

THE CHANGING CAREER PREFERENCES OF DOCTORAL STUDENTS

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What do doctoral students want? What is the type of career that they wish to embrace after they obtain the PhD? These questions have become of importance to higher education policymakers over the past 20 years as claims that we are entering the ‘knowledge economy’ became mainstream and ‘knowledge producers’ were found to be produced in universities. In the United States as well as in European and Commonwealth countries, many manifestos promote transformations in doctoral education, usually suggesting that the acquisition of ‘generic skills’ become a central part of the program so that graduates can put their knowledge to effective use outside academia. But, of course, students must be attracted by such opportunities, so another central theme is the need to change the doctoral students’ perspective about the job market: tenure-track positions in research universities are not the only way to go for PhDs and other career options must be considered, including jobs in industry. On the other hand, the authors of an equally abundant literature condemn these trends and voices fears that, by being too integrated to economic and political spheres, academics will put an end to their specific, original contribution to society as its disinterested critics.

Among this plethora of discourses, however, we find few that seem concerned with what doctoral students actually envision as the best career option for themselves and, so far, none that tackles the issue of *how* the students developed these professional projects. In this exploratory study, we will attempt to understand the links between a student’s educational experience and his or her

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career preferences, laying ground for further examination of the professional development process of graduate students.

Continuation and transformation through doctoral education

Doctoral education is the main process by which the academic community reproduces itself. During the course of their training, PhD students develop an academic habitus corresponding to their discipline (Bourdieu 1988). They incorporate the perspective of their field's senior members, which generally involves specific disciplinary points of view (such as a given set of legitimate problems and methods to solve them, see Delamont, Parry & Atkinson 2000) and general academic principles (such as the desire to exchange publication of research results for recognition, see Hagstrom 1965). Graduate students go through a protracted apprenticeship period and their success depends on adequate socialization. According to Lovitts (2001), those who do not become socially and intellectually integrated cannot acquire the appropriate 'cognitive maps' – a concept in many ways overlapping with that of habitus – and are likely to leave graduate school. These processes of social and intellectual integration are strongly associated with the structure of opportunities offered to graduate students: funding, working space, and helpful faculty members and peers. These resources, when they are available to the student, contribute to his or her integration in the field and, consequently, to the development of corresponding professional perspectives that give meaning to the pursuit of the PhD. As a consequence, a majority of students usually envision themselves in academic employment after graduation: in the United States, positions in higher education (college/university) were the 'most desired' by 61,0% of graduate students², a proportion which varied greatly along disciplinary lines, from a 29,8% low in chemical engineering to a 89,4% high in sociology (Kannankutty & Kang 2001). Little data is available for other countries but we know for instance that, in Australia, academic employment is also considered the most attractive option by graduate students, 34,2% of them hoping for academic employment and 32,4% for a postdoctoral position after graduation (Harman 2002).

² Seemingly excluding students in the humanities but including those in the social sciences.

The effectiveness of academic socialization explains the relative stability of many features of the academic world. The PhD having become, over the course of the twentieth century, a *sine qua non* condition of academic employment, it ensures that academics hold a common set of dispositions, notwithstanding their disciplinary differences. However, change is also an intrinsic feature of the university environment. The scientific fields are characterized by the constant struggle of their members, who compete for the creation and legitimization of ‘true knowledge’. This internal tension results in what Bourdieu calls a ‘conflictual cooperation’, and leads to the continuous redefinition of the disciplinary boundaries that define appropriate research problems (Bourdieu 1975, 2001; Hagstrom 1965). In this system, graduate supervisors, by expecting their supervisees to produce ‘original’ research that will contribute to the evolution of their field (Delamont, Parry & Atkinson 2000), plant the seeds of future mutations of their discipline.

These internal dynamics are not the only factor of transformation. External forces also contribute to change in the academic world. Although academic, disciplinary criteria still dominate the distribution of research funds in Canada, it is clear that monies targeted for research problems considered ‘relevant’ by social, political or economic standards are increasing (Godin, Trépanier and Albert 2000). More often than before, such targeted research takes the form of multi-year institutional agreements between university researchers and non-university organizations, as in the case of the Networks of Centres of Excellence in Canada (Fisher, Atkinson-Grosjean & House 2001), Centres for Cooperative Research in Australia or Engineering Research Centers in the United States. Scientifically broader than short-term contracts, such cooperative research agreements become a source of thesis topics and doctoral students get involved in them (Harman 2004). The leaders of such projects, who are already the most active researchers in terms of publications (Godin & Gingras 2000), benefit from increased funding and prestige, allowing them to recruit more graduate students. As they graduate and start careers of their own, former students are thought to perpetuate the research orientations of their supervisor, which include cooperative research. Other government initiatives, such as scholarship programs designed to encourage graduate students to design their research project with the needs of society and of the economy in mind, also contribute to the transformation of doctoral education. Graduate students trained in this context often interact with highly-qualified research professionals from outside academia at many stages of their thesis research, from problem selection to the formal evaluation

of the resulting thesis or dissertation (Gemme, Gingras & Milot 2003). According to the program prospectus, they are expected, after graduation, to help solve the penury of highly-qualified personnel in some areas of the 'knowledge economy'.

As greater numbers of doctoral students become part of cooperative research agreements, we might expect to witness a transformation of the dominant mode of the professional socialization process. Community boundaries shift to include a wider array of professionals outside the academic setting. Students involved in such cooperative research may be more likely to identify with other types of professionals than their peers involved in strictly-academic PhD training. Exposed to diversified career paths, they might develop a preference for non-academic employment after graduation, or at least envision a different role for themselves as academics. This shift, at least, is desired by the policymakers who design the cooperative research and scholarship programs, but is it actually occurring and, if so, to what extent and in which circumstances? In this paper, in order to attempt an answer to these questions, we will examine the career preferences of doctoral students involved in both types of research projects, cooperative and not. In an exploratory manner, we will analyze the variation in preferences between both groups and within each of them in order to identify significant associations between certain aspects of the educational experience of students and their professional projects.

Method

Our inquiry about the career preferences of doctoral students is part of a wider project concerning the research education of graduate students in Québec (Canada), both at the Master's and PhD levels and across all disciplines. We are specifically interested in the way in which the transformations of higher education policy and research practices toward a greater involvement of non-university organizations in universities affect graduate students experience and professional outcomes.

The first part of the project consisted of exploratory interviews of graduate students, recent PhDs, faculty members, university administrators and non-university researchers. The interviews covered the respondents' 'research biography' in order to apprehend the diversity of graduate training situations. An in-depth questionnaire was then developed to address most aspects of the

socialization process of aspiring researchers, based on previous studies of graduate education and findings from the exploratory interview study. The topics covered by the survey were: student characteristics (gender, age, responsibilities), topic selection, supervision, funding, collaborative experience (if relevant), research results (publication and commercialization), professional projects or actual employment, and student satisfaction³.

A total of 956 Master's degree and doctoral⁴ students and recent graduates have participated to the survey, which was Web-based. Respondents recruitment was oriented toward a greater representation of students involved in cooperative research in order to attain appropriate significance levels. As a result, 600 of our respondents were involved with non-university organizations in some way, varying from distant collaboration to high-intensity partnership. At least 104 of them received a scholarship specifically designed to support such cooperative research efforts. The remaining students (356 individuals) were not involved in cooperative research and are believed to experience more traditional training. Although respondents from all disciplines (sciences, engineering, social sciences and humanities) participated in our study, our analysis in this paper will be restricted to the experience and career preferences of students in the sciences and engineering⁵. In line with the important differences usually observed between disciplines (Becher & Trowler 2001), we found that the doctoral educational experience varied too widely along disciplinary lines to include sciences & engineering *and* social sciences & humanities students in the same tables. Moreover, only doctoral students, who are closer to the academic job market, will be considered at this moment. Consequently, a total of 162 individual respondents were included in this paper's analysis, among which 110 have claimed to have ties to non-university organizations.

³ The survey being mainly concerned about research education, no questions were asked about the coursework component of the doctoral program.

⁴ Only programs with a strong research components were included in the survey. Professional Master's degrees with less than half of their credits devoted to research, for instance, were not included.

⁵ Life and health sciences students were treated as a separate category and not included in the analysis for this paper.

Results

What are the career preferences of doctoral students in the sciences and engineering? As we can see in Table 1, the answer to this question greatly differs between the students who are involved in cooperative research with a non-university organization and those who are not.

Table 1. Preferred sector of employment of doctoral students in science and engineering

“In the future, in what type of organization would you prefer to work?”

	Non-collaborator		Collaborator	
	%	N	%	N
Firm (private sector)	15,7	8	27,5	30
University	62,7 ^a	32	37,6	41
Government organization	11,8 ^a	6	23,9	26
Other	5,9	3	5,5	6
Don't know	3,9	2	5,5	6
Total	100	51	100	109

^a : The actual number of students in this category is very significantly different from the expected figure. 1-p = 95,19%

The table shows very clear preference for the university sector among non-collaborating students, while their collaborating peers have more diverse professional projects, most (37,6%) still opting for university careers but also many being interested by work in the private sector (27,5%) and others considering that a job in the public sector (23,9%) is the best that could happen to them professionally. Interestingly, positions in government organizations have very little appeal to non-collaborating doctoral students, which either indicate that the students hold them in little esteem or that their role as employers of PhDs is largely unknown to traditional graduate students.

The single fact that a student is, during the course of his doctoral program, collaborating with a non-university organization is not sufficient to predict that he or she will be most interested in a career outside of higher education. Consequently, are there other dimensions of the students' research education experience that are associated with higher preference for non-academic employment? In an exploratory manner, we cross-tabulated all variables (either related to the research education experience or to the characteristics of the students themselves) with the career preferences of students in order to identify significant relations. To simplify the analysis, we have set aside the very few respondents who selected “other” (9) and “don't know” (8) and will only focus on students whose career preferences are to work in a firm (38), in a university (73) or in a

government organization (32). We carried the analysis first on the strata of non-collaborating students (46) and then on the strata of collaborators (97).

Non-collaborating students

Non-collaborating students interested in careers outside academia were few in our survey: only eight were most attracted to private sector positions and six to public sector opportunities. These small numbers may be accounted for the low levels of significance attained in most tables. However, in some respects, the fact that there is no significant difference between the non-collaborating students who prefer non-academic employment and those who would rather land a university position can be considered a finding.

The source of research funding is often believed to influence the orientation of researchers, so we could expect that receiving funding from a non-academic organization would have an effect on the professional orientation of aspiring researchers. However, only three students received such funding, two with plans to work in the university and one intending to work for a government organization. A greater proportion of university-bound⁶ doctoral students benefited from a major scholarship during their program (62,5% versus 42,9%), but the difference between the two figures is not significant. The only source of revenue that is very significantly associated with a career preference is that coming from teaching: 11 out of 32 university-bound students (34,4%) have been paid for teaching their own courses (as adjunct faculty members) while none of the non-university bound students had such an experience. The significant link between the two variables does not allow us to determine the direction of causality. In other words, we cannot tell whether the interest for an academic career came first, prompting the students to seek employment in the classroom, or if it is the teaching experience that induced the students' interest in academic positions. A mix of the two is probably a better explanation.

The support network of students during their doctoral program could also constitute an indicator of their career preferences. We expect that students who have contacts with non-university role models – such as researchers employed in government or in the industry – would be more likely to be interested in similar careers for themselves. However, our data for non-collaborating

⁶ Although the fact that a student would *prefer* to work in one sector does not assure that he or she *will*, we identify students who would prefer to work in a university as 'university-bound' and the others as 'non-university-bound' for lack of a simpler expression.

students does not support this hypothesis. We have asked students to identify the categories of people who have supported them during the course of their research project, including their supervisor, other professors, other students, and other types of professionals (researchers or not) employed outside of the university. The proportion of university-bound students who have been supported by non-university professionals (6,3%) is not significantly different from that of non-university-bound students (14,3%). Hence, it would be difficult to argue that, for students who are not involved in research partnerships with non-university organizations, preference for a non-academic career is developed by contact with diverse role models, in the context of the students' research project at least.

We finally expected that non-collaborating students who projected themselves in non-academic employment would be less interested in publishing research results in peer-reviewed journals or conferences, believing that publications would not be an asset for their future career in the private sector or in government. Here again, this hypothesis cannot be sustained in the light of our survey data: slightly more university-bound students have published (or given a paper) since the beginning of their doctoral program (90,6%) than their non-university-bound counterparts (78,6%), but the difference is not significant. Furthermore, an equal proportion of students in both categories have experienced peer-review: 78,1% of university-bound and 78,6% of non-university-bound students have, at least once, had an article or paper submitted to the evaluation committee of a journal or conference.

For students who have no ties to non-university organizations during their doctoral program, it is difficult to identify aspects of the research education experience that are related to preference for non-academic employment after the PhD. In many ways, in the sciences and engineering at least, these students seem to have quite similar experiences, except for the fact that university-bound students are more likely to teach their own courses. Consequently, other variables would have to be investigated in order to understand the career preferences of these students, including their previous work experience, their area of specialization, their perception of academic and non-academic careers, etc. More students would also have to be surveyed in order to facilitate analysis.

Table 2.**Summary of findings – Non-collaborating doctoral students in the sciences and engineering**

	Students preferring work in the university sector		Students preferring work in the private sector or government	
	%	N	%	N
Funding from a private foundation or other corporate source	9,4	3	7,1	1
Funding from major scholarship	62,5	20	42,9	6
Funding from adjunct teaching	34,4 ^a	11	0,0 ^a	0
Have received support or help from non-university professional (researcher or not)	6,3	2	14,3	2
Have published at least once (including papers given at conferences)	90,6	29	78,6	11
Have experienced peer-review at least once	78,1	25	78,6	11
Total		32		14

^a: Significant result.

Collaborating students

As our study focuses on students collaborating with non-university organization, more students in this situation responded to our survey. These students responded to a longer version of the questionnaire, which included questions about the nature and intensity of their cooperative relation with industry or community organizations. As we will see, student preference for one type of employment or another is often linked to differences in the relationship between the student and his or her research ‘partner’.

Table 3 shows that few aspects of the collaborating students’ experience significantly differ along career preference lines, for aspects concerning all students at least. A slight trend can nonetheless be observed: in general, university-bound students are more integrated to the academic life, government-bound ones display a similar pattern although with more openness to outside organizations, while those who wish for a position in the private sector declare more links with non-university organizations than their peers. For example, the students who aim for private sector employment are more likely to have received some sort of non-academic funding designated specifically for their doctoral research project (i.e. excluding salary paid for work as an employee), and less likely to have taught as an adjunct. They also have closer ties with

professionals from outside the university, who help them with their research project and probably act as some kind of professional role-model to them. These contacts were undoubtedly facilitated by proximity, as about two-thirds of the students interested in private sector positions used office space outside of the university, more than twice the proportion of collaborating but university-bound students. This proximity effect is the only significant result obtained for variables concerning both collaborating and non-collaborating students.

Table 3.
Summary of findings – Collaborating doctoral students in the sciences and engineering

	Students preferring work in the private sector		Students preferring work in government		Students preferring work in the university sector	
	%	N	%	N	%	N
Funding from a private foundation or other corporate source	53,3	16	46,2	12	34,1	14
Funding from major scholarship	76,7	23	76,9	20	65,9	27
Funding from adjunct teaching	10,0	3	3,8	1	17,1	7
Have received support or help from non-university professional (researcher or not)	76,7	23	73,1	19	56,1	23
Has used university office	66,7	20	53,8	14	80,5	33
Has used non-university office	63,3 ^a	19	57,7	15	26,8 ^a	11
Have published at least once (including papers given at conferences)	83,3	25	84,6	22	87,8	36
Have experienced peer-review at least once	63,3	19	80,8	21	78,0	32
Is somewhat restricted in publication	40,0	12	19,2	5	17,0	7
Has participated to research commercialization	26,7	8	14,6	6	14,6	7
Intensity of collaboration	52,7 ^a		45,34		36,33 ^a	
Frequency of meetings	4,63 ^{a b}		4,19 ^b		3,24 ^{a b}	
Written contract between partners	86,7 ^a	26	53,8	14	36,6	15
Total		30		26		41

^a: Significant result at 95% risk. ^b: Rating on 6 where 1 = never and 6 = every day.

The same hypothesis about the relative importance of publication that was made for non-collaborating students could be made in the case of collaborating students: those who prefer to work outside of academia could be expected to invest less time and efforts in publishing research

results. Again, we would have to reject that hypothesis: nearly as many students of each category have published at least once, and the variation in the exposure to peer-review between categories is too small to be statistically significant. We must still note that private-sector-bound students report having experienced peer-review about 15% less frequently than their colleagues more interested in university or even government careers. Further research should address the question of the publications of graduate students more closely.

Another difference that is not quite, but almost, statistically significant concerns restriction of publication. Among collaborating students, it is those who are most interested in private sector employment who are most often subjected to some kind of restriction to publication, while it is a rather infrequent situation for students with other professional projects. The same remarks stand for participation in the commercialization of research results.

Obviously, among collaborating students, there is a trend in general aspects of research education that more closely associates private-sector-bound students to the non-university milieu from the onset of their doctoral program. The mere fact that a student is collaborating with industry does not turn him or her into an industrial researcher in training. However, the closer the links established with non-university organizations, the higher the probability that the student will prefer to work in non-academic institutions after graduation. This finding is supported, this time very significantly, by further investigation of the collaborative arrangement between the student and the non-university organization.

The intensity of collaboration between a student and a non-university organization is measured by a compound index. A high rating on the intensity index means that the student receives many different kinds of resources from his or her partner organization, and has many obligations in return, like giving copies of his or her dissertation, writing a separate report, becoming (or remaining) an employee of the organization for a given period of time, etc. Furthermore, the students who display high intensity of collaboration have closer contacts with representatives from the non-university organization, sometimes to the point of having their dissertation formally evaluated by them. They also feel that their research is of great relevance to the activities of their partner organization. As we can see in Table 3, high ratings on this index (base = 100) are highly

associated with projects to work in the private sector after graduation from the PhD program. A slightly lower intensity is associated with plans to work for government, while significantly lower ratings are related to a preference for university employment.

Some more specific variables exemplify this very important trend. Firstly, students who consider non-university careers to be best for themselves tend to spend a lot of time side by side with their non-university counterparts during their research education: 40,0% of private-sector-bound students even reported daily meetings with representatives from the non-university organization. It is interesting to note that, among students aiming for the private sector, 87,6% were in contact with PhD holders in the collaborating organization, while it was the case for only 65,4% of government-bound students and 61,0% of university-bound ones⁷. Non-university representatives interacting with private-sector bound students were also more likely to be full-time researchers. The non-university people who play a role in the research education of these collaborating students cannot consequently be considered strictly ‘non-academic’, as they certainly have also developed, at least to some extent, the scientific habitus during their own doctoral training. Yet, they clearly offer alternative role-models to the students who collaborate with them through cooperative research agreements, showing that positions – perhaps even fulfilling ones – are available outside university boundaries.

Secondly, private-sector-bound students are also much more likely to be part of an explicit contract that links them, and sometimes their supervisor, to their non-university partner. Nearly all of them (86,7%) are personally engaged in such an agreement, while only a third of university-bound students are. In this latter case, it is more frequent that the student is only indirectly linked to the non-university organization, through a contract signed by his or her supervisor, of which the student is not explicitly part. Further investigation is needed on this aspect, as the survey did not allow the collection of in-depth information on the students’ contracts. Nonetheless, evidence from other questions and write-in comments brings us to think that some – although no more than a third – of the collaborating students who preferred private-sector employment were in fact already employed or in other ways linked (after an internship for

⁷ The result is almost significant, at $1-p = 94,59\%$, and becomes significant when university- and government-bound students are merged in one category.

example) to their partner organization. These students obviously have a different experience than that of the average student collaborator in the sciences and engineering, where the usual scenario is for the supervisor to invite the student to do his or her dissertation research in the context of one of his own cooperative research project. In the cases where the students reported being previously employed by the non-university organization they are currently involved with, the intensity of collaboration is reported highest (53,90) while collaborative relations established via the supervisor are the most common but the least intense (42,20).

The analysis of the experiences associated with a preference for non-academic employment on the part of collaborative students shows that those who claim to be drawn to work in the private sector seem to have displayed closer ties to the non-academic milieu since the beginning of their doctoral education. When a student enters a formal contract with a non-university organization, receives funding from non-academic sources, spends time in non-university office space, is supported by non-university researchers, and experience private-sector practices such as some restriction to publication and participation in the commercialization of research, it is more likely that he or she will turn toward non-university employment after graduation. This observation is especially true for private-sector-bound students, while the situation of government-bound students is less clearly defined. However, it is important to remember that, even for collaborating students, no single variable can, by itself, predict with certainty the preferred sector or employment.

Discussion

The findings presented in this paper result from a survey which did not ask questions about the students' attitude toward different kinds of research or values nor, more importantly, about the *evolution* of these attitudes and career preferences over time. Did the students maintain the same career preferences from the beginning to the end of their program? We have no way to tell until we survey the same respondents again in a year or two to measure the evolution of their choices. Moreover, it must be taken into account that many students probably did *not* have a clear, strong career preference at the onset of their PhD journey, or even at the time of the survey, but nonetheless picked one of the options offered.

Hence, it cannot be definitely concluded from our research that the policy trends are to be accounted for bringing more graduate students to consider alternative careers in industry or government as a result of their involvement in cooperative research. Actually, it may as well be the other way around: it seems plausible that more than a few students who expressed preference for a career outside academia *sought* a doctoral research education compatible with their aspirations. These students would also more frequently set up their own partnership outside the established agreements between professors and government agencies or firms from the private sector, or carefully research existing cooperative projects to find one that suited their specific training needs. In this case, the efforts to multiply cooperative research opportunities would not have caused a change in the professional perspective of students, but rather created an institutional venue for different students who held different perspectives from the start.

During the exploratory interview phase, one student told us that, if it would not have been possible for him to work on a project that he felt was directly relevant to his profession (engineering) as a graduate student, he would not have undertaken a Master's degree. Close to the end of his writing phase at the time of the interview, he said he would eventually be interested to go on to the doctoral level and do formal research about a 'real life' problem he encountered in his job that he would not have the time to tackle in a scientifically satisfying manner otherwise. This situation is perhaps specific to this very student, but we feel that it would be congruent with the diversification of the student population that such aspirations become more common in doctoral education in the sciences and engineering, especially as the proportion of Master's degree holders increases in the workforce. When some of these graduates come back to the university to seek professional development, what kind of topic will they choose to research? The massification of higher education and the subsequent diversification of the student population, after transforming undergraduate education during the second half of the twentieth-century, are now becoming more visible at the doctoral level. These major phenomena of the history of higher education should be considered as part of the explanation for the changing career preferences of at least some doctoral students, jointly with the more recent trends toward greater focus on the 'relevance' of research and the urge to 'commercialize' its results.

Nevertheless, the possibility that some students may come to graduate education embracing the ideal of an academic profession and then develop interest for work in industry as they discover alternative workplaces through involvement in their supervisor's cooperative research projects is not at all ruled out by our research results so far. However, we observe that the majority of collaborating students who came to cooperative research via their supervisor still claim to prefer academic employment. Although they have some ties with non-university organizations, their involvement could be said to be 'at arm's length' and its impacts on their careers over time is far from predictable. Moreover, by working with 'academic entrepreneurs' who are successful in seeking funds from both traditional and non-traditional sources, could it be that the students learn to maximize research budgets by re-wording their academic research programme in terms more appealing to potential non-academic 'partners'? If so, it would not be the first time that researchers who developed a scientific habitus find a way to carry on with their more fundamental preoccupations while mandated to work on urgently relevant problems (Castonguay 2003⁸). It should also be noted that the binary division between 'academic' and 'non-academic' may be inappropriate to take into account the diversity of research projects in which both 'academics' and 'non-academics' are involved.

This paper shows the need for more empirical research, not only on the career preferences and job market outcomes of recent PhDs – although systematic surveys on these topics remain absolutely necessary – but also on how the students come to adopt these preferences and transit from preference to actual employment. For instance, it is less obvious nowadays that doctoral students are young apprentices undergoing initial training: the growing number of graduate students who have careers of their own *before* they re-enter academia to work on a doctorate, already observed in the social sciences (Pearson, Evans & Macauley 2004), may also be taking greater importance in the sciences and engineering. This may be contributing to the trend toward more 'cooperative research education' and closer ties between universities, industry and government. Studying the way students perceive the job market for PhDs is also a priority considering the fact that the perception of what is attainable often shapes what is perceived as desirable (Bourdieu 1980). In addition to the pursuit of systematic quantitative studies, we hope

⁸ In his study of economic entomology in Canada in the early twentieth-century, Castonguay shows that entomologists with research degrees employed by the Canadian department of Agriculture, whose mandate was to support pest control, turned out developing more fundamental knowledge while leaving actual pest control to others.

that qualitative studies will further explore the process by which doctoral students choose what kind of professional they will become (or, even, to measure the extent to which they actually make a choice) and the *meaning* of these professional preferences that are also, in many ways, life projects.

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