also remains relatively stable over time, with about 7% one year after graduation and about 6% ten years later. Only in the private non-profit sector the percentage of SSH Ph.D. graduates decreases over time.

1 It has to be taken into account that not all respondents had 10 years of work experience.

Figure 1. Sector of employment of Ph.D. graduates in SSH, 1 year, 3 year and 10 year after graduation.



Employment situation three years after obtaining the doctoral degree

We might expect considerable differences between various groups of Ph.D. holders in social sciences and humanities. In this study, the professional situation of doctorate holders in SSH three years after graduation was compared according to Ph.D. completion cohort, discipline and gender. The time point of three years after graduation was chosen for two reasons: it is far enough into their career for most Ph.D. holders to have a career-determining job, and early enough in their career to take into account the number of Ph.D. holders who have graduated more recently.

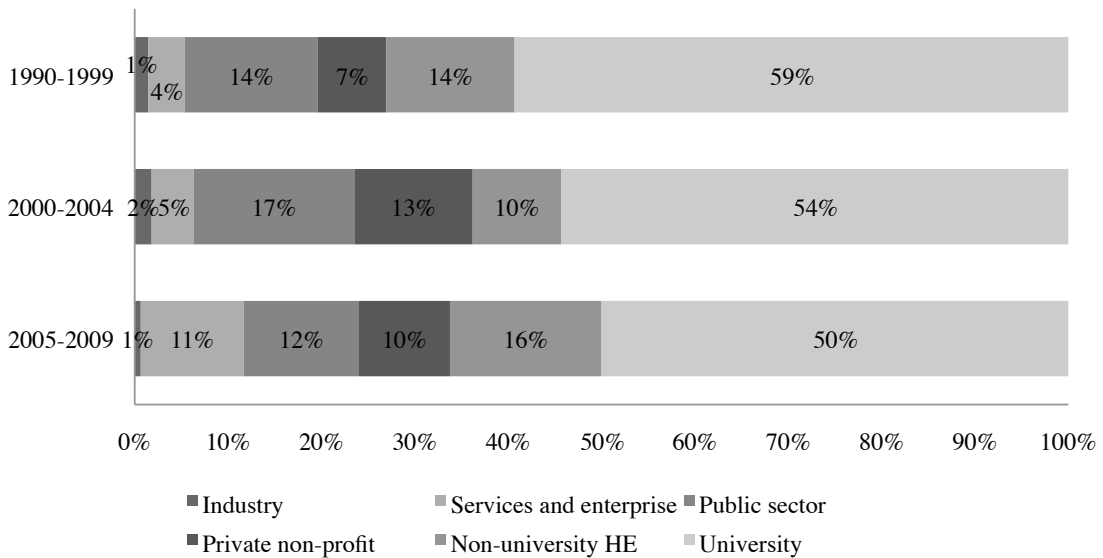
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Cohorts of Ph.D. holders. The labour market for doctorate holders has changed significantly over the last two decades. Were doctorate holders who graduated earlier more likely to get a position at a university compared to doctorate holders who graduated recently?

In this section three cohorts of SSH doctorate holders who graduated in different time spans are compared. The first cohort consists of respondents who graduated between 1990 and 1999 (N=258), the second cohort consists of those who graduated between 2000 en 2004 (N=270) en the last cohort consists of those who graduated between 2005 en 2009 (N=391).

There is a significant difference with regard to the sectors of employment among the three cohorts ($\chi^2=19.0$, $df=10$, $p=.040$). For all three cohorts academia is the largest sector of employment (see Figure 2). However, the percentage of Ph.D. graduates holding a position at a university three years after graduation is smaller in the two most recent cohorts. Doctorate holders who obtained their Ph.D. between 2005 and 2009 are more likely to be employed in the service and other profit sectors and in non-university higher education institutions compared to doctorate holders who graduated earlier.

Figure 2. Sector of employment of Ph.D. graduates in SSH 3 years after graduation according to Ph.D. cohort

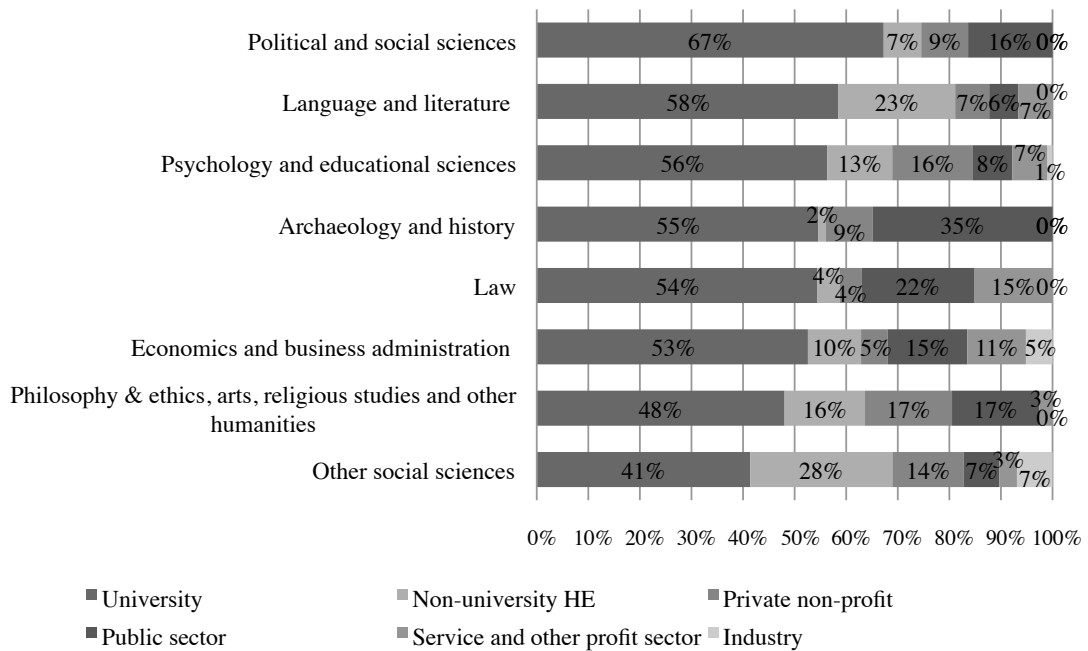


Scientific discipline. Ph.D. graduates in SSH represent a rather heterogeneous group. So, it could be expected that the share of doctorate holders in their various sectors of employment is closely related to the range of disciplines within SSH.

The results indeed show significant differences in sector of employment over the various disciplines ($\chi^2=112.1$, $df=35$, $p<0.001$). Ph.D. graduates in political and social sciences are most likely to work at a university three years after graduation (67%), whereas only 48% of the Ph.D.'s in philosophy, arts, religious studies and other humanities and 41% of the Ph.D.'s in other social sciences are employed in academia at that time (See Figure 3). Of all Ph.D. graduates, those with a degree in other social sciences (28%) and language and literature (23%) are most likely to work in the non-university higher education institutions. Together with the share working at a university, 81% of Ph.D. graduates in language and literature is employed in higher education three years after graduation.

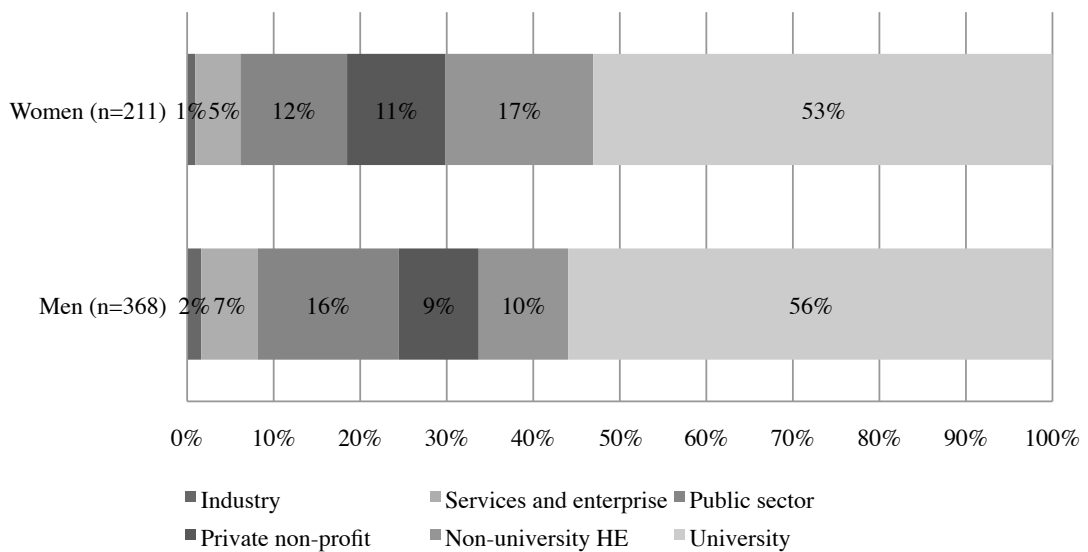
The public sector is the second largest sector of employment for doctorate holders in archaeology and history (35%), law (22%), political and social sciences (16%) as well as economics and business administration (15%). Ph.D. holders in philosophy, arts, religious studies and other humanities are equally employed in the public and private non-profit sectors (17%), followed by the higher non-university education sector (16%). For degree holders in psychology and educational sciences, the private non-profit sector (16%) is the second most important sector of employment.

Figure 3. Sector of employment 3 years after graduation according to the different disciplines within social sciences and humanities



Gender. We investigated whether the sector of employment three years after graduation differs between men and women but no significant differences were found ($\chi^2=7.8.0$, $df=5$, $p=0.165$) (See Figure 4).

74 Figure 4. Sector of employment 3 years after graduation according to gender



Intersectoral mobility. Does the first career-oriented job determine the doctorate holders' further career? In other words, are SSH doctorate holders who start their career in a certain sector of employment more likely to spend their entire career in this sector?

In the CDH-2010 data, the mobility of doctorate holders between different sectors of employment is rather limited. Table 2 demonstrates that the initial sector of employment is a strong indicator of the sector of employment three years after graduation ($\chi^2=1953.6$, $df=25$, $p<0.001$).

At least 80.6% of the Ph.D. graduates who started working in a certain sector one year after Ph.D. graduation, are still employed in this sector three years after obtaining their doctoral degree. Of all responding doctoral graduates who started working at a university, 9.7% have moved to another sector of employment and have mainly made the transition to the public and higher non-university education sector, respectively 3.4% and 2.8%. For Ph.D. graduates who are employed on the non-academic labour market one year after they graduated, a minority of them (between 2.2% and 9.7%) have moved back into academia. Similar findings were obtained by Enders for Germany (2002): the sector of employment of the entry job is a clear determinant for the sector of employment in the later career, resulting in a rather low mobility of German doctorate holders across various sectors of employment.

Table 2

Sector of Employment One Year After Graduation According to Sector of Employment Three Years After Graduation

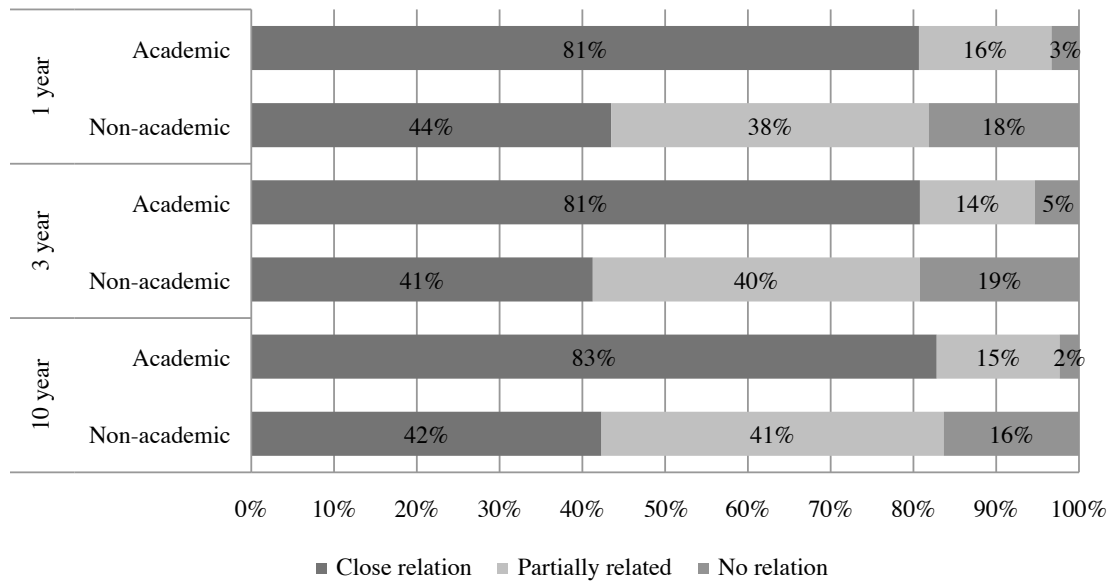
	Sector of employment 3 years after Ph.D.						N
	Industry	Service and other profit sector	Public sector	Private non-profit	Non-university HE	University	
Sector 1 year after Ph.D.							
Industry	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6
Service and other profit sector	0.0%	80.6%	6.5%	3.2%	0.0%	9.7%	31
Public sector	0.0%	0.0%	92.6%	0.0%	0.0%	7.4%	68
Private non-profit	0.0%	0.0%	0.0%	97.8%	0.0%	2.2%	46
Non-university HE	0.0%	1.6%	1.6%	0.0%	93.7%	3.2%	63
University	0.3%	1.0%	3.4%	2.1%	2.8%	90.3%	290

Permanent vs. Temporary Employment. The proportion of respondents with permanent contracts increases with the time since graduation. One year after graduation 56% of the Ph.D. holders in SSH held a permanent contract, by three years this had increased to 69%, and among those who had graduated 10 or more years ago it even reached 90%. Women are more likely to be in temporary employment than men. Three years after graduation 37% of the women compared to 28% of the men had a temporary contract ($\chi^2=5.7$, $df=1$, $p=.017$). Women were more likely to be employed on a temporary basis in academia, higher non-university education institutions and in the private non-profit sector.

Full-time vs. Part-time. The majority of doctorate holders in SSH worked full-time and the percentage working part-time remained relatively stable over time. At all three time points (i.e. 1 year, 3 year and 10 year after graduation), only about 15% of the respondents was working part-time. More women than men were working part-time three years after obtaining their degree (20% vs. 13%) ($\chi^2=4.9$, $df=1$, $p=.027$).

Relation with doctoral research. For about 80% of the doctorate holders in SSH who worked at a university, the job content one year, three years and ten years after graduation was closely related to their doctoral research (See Figure 5). Among those working in other sectors about 40% indicated that there was a close relation between their doctorate and their job content, while another 40% indicated there was a partial relation. Only a small minority of Ph.D. graduates working in academia reported that their current job had no relation with their doctorate (between 2% and 5%) whereas this was the case for almost one fifth of the doctorate holders in non-academic sectors.

Figure 5. Relation between the doctoral research and the job content of Ph.D. graduates in SSH 1 year, 3 year and 10 year after graduation.



B. Qualification Requirements

The relation between qualifications and the demands on the labour market is an important indicator of the professional relevance of a doctoral degree (Schwabe, 2011). Are doctorate holders in SSH overqualified for their current job? The minimum level of education required for the principal job was a doctoral degree or postdoc experience for 59.9% of the respondents (See Table 3). This indicates that at least 36.7% of the Ph.D. graduates in SSH worked in jobs that require no more than a master-level degree, a teacher training degree or a post-graduate degree.

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Table 3
Minimum Required Level of Education for the Principal Job

	N	%
Master (or lower qualification)	295	32.7
Teacher training course	18	2.0
Master after master or post-graduate	18	2.0
Doctorate	474	52.5
Postdoc experience	67	7.4
Other	16	1.8
Unknown	14	1.6

The need for a doctoral degree in SSH as minimum required level of education for the principal job depends strongly on the sector of employment ($\chi^2=393.7$, $df=10$, $p<.001$). For the majority of doctorate holders working at a university or in non-university higher education institutions, a doctoral degree is the minimum required qualification level. However, Ph.D. graduates who are employed in other sectors outside higher education are often formally overqualified for their job (See Table 4). For those employed in the service and other profit sector even 81.5% claims that a Ph.D. is not required for their current position.

Table 4

How Strongly is a Doctoral Degree in SSH Needed for the Principal Job According to Sector of Employment

Sector	Ph.D. not required	Ph.D. required	Unknown/other
Industry	66.7%	26.7%	6.7%
Service and other profit	81.5%	7.7%	10.8%
Public sector	72.5%	24.8%	2.6%
Private non-profit	75.7%	13.5%	10.8%
Non-university HEI	39.3%	59.0%	1.7%
University	10.3%	88.0%	1.7%

We performed a Multiple Classification Analysis (MCA) with as dependent variable the minimum level of education required for the principal job (0=doctorate not required, 1=doctorate required) and we controlled for gender, current sector of employment, research-related job vs. non-research job, involvement in innovation and Ph.D. cohort. The results show that there are small but significant differences in the required level of education across the various SSH disciplines. A doctoral degree is most frequently required for Ph.D. graduates in political and social sciences and language and literature while it is less often needed for Ph.D. graduates in psychology and educational sciences and archaeology and history.

C. Transition to the Non-Academic Labour Market

A doctoral degree no longer guarantees Ph.D. graduates a career in academia, a situation which stimulates doctorate holders to search for a job in the non-academic labour market. How do doctorate holders in social sciences and humanities experience the transition from university to the non-academic labour market? In the CDH survey, doctorate holders employed in other sectors outside academia, were asked to give their opinion about seven statements concerning their transition from academia to the non-academic labour market. Each item was scored on a 10-point Likert-scale ranging from 1 (totally disagree) to 10 (totally agree). Based on this 10-point scale three categories were defined: 1. agree not at all (1-3.3), 2. agree to a moderate extent (3.3-6.6) and 3. agree to a great extent (6.6-10).

Table 5

Transition Scores (%) of SSH Doctorate Holders on Statements Used in the Belgian CDH Survey

Transition statements	N	Not at all	To a moderate extent	To a great extent
I was properly prepared for a career outside the university	433	39.0%	25.6%	35.3%
If I could do my career over again, I would not have proceeded to a doctor's degree and I would have started immediately outside the academic environment	428	64.3%	17.8%	18.0%
It was clear to me what career opportunities I could aspire to after my doctorate was granted	432	31.7%	29.9%	38.4%
My doctorate helped me on the job market	430	24.0%	20.2%	55.8%
Cooperation with other sectors made the transition from the university easier	383	47.5%	24.5%	27.9%
Thanks to my doctorate I was able to offer extra added value to the company/organization where I work	417	12.9%	13.2%	73.9%
If I could do my career over again, I would make the same choices	413	16.9%	23.0%	60.0%

The transition questions were answered by 47% (N=435) of the respondents. The results show that 39.0% of the Ph.D. holders did not feel well prepared for the non-academic job market (See Table 5). However, 60.0% are satisfied with the career choice they made, 55.8% stated that their doctorate helped them on the job market, and 73.9% consider their doctoral degree as an extra added value for their employer.

Based on these seven items, a transition difficulty scale was computed ranging from 1 to 10. The lower the score, the more difficult the transition to other sectors of employment outside academia was perceived. The Cronbach's alpha for the transition difficulty scale was 0.73.

As stated earlier, the perceived transition difficulties were expected to differ according to the scientific discipline. There appeared to be significant differences in the mean score on the transition scale among the various disciplines ($F=5.536$, $df=4$, $p<.001$). In particular Ph.D. graduates in humanities perceive significantly more difficulties with the transition to the non-academic labour market than those in other disciplines (See Table 6). Doctorate holders in the social sciences as well as those in the natural sciences experienced the transition from university to other sectors of employment as more difficult compared to doctorate holders in medical and health sciences or applied sciences.

In addition, the perception of how Ph.D. graduates experienced their transition to the non-academic labour market differs among the individual subdisciplines ($F=2.031$, $df=7$, $p=.050$). Ph.D. graduates in economics and business administration experienced significantly fewer transition difficulties compared to Ph.D.'s in language and literature (*Mean difference*=0.987, $p=.019$).

Table 6

How Easy was the Transition from Academia to other Sectors of Employment for the Different Research Fields?

	Mean transition score	SD
Medicine and health sciences	6.47	1.57
Applied sciences	6.39	1.58
Social sciences	6.28	1.73
Natural sciences	6.19	1.61
Humanities	5.89	1.87
Total	6.28	1.63

III. Conclusion

The aim of this study was to address the careers of Ph.D. graduates in SSH who obtained their doctoral degree at a Belgian university in order to get a broader picture of doctorate holders' professional situation, the qualification requirements for their principal job and their experience of the transition from academia to the non-academic labour market.

Academia is the largest sector of employment for SSH doctorate holders (See objective 1). However, doctorate holders who graduated only recently (between 2005-2009) tend to move more often and at an earlier stage in their career to other sectors of employment, especially to non-university higher education institutions. The increase in the percentage of recently graduated doctorate holders working in the higher education sector outside university could possibly be attributed to the "academization" of non-university higher education in Flanders: a process initiated at the end of the previous century by which master-level programs at non-university colleges have become more research-based. As a result, a doctoral degree has become more desirable as a minimum requirement for a career in non-university higher education institutions, although it is still not formally obliged. The sector of employment differs significantly among the various SSH disciplines. Doctorate holders with a Ph.D. in political and social sciences, language and literature and psychology and educational studies most often hold a position at a university, while less than half of the respondents in philosophy & ethics, arts, religious studies and other humanities and in other social sciences are employed in this sector.

For the majority of SSH Ph.D. graduates, a doctoral degree was the minimum required qualification level for their principal job (See objective 2). However, our results suggest strong differences among the various sectors of employment. A doctoral degree in social sciences or humanities is especially needed in university and non-university higher education institutions. The fact that for approximately 60% of the doctorate holders in non-university higher education institutions a doctoral degree is required is in line with the increasing 'academization' of the non-university higher education sector. In contrast, a doctoral degree is less often required for doctorate holders working in other sectors outside higher education. However, it should be noticed that the various sectors have different rule systems. Formal degree requirements exist in the public sector but are not common in other sectors such as industry and the service and other profit sector. Thus, doctorate holders in these latter sectors may be overqualified in degree terms but perhaps not in terms of job content and job requirements.

In line with our expectations (See objective 3), the findings show that SSH Ph.D. holders experience more problems with the transition from academia to other sectors of employment compared to doctorate holders in the applied sciences or the medical and health sciences. This could be attributed to Ph.D. holders in these latter research fields being more familiar with other sectors of employment, for example through earlier cooperation with other sectors and organizations. Another reason might be that these sectors more actively recruit Ph.D. holders from fields like applied sciences and medical

and health sciences, as the subject of their doctorates and technical skills they acquired are more useful in these non-university sectors, compared to those of doctoral degrees in SSH.

A limitation of the present study is that we do not have reliable data concerning how many Ph.D. graduates in SSH either stay working in higher education or make the transition to the non-academic labour market. Subsequently, we cannot control for an over- or underrepresentation of either group in our sample. In our study, a fairly large percentage of respondents was employed in higher education, respectively 55% and 13% was working at a university and in non-university higher education institutions three years after graduation. However, these results are similar to the findings obtained from the Vitae report (2010). In the UK, three and a half years after graduation, 67% of the PhD graduates in arts and humanities and 62 % of the people holding a doctoral degree in social sciences were working in higher education (Hunt et al., 2010).

Overall, our results suggest that many doctorate holders in social sciences and humanities did not feel fully prepared when making the transition from university to other sectors of employment and those who enter the non-academic labour market are often employed below their level of qualification. Nevertheless, most do feel their research experience is an asset for their current job. Further research is needed to investigate how the content and format of the training of Ph.D. students and Ph.D. holders in social sciences and humanities can be transformed to facilitate the transition to the non-academic labour market.

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