



Research Director, Colleague, Schoolmaster? Preferred and Experienced Supervising Styles of PhD-Students at Four Faculties

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Abstract

What do the PhD candidates think of their supervisors' supervising styles? What practices do they see as characteristic of their primary supervisors, and how does this compare to their own preferred style of supervision? And how is this linked to satisfaction with their supervisors and optimism for their thesis work? Using data from a web survey of 337 candidates at the Faculties of Law, Natural Sciences, Psychology and Social Sciences at the University of Bergen, the article explores these themes via principal component analysis to look for common elements in their answers, and via regression analysis to study how these answers are linked to various characteristics of the supervisors and the PhD candidates. The study finds some differences between the faculties and suggests some factors that are related to feelings of inadequacy in the supervisors and pessimism for their work on the thesis.

Keywords

PhD, research supervision, supervisor styles

Introduction

The quality of the working relationship between PhD students and their supervisors is of crucial importance to universities. The supervisor is the main link between the individual PhD candidate, the department and the institution. The supervisor's capacity to not only provide the student with the required information, but also to provide the route by which the student can become integrated with the institution and its relevant research communities may be crucial for the progress and success of the doctorate (Pole et al. 1997).

The supervisor–student relationship has been studied from a wide range of perspectives focusing on different aspects (Bruce and Stoodley 2013): on supervising as *a form of teaching* (ibid.), on what factors help *completion* (e.g. Sinclair 2004), on *learning outcomes* (Kiley and Wisker 2009), the transmission of specific *skills* (e.g. Willison and O'Regan 2007), *expanding awareness* of students (e.g. Brew 2001), supervision as a *social practice* (e.g. Boud and Lee 2009), and, on the main focus in this article: the *role of the supervisor* and *supervisory styles* (e.g. Burns, Lamm, and Lewis 1999; Deuchar 2008).

Supervision is a complex task, which involves rational management, cultural socialisation, encouragement of critical thinking and intellectual emancipation, and the development of a social relationship between supervisor and student (Lee 2008). And, because of its placement in a complex nexus of institutional and personal expectations, the relation between supervisors and students is interwoven with many, often conflicting expectations that provide the supervisor with a complex set of roles. Brown and Atkins (1988) have suggested ten such specific roles varying from friend to director, whereas Gatfield and Alpert (2002) have proposed a simpler model of four *supervising styles* – ranging from a “laissez-faire” approach to more pastoral, directorial and contractual styles – varying by various degree of structure and support (Text box 1).

Text Box 1. The roles of the PhD supervisor

Brown and Atkins, 1988

- *Director* (determining topic and method, providing ideas)
- *Facilitator* (providing access to resources or expertise, arranging field work)
- *Adviser* (helping to resolve technical problems suggesting alternatives)
- *Teacher* (of research techniques)
- *Guide* (suggesting timetable for writing up, giving feedback on progress, identifying critical path for data collection)
- *Critic* (of design of enquiry, of draft chapters, of interpretations of data)
- *Freedom giver* (authorises student to make decisions, supports student’s decisions)
- *Supporter* (gives encouragement, shows interest, discusses student’s ideas)
- *Friend* (extends interest and concern to non-academic aspects of student’s life)
- *Manager* (checks progress regularly, monitors study, gives systematic feedback, plans work)
- *Examiner* (e.g. internal examiner, mock vivas, interim progress reports, supervisory board member)

Gatfield and Alpert, 2002

- *Laissez-faire style*: the supervisor is marginally involved in the organisation and management of PhD students work and support.
- *Pastoral style*: is characterised by significant involvement in giving support and resources, yet the candidate organises and manages his/her research project.
- *Directorial style*: the supervisor gives responsibility to the PhD candidate to ask for support and resources but is heavily involved in organising and managing the project.
- *Contractual style*: emphasises a negotiated role in regard to both organising and managing the PhD research project as well as the support provided.

Many variants of such categorisations exist, for example Wright, Murray and Geale’s (2007) distinction between supervisors as “quality assurers”, “supportive guides”, “research trainers”, “mentors” and “knowledge enthusiasts”. A fundamental difference has been suggested to be between a “hands on” and “hands off” style (Sinclair 2004). The former style refers to an “approach to supervision that leaves candidates largely to their own devices,” while the latter represents “an interventionist pedagogic approach to supervision” (*ibid.*, part vi–vii).

Areas of potential disagreement exist at every stage of a PhD research study between supervisor and candidate (Brown and Atkins 1988). There might be disagreements over how to select research topics and theoretical approaches, the frequency of meetings, as well as the responsibility for ensuring the quality of the work. These issues must be resolved but may vary across disciplines and within departments. Furthermore, the relation is complicated by a profoundly unequal power structure, subconscious feelings and hidden agendas (Deuchar 2008; Grant 1999). From the supervisors’ point of view, everyday tensions have been reported between their professional role and their personal relationship with the PhD student (e.g. Lee 2008).

Supervisors and PhD students often have different expectations for supervision. A common finding is that when supervisors are mostly orientated toward and focused on the student's completion of the thesis and view students as apprentices for academic life, students often express a need for more personal support and validation, as well as confirmation of the value of their work and their person (Burns, Lamm, and Lewis 1999; Pole et al. 1997). Furthermore, differences both in regard to the social characteristics of students (e.g. gender differences in general satisfaction with their supervisors) and differences between disciplines – probably reflecting different academic cultures – have been reported (e.g. Powles, Patrick, and Bell 1989). We should also expect such expectations for the supervisor–student relationship to vary both over time and between different national contexts, which suggests that a case-study design can be a fruitful way of investigating some of these dynamics between PhD candidates and their supervisors.

In this article, our case is four faculties at a Norwegian university. Being interested in the situation in Scandinavia, one might for example expect that the size of these countries and societies and egalitarian traditions in this region might contribute to a less hierarchical relationship between supervisor and student than in the continental culture usually studied. From an international comparative perspective, the Norwegian society's egalitarian tradition is also clearly evident in terms of access and entitlement to higher education, which is at a high level compared to Australia, England, Germany, India, Scotland, Spain and the United States. Furthermore, Norwegian PhD students stand out as they have formal status as staff with full-time employment and rights (Clarke and Lunt, 2014: 36). Such societal and structural conditions may also influence the relationship between the student and supervisor, perhaps towards a less skewed power relation.

One might also wonder, as Deuchar (2008) does, how the reforms of higher education – many of them inspired by ideas of rational management focusing on efficiency, positioning students as customers with rights and turning research success into a competitive sport (Tight 2000 in *ibid.*), have impacted on traditional models and expectations for the supervisor–student relationship. Our agenda is both to understand better the concrete situation at the University of Bergen, one of Norway's largest universities, but also to bring variation to the international studies of the relationship between supervisors and students. This might help us to better understand the causes of favourable and detrimental relationships and contribute to developing ways of improving this crucial part of University pedagogy.

In our case, we focus on the expectations and preferences of PhD students. What preferences do they have for various supervision styles, and how does this deviate from the supervision they feel they receive? Furthermore, how are these preferences and feelings of insufficiency related to the characteristics of the student, the supervisor and the research discipline in question?

The data and method

A web survey was administered to all the PhD students at the Faculty of Social Science at the University of Bergen (UoB) in December 2015, and then to all the PhD students at the Faculties of Law, Natural Sciences and Psychology in December 2016. In total, 337 PhD students responded to the survey, a response rate of 49,9%.¹

1. Response rate by faculty: Law 40%, Natural Sciences 49%, Psychology 50%, Social Science 50%.

The questionnaire included questions on PhD students' social and educational background, characteristics of their present PhD situation, characteristics of their supervisor, their general satisfaction with their supervision, their optimism about the final quality of their thesis, and preferred – and actual supervising style of their supervisors.² In total, the questionnaire included twelve questions and ninety items (Appendix 1). The questionnaire was thus not only formed to measure the student's expectations' of their supervisor and to what degree they felt these expectations were met, but also to put these experiences in the broader context of their current situation, their previous educational career, their (and their supervisors') social characteristics and their place of study.

For the analysis, we will first discuss the general patterns of PhD candidates' satisfaction with supervision and optimism regarding the quality of their completed thesis. This is followed by a series of exploratory factor analyses of their preferred and experienced supervision styles in their supervisors, followed by a study of the experienced gaps between these, operationalised as a simple subtraction between the two previous variables. What appears as the most important underlying factors of the preferred style of PhD supervision, the supervision they experience, and what kinds of gaps do they seem to experience? The descriptions of the factors are combined with a discussion of their relation to the characteristics of the PhD candidates and thesis supervisors using techniques of regression.

Satisfaction and optimism

In general, the PhD-candidates appear satisfied with their supervision. Three out of four say they are satisfied, close to half that they are very satisfied, and the differences between the faculties are not very significant. PhD candidates at the Faculty of Law are the most satisfied, followed by candidates at the Faculties of Social Science and Psychology, while candidates at the Faculty of Natural Science score lowest (Table 1). A majority is also optimistic about the final quality of their thesis, with social science candidates being somewhat more pessimistic than the others and psychology candidates slightly less so. While satisfaction and pessimism are difficult to predict by the characteristics of the candidate and the supervisor available in our data, some factors emerge as important (Appendix 2, Table A1). Satisfied candidates are more likely to be younger students (30 years or less) and write an article-based thesis rather than a monograph. They are also slightly more likely to be male and have a co-supervisor. These factors are also characteristic of optimistic candidates, except that this is more likely for older rather than younger candidates. Furthermore, optimism is also more common among foreign PhD candidates. Various factors suggesting some kind of social distance between the candidate and supervisor (gender differences, not having the same supervisor for their master thesis or doing this at another university) are also weakly related to feelings of dissatisfaction and pessimism. Having an older supervisor appears not to be related to satisfaction but makes one slightly more likely to be pessimistic.³

2. This particular battery of questions was adapted from the SPORS questionnaire at the University of Western Australia (1994).

3. 6% of the candidates who have a main supervisor below 50 or below 60 years of age are pessimistic. Having a supervisor over 50 raises pessimism to 11%, and over 60 to 16%.

Table 1. Selected characteristics of the PhD candidates and their supervisors. Percentages.

	Law	Natural Sciences	Psychology	Social Sciences	Total
Satisfaction with supervision					
Very satisfied	60	41	45	56	46
Somewhat satisfied	20	29	32	22	27
Neither satisfied or unsatisfied	7	8	10	5	8
Somewhat or very unsatisfied	14	22	13	16	19
Optimism for final quality of thesis					
Very optimistic	31	17	20	16	18
Somewhat optimistic	13	44	45	45	43
Neither optimistic or pessimistic	56	30	27	25	30
Somewhat or very pessimistic	0	8	8	13	9
Educational career and characteristics of PhD					
Master degree at same university	62	48	55	78	57
Had the same supervisor for master dg.	19	31	23	45	32
Has a co-supervisor	50	92	100	71	87
Year of thesis: 1–2	50	53	44	53	51
Year of thesis: 3–4	50	38	41	36	39
Year of thesis: 5 or later	0	9	16	12	10
Writing a monograph	94	5	6	39	17
Does not have an office at the university	19	19	53	33	28
Is working part-time with PhD	12	7	28	9	12
Social characteristics of candidate					
Is a foreign student	12	41	8	24	29
Female	56	43	66	48	49
<30 years old	19	48	9	26	35
30–34 years old	44	35	20	37	33
35–39 years old	19	11	27	22	17
40 years or older	19	3	55	14	14
Father or mother PhD degree	25	10	9	8	10
Father or mother Master degree or higher	50	34	34	38	36
Social characteristics of main supervisor					
Supervisor is male	75	83	61	76	77
Supervisor is same gender as candidate	69	62	55	62	61

	Law	Natural Sciences	Psychology	Social Sciences	Total
<50 years old	69	60	39	-	55
50–59 years old	25	26	34	-	28
60 years or older	6	15	27	-	17
Is less than 10 years older than cand.	56	17	33	-	23
Is at least 20 years older than cand.	19	36	42	-	36
N=	16	178	64	76	337

Preferred and experienced supervisor styles

When asked about what aspects of their supervisor they are most and least satisfied with, some types of comments are commonplace in the open comment sections of the questionnaire (Text box 2). Support, respect, feedback, expertise, approachability and availability are

Text Box 2. “What elements of your supervisor’s supervision style are you most and least satisfied with?” (open question). Selected responses.

<p>Most satisfied with</p> <p>Respect, freedom, patience</p> <ul style="list-style-type: none"> • “Respect, interest and validation” • “Gives me flexibility and freedom” • “Patience – I should have submitted my thesis by now.” • “Does not interfere with my metacognitive processes” • “I am most pleased and satisfied with her ability to adapt to my needs and to be flexible, and that I am respected.” • “Work is acknowledged and taken seriously.” • “My supervisor believes in me and my project.” • “A lot of degrees of freedom in regard to the content of my thesis.” <p>Availability, approachability, support, feedback</p> <ul style="list-style-type: none"> • “Availability, supervision of guided material, research expertise” • “Inclusion in professional networks home and abroad. Very precise feedback on written text drafts. Belief and support in my project.” • “She gives me prompt feedback and is always available.” • “She has a lot of knowledge and she is always answering my questions very quickly.” • “Friendly and available and supportive if I take the initiative.” • “Input on papers” • “Valuable comments on my work after I have completed the papers” • “Personal support and encouragement.” • “My main supervisor is interested in my work and my progression.” • “Support, follow up, interest in my project” 	<p>Least satisfied with</p> <p>Lack of knowledge and expertise</p> <ul style="list-style-type: none"> • “He is not an expert within my research topic” • “Knowledge about my theoretical perspective. Fortunately, I get this from a co-supervisor.” <p>Lack of contact, the problem of distance</p> <ul style="list-style-type: none"> • “The frequency of meetings and supervision in the direction of the project.” • “Would prefer more unformal communication about the research.” • “The main supervisor is located in a different city” • “I wish regular supervision was initiated and required by my supervisor to secure progress immediately after starting the PhD.” <p>Lack of feedback</p> <ul style="list-style-type: none"> • “Feedback on manuscripts” • “Support and input on the whole project and topic” • “Response time, supervising experience, contact frequency” • “Does not engage in the analysis when prompted” <p>Other</p> <ul style="list-style-type: none"> • “As a new PhD candidate, I am a bit confused as to what is expected of me.” • “I was really overwhelmed, and it was tough to get on the right track and start productive writing.” • “It’s been now 3 years since I started asking the Faculty for a change of supervisor (. . .), but the Faculty does not care about bad supervisors.” • “Slave-owner relationship with his PhD students”
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commonly seen as positive qualities by the PhD candidates, and lack of these qualities are widely considered a cause for dissatisfaction. Overall, the comments made by the PhD candidates appear quite similar to those found in other studies (e.g. Burns, Lamm, and Lewis 1999).

To explore these aspects more systematically, we asked the candidates to rank, first, their preference and second, their experience of 35 elements of supervision (Appendix 1) via a 5-point scale (low to high). Overall, the preferred and experienced supervising styles reported by the PhD candidates appears to be roughly in harmony (highly valued supervision styles also tend to be the ones most often experienced), but with the exception of the supervisor’s intervention in their personal life, the candidates appear to experience a general gap between their expectations and the actual involvement of their supervisors (Figure 1).

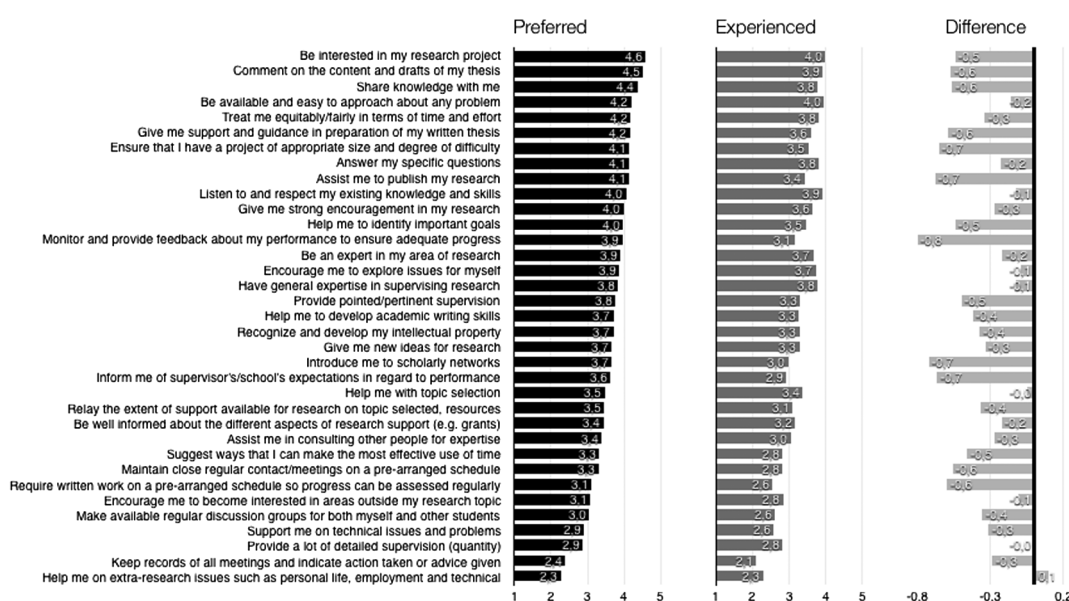


Figure 1. Preferred, experienced and gap between preferred and experienced supervising styles by the PhD candidates, ordered from highest to lowest by preference. Mean (1=low, 5=high).

The candidate was given two separate questions with the same categories: “To what degree do you prefer the following style/practices in a PhD supervisor?” and “To what degree do you think your current main supervisor practices the following supervising styles/practices?”

The most highly *preferred* elements of PhD supervisors are related to high levels of support (encouragement, showing interest, being easily approachable, etc.), and research guidance (feedback, identifying important goals etc.), with technical advice and detailed manager-style supervision being generally less valued. Underlying these specific preferences, we find preferences among the PhD candidates for three quite distinct supervising roles and styles (PCA, the first section of Table 2): (1) *The research director*, (2) *The colleague* and (3) *The schoolmaster*.

Table 2. Preferred, experienced and the gap between preferred and experienced supervising styles by the PhD-candidates. Main components from three exploratory factor analyses. N=236.

	PREFERRED				EXPERIENCED			GAP PREFERRED-EXPERIENCED			
	1: Research Director	2: Colleague	3: School- master	MSA	1: Engaged sage	2: Research Director	MSA	1: General gap	2: Lack of Direction	3: Lack of collegiality	MSA
Help me on extra-research issues such as personal life, employment and technical	0,66	0,17	-0,22	0,93	-0,31	0,60	0,95	0,32	-0,50	0,21	0,92
Support me on technical issues and problems	0,65	0,06	-0,14	0,92	-0,46	0,48	0,97	0,50	-0,29	0,22	0,93
Assist me to publish my research	0,62	0,22	0,03	0,90	-0,46	0,35	0,95	0,56	-0,03	0,03	0,88
Encourage me to become interested in areas outside my research topic	0,61	0,32	-0,12	0,93	-0,68	0,23	0,96	0,48	-0,43	0,09	0,93
Give me new ideas for research	0,61	0,24	-0,13	0,92	-0,73	0,31	0,96	0,58	-0,36	0,17	0,94
Help me with topic selection	0,61	0,07	-0,25	0,92	-0,23	0,62	0,95	0,27	-0,49	0,13	0,93
Make available regular discussion groups for both myself and other students	0,60	0,06	-0,26	0,90	-0,72	0,19	0,95	0,51	-0,01	0,53	0,94
Be well informed about the different aspects of research support	0,57	0,30	-0,24	0,95	-0,30	0,53	0,93	0,05	-0,71	0,09	0,88
Keep records of all meetings and indicate action taken or advice given	0,57	0,08	-0,42	0,94	-0,41	0,34	0,95	0,04	-0,52	0,16	0,90
Relay the extent of support available for research on topic selected	0,56	0,24	-0,19	0,92	-0,42	0,62	0,96	0,34	-0,37	0,30	0,92
Assist me in consulting other people for expertise	0,50	0,35	-0,16	0,94	-0,71	0,36	0,95	0,58	-0,40	0,10	0,94
Help me to identify important goals	0,43	0,26	-0,32	0,94	-0,74	0,30	0,96	0,63	0,02	0,44	0,95
Have general expertise in supervising research	0,34	0,15	-0,33	0,91	-0,58	0,40	0,96	0,59	-0,05	0,30	0,91
Listen to and respect my existing knowledge and skills	0,32	0,67	0,08	0,88	-0,31	0,64	0,96	0,12	-0,32	0,49	0,89
Treat me equitably/fairly in terms of time and effort	0,09	0,65	-0,17	0,93	-0,76	0,25	0,97	0,57	-0,29	0,21	0,94
Be interested in my research project	0,03	0,63	-0,11	0,92	-0,28	0,69	0,96	0,05	-0,58	0,31	0,91
Give me strong encouragement in my research	0,25	0,64	-0,24	0,95	-0,46	0,63	0,96	0,29	-0,11	0,65	0,94
Comment on the content and drafts of my thesis	-0,04	0,60	-0,30	0,90	-0,64	0,36	0,96	0,54	-0,11	0,36	0,94
Give me support and guidance in preparation of my written thesis	0,13	0,57	-0,36	0,93	-0,22	0,65	0,94	-0,04	-0,21	0,74	0,90

	PREFERRED				EXPERIENCED			GAP PREFERRED-EXPERIENCED			
	1: Research Director	2: Colleague	3: School- master	MSA	1: Engaged sage	2: Research Director	MSA	1: General gap	2: Lack of Direction	3: Lack of collegiality	MSA
Encourage me to explore issues for myself	0,29	0,52	-0,02	0,90	-0,25	0,72	0,96	0,18	-0,09	0,69	0,93
Share knowledge with me	0,32	0,51	-0,11	0,95	-0,12	0,78	0,94	0,04	-0,49	0,45	0,91
Introduce me to scholarly networks	0,29	0,51	-0,11	0,92	-0,11	0,70	0,94	0,27	-0,32	0,39	0,93
Be available and easy to approach about any problem	0,19	0,50	-0,14	0,90	-0,56	0,55	0,97	0,57	-0,43	0,13	0,94
Recognize and develop my intellectual property	0,36	0,49	-0,18	0,94	-0,59	0,30	0,96	0,69	-0,02	0,24	0,94
Answer my specific questions	0,07	0,40	-0,19	0,90	-0,76	0,21	0,97	0,69	-0,09	0,19	0,96
Inform me of supervisor's/ school's expectations in regard to performance and progress	0,25	0,32	-0,30	0,92	-0,41	0,60	0,95	0,29	-0,17	0,57	0,95
Require written work on a pre-arranged schedule so progress can be assessed	0,13	0,11	-0,71	0,86	-0,30	0,64	0,96	0,38	-0,21	0,47	0,93
Maintain close regular contact/meetings on a pre-arranged schedule	0,32	-0,02	-0,67	0,90	-0,35	0,55	0,96	0,23	-0,65	0,12	0,93
Provide a lot of detailed supervision	0,34	0,15	-0,65	0,94	-0,61	0,50	0,97	0,49	-0,24	0,41	0,96
Monitor and provide feedback about my performance to ensure adequate progress	0,08	0,34	-0,58	0,94	-0,58	0,34	0,96	0,55	-0,45	0,03	0,93
Suggest ways that I can make the most effective use of time	0,32	0,26	-0,57	0,92	-0,74	0,14	0,93	0,54	-0,46	-0,12	0,89
Ensure that I have a project of appropriate size and degree of difficulty	0,10	0,31	-0,53	0,92	-0,26	0,59	0,96	0,55	-0,31	0,20	0,96
Provide pointed/pertinent supervision	0,13	0,41	-0,52	0,93	-0,75	0,29	0,98	0,60	-0,42	0,11	0,95
Help me to develop academic writing skills	0,23	0,37	-0,42	0,91	-0,67	0,42	0,97	0,56	-0,13	0,43	0,95
Be an expert in my area of research	0,32	0,07	-0,34	0,88	-0,45	0,57	0,94	0,48	-0,27	0,34	0,95
<i>Proportion of Variance</i>	30,8 %	6,3 %	5,0 %		45,9 %	6,5 %		34,4 %	5,8 %	5,6 %	
<i>Cronbach's α</i>	0,88	0,85	0,81		0,95	0,93		0,92	0,77	0,81	
<i>Kaiser-Meyer-Olkin</i>				0,92			0,96				0,93

Principal component extraction with Varimax rotation. The number of components chosen by Horns Parallel Analysis.

First, the PhD-candidates tend to differ most in their preference for (1) *the Research Director*. This style of supervision involves elements of the supervisor-student relationship not only related to the direction of the PhD candidates' research via the selection of the topic

and ideas for the thesis, the identification of important goals, the suggestion of academic journals to publish in, but also for facilitating research via organising discussion groups and by providing support on technical issues and problems both in relation to research and personal life. These elements combine the role of director, facilitator and advisor given by Brown and Atkins (1988) and can also be seen as a general preference for a strong “hands on”-style of supervision (Sinclair 2004). (2) *The Colleague* appears in contrast to practice a more “hands off”-style giving the candidate more freedom, while providing strong colleague-type support by showing respect for the candidate’s skills and interest in the candidate’s research project, listening and giving encouragement. Furthermore, supervisors practicing this style are seen as easy to approach and introduce the candidate to their academic networks. Favouring (3) *the Schoolmaster* style of supervision is characterized by the preference for detailed, continuous guidance and feedback through many and regular supervision meetings requiring the submission of written work in advance of such meetings, and feedback about progress.

The differences between the Research Director and the Colleague styles of supervision echo many of the standard descriptions of the differences between the “hard” and “soft” sciences: the requirements of collective research versus being a single researcher; i.e. the varying degrees of freedom in the choice of research direction and topics, and; the different levels and forms of hierarchy in the PhD candidate and the supervisor relationship. It is therefore not so surprising that a preference for these two styles varies between faculties. PhD candidates at the Faculty of Natural Science prefer much more often the directorial elements of supervision, while candidates in social science prefer the more collegial aspects of supervision style. Psychology and law students place themselves somewhat in the middle, but closer to the social science candidates (Table 3 and Figure 2). Preference for the Research Director style is also more common among foreign students, but less so for students writing monographs. A preference for both the Collegial and Schoolmaster style of supervision is more common among female PhD candidates. It is notable that a preference for the directorial and collegial style is both linked to optimism for the work on the thesis among the candidates, but satisfaction with supervision is linked strongest to preference for a collegial style.

Table 3. Relation of the factors from the three factor analyses to selected characteristics of the PhD candidate and their primary supervisor. OLS regression (beta coefficients) and additional correlates.⁴

	PREFERRED			EXPERIENCED		GAP PREFERRED-EXPERIENCED		
	1: Research Director	2: Colleague	3: Schoolmaster	1: Engaged sage	2: Research Director	1: General gap	2: Lack of Direction	3: Lack of collegiability
Standardized regression coefficients (beta)								
NATURAL SCIENCE (reference)								
LAW	-0,22	0,12	0,12	0,22	-0,04	0,08	-0,11	-0,22

4. Beta coefficients and correlations $>.1$ in bold letters. While this follows a well-known rule of thumb for interpreting such measures as indicative of a real effect (Cohen, 1988), this is done here only to improve the readability of the tables. Significance is not marked by stars as the data used are populations, not representative samples.

	PREFERRED			EXPERIENCED		GAP PREFERRED-EXPERIENCED		
PSYCHOLOGY	-0,15	0,14	0,14	0,20	-0,01	-0,08	0,13	-0,05
SOCIAL SCIENCE	-0,23	0,21	0,21	0,19	-0,12	0,19	-0,13	0,03
3 or more years on thesis	-0,04	-0,08	-0,08	-0,02	-0,15	-0,08	0,13	0,02
Monograph	-0,12	-0,02	-0,02	-0,06	-0,17	-0,18	0,16	0,01
Not office at UoB	-0,06	0,01	0,01	0,00	-0,08	-0,14	-0,01	0,04
>30 years old	-0,01	0,06	0,06	0,02	-0,01	0,07	-0,15	0,16
Female	0,01	0,23	0,23	0,04	-0,09	0,02	-0,03	0,22
Neither parent has a master degree	0,00	-0,01	-0,01	0,00	0,09	0,01	-0,01	0,01
Did not take master at UoB	-0,02	-0,08	-0,08	-0,07	-0,11	0,20	0,25	-0,03
Foreign student	0,20	-0,06	-0,06	0,09	0,21	-0,23	-0,11	0,11
Supervisor is another gender	-0,06	-0,01	-0,01	-0,04	-0,09	0,12	0,06	-0,08
Same main supervisor on master thesis	0,00	-0,08	-0,08	0,06	-0,10	-0,05	0,18	-0,10
Do not have a co-supervisor	-0,03	-0,10	-0,10	-0,03	0,02	-0,12	0,09	-0,12
<i>N</i>	236	236	236	223	223	182	182	182
<i>R-sq</i>	0,24	0,16	0,16	0,08	0,20	0,12	0,10	0,12
<i>Adjusted R-sq</i>	0,19	0,10	0,03	0,02	0,15	0,05	0,03	0,05
<i>Additional correlates (Pearson r)</i> Satisfied with supervision	0,02	0,15	0,07	0,67	0,20	-0,47	-0,32	-0,12
Optimistic about final thesis quality	0,11	0,24	-0,08	0,23	0,23	-0,01	-0,36	0,12
Supervisor >50 years old	-0,02	0,13	0,07	0,13	-0,11	0,01	-0,03	0,11
Supervisor is male	-0,02	-0,12	-0,07	-0,12	-0,07	0,14	-0,08	-0,03

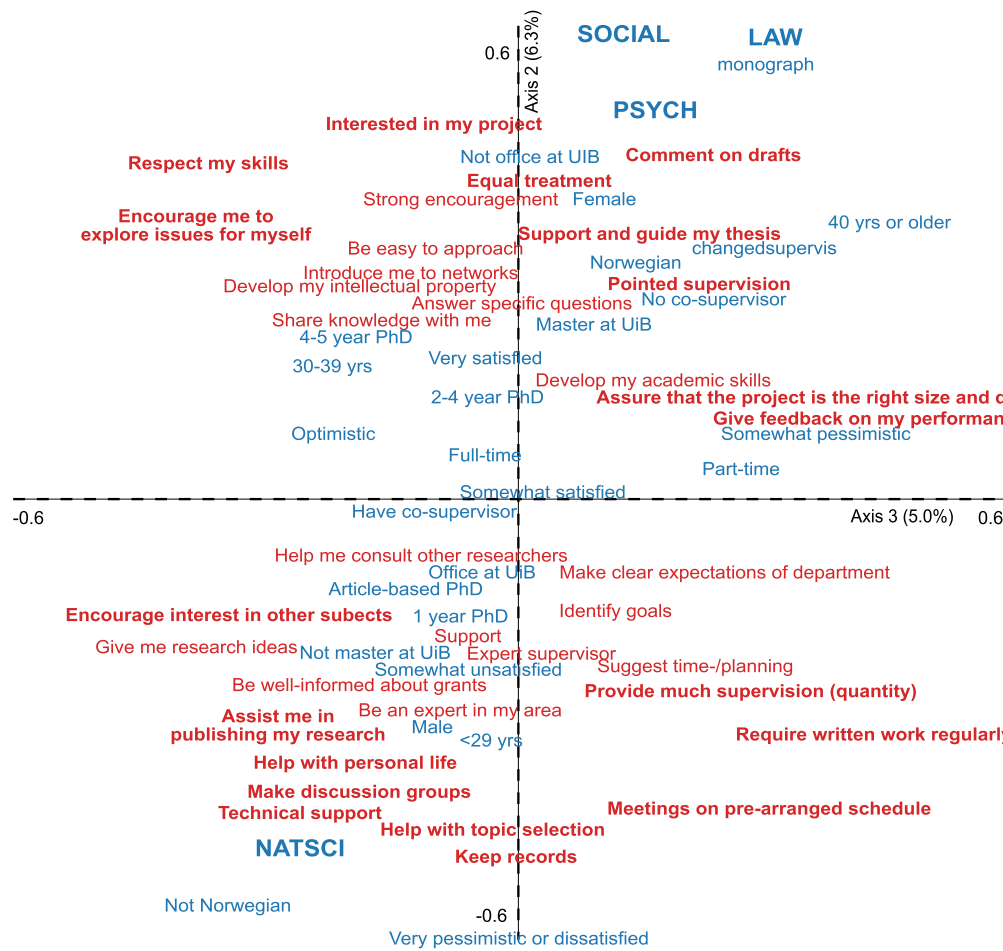


Figure 2. Preferred characteristics of supervisor style (red) and selected characteristics of candidate and supervisor (blue, supplementary). PCA, component 2 and 3.

As noted in Table 1, the candidates' experiences with their supervisors on various elements of supervision generally follows the ranking of their preferences for the same, and a factor analysis of their reported experiences with their primary supervisor suggests two factors (second section of Table 2) closely related to the style elements discussed previously.⁵ The first factor, which we have termed (1) *the Engaged Sage*, is linked to a generally high ranking of their supervisor in terms of commitment of time, expertise and involvement, where support and encouragement, approachability, intellectual freedom and stimulation, pointed supervision and expertise – both in regards to the supervisors' and the candidate's area of research – are also emphasised. This factor is most closely related to a preference for the collegial style discussed above. The second component, (2) *the Research Manager* is linked to emphasising the roles of the supervisor as research director and manager. Essential elements of this style of supervision include giving detailed direction and lots of feedback on a regular basis, as well as the monitoring and scaling of the PhD candidates' projects in correspondence with their abilities and resources. This factor also appears to favour the candidates' careerbuilding by introducing them to scholarly networks, recognising and developing their intellectual capacity, and helping them in terms of employment and technical issues.

5. Correlations between the components (Preferred, Experienced): Pref(1)/Exp(1): -0.07, Pref(1)/Exp(2): 0.54, Pref(2)/Exp(1): 0.33, Pref(2)/Exp(2): -0.05, Pref(3)/Exp(1): 0.13, Pref(3)/Exp(2): 0.34.

Again, these two factors – the Engaged Sage and the Research Manager – relate to different research cultures and academic disciplines. The PhD candidates at the Faculty of Natural Science are much less likely to rank their supervisors as Engaged Sages than those from the other three faculties, whereas social science candidates appear less likely to rate their supervisors as Research Managers. High scoring of their supervisor on both styles of supervision is linked to optimism about the thesis and satisfaction, although the first correlates more strongly with the Engaged Sage. The Research Manager style is reported more often by foreign candidates, and less frequently by those who have a relationship with their supervisor going back to their master's thesis. Of the two styles, the latter style is also more common for those who have younger supervisors.⁶

The gap: preferred and experienced supervising styles

What would be interesting to know is if these perceived “gaps” between the candidates' view of the ideal and actual qualities in their supervisors are different among the faculties and are linked to specific characteristics of the supervisors and candidates. To answer this question, we subtracted the PhD candidates' preference score (low–high, 1–5) for each element in the list of supervising practices from their scoring of their primary supervisors on the same variables. As noted earlier, the PhD candidates generally score their supervisors below their preferred level for each practice (Figure 1). Submitting these differences to separate factor analysis (Table 3, third section) suggests three main types of perceived gaps. The first is (1) *a general gap between preferred and experienced supervision*, including lack of support, guidance, expertise, feedback, approachability and encouragement. The second gap, like the third, appears more specific, here as (2) *a need for closer scientific direction and supervision*, where in regular meetings, the requirement of written work before meetings, feedback and the quantity of guidance is seen as below ideal. The third gap can perhaps best be described as a (3) *a preference for a more collegial relationship with their supervisor*, involving lack of introduction to scholarly networks, being unavailable or otherwise difficult to approach about any problem, not feeling respected and lacking help in regard to future employment and other issues outside formal supervision.

The first, a more general gap, which also correlates strongest with dissatisfaction with the supervisor, is more common among social science students, and the relation to factors like not taking one's master's degree at the current university, and supervisor being of a different gender, might suggest some kind of *social distance* at play. Being a foreign student or having an office at another university, however, lowers the chance of this kind of dissatisfaction. Feeling the need for closer research direction and management is also clearly linked to dissatisfaction, but also importantly – and in contrast to the former – to pessimism about the quality of the thesis. This is related to being late, writing a monograph and being a young PhD candidate – factors which all are likely correlated with different forms of *anxiety*. Experiencing the third gap, a *lack of collegiality*, is more common among candidates who are young, female, and do not have the same supervisor they had when doing their master thesis. This might again be linked to some form of social distance between the student and supervisor.

6. Note that Social science students were not asked this question.

Conclusions

The analysis shows that a vast majority of the studied PhD candidates are satisfied with their supervisors and optimistic in regard to their thesis, and this is quite similar across all four faculties. At the same time, there are clear signs of different cultures across the faculties, which appear mostly shared between supervisors and students. PhD candidates from the Faculty of Social Science are more likely to expect (and experience) collegiality with their supervisors than are those from the Faculty of Natural Science. In contrast, the latter candidates are more likely to both presume and find supervisors as research directors. PhD candidates from the Faculty of Psychology appear in a middle category in most respects, straddling the “two cultures” (Snow 1959) of humanism and natural science. The number of PhD candidates from the Faculty of Law in this study is limited, which creates some uncertainty as to how they place themselves in this picture. However, they do appear to have more in common with the social science and psychology candidates than those from the natural sciences.

The main gaps between PhD candidates’ expectations and experiences of supervision appear as (1) general under-performance in regard to expectations, (2) lack of research direction and (3) lack of collegiality. These vary somewhat according to faculty, but also appear to be related to factors indicating a social distance between the supervisor and student, and anxiety-inducing circumstances in work on the thesis (e.g. being late). That the laments of the students in this regard appear to echo those found in earlier studies in other countries and time periods (e.g. Burns, Lamm, and Lewis 1999), suggest a certain universality in regard to the challenges involved in the supervisor–student relationship.

The many “risk factors” we have identified for candidates’ dissatisfaction with their relationship with the supervisor and pessimism about the outcome of their thesis seems to invite an endless series of – sometimes conflicting – *ad hoc* hypotheses. The fact that foreign PhD candidates, for example, differ somewhat in their experiences and expectations of their supervisors from national candidates might signify a clash of national academic cultures, reflecting the particular recruitment mechanisms of foreign students, their lack of familiarity with the research facilities and staff, and/or specific challenges – cultural, linguistic, or social – in the communication with supervisors. Similar ambiguities reside in reasons for supervisors’ different supervising styles. That younger supervisors, for example, more often employ managerial styles of supervision might be read as a possible coping strategy used by inexperienced supervisors, or a pedagogical tactic suited to a new type of strategically oriented PhD candidates, or even as a sign of the collapse of traditional university values in younger professors under the onslaught of business logic and bureaucracy. In short, more research – preferably qualitative – is needed to understand how diverse groups of PhD candidates and supervisors walk “the rickety bridge” of research supervision (Grant 1999, 9) and establish positive and fruitful working relationships. In particular, we think further research on the effects of social distance would be a valuable contribution to existing research.

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Appendix 1: The Questionnaire

1. At what institute at UIB are you currently a PhD student? (checkbox)?⁷
2. Please check all the elements that fits your current PhD-situation
 - 2.1. I have a co-supervisor (or several co-supervisors) for my PhD.
 - 2.2. My master's degree was taken at the University of Bergen.
 - 2.3. I have changed my main supervisor(s) during my PhD.
 - 2.4. My main supervisor was also the supervisor (or co-supervisor) on my master's thesis.

7. Note that this question included the possibility of ticking of one's institute or, if preferred (for the sake of anonymity), one's faculty.

- 2.5. My main supervisor is male.
- 2.6. My regular office is NOT at the University of Bergen (do not include temporary stays at other institutions).
- 2.7. I am NOT a citizen or permanent resident of Norway.
- 2.8. I am carrying out my doctoral studies on a part-time basis.
- 2.9. I am writing my PhD as a monograph.
3. How satisfied are you, all in all, with the supervision of your PhD thesis? (very satisfied–very unsatisfied (5 categories), no opinion, not relevant)?
4. Are you . . . (female/male)?
5. What is your age? (<25, 25–29, 30–34, 35–39, 40 or older)?
6. Did/does your father or mother have a master's degree or PhD? (or equivalent)?
 - 6.1. Father (PhD, Master, BsC/lower higher edu, no higher edu.)
 - 6.2. Mother (PhD, Master, BsC/lower higher edu, no higher edu.)
7. How many years have you been a PhD-student? (do not include longer breaks for maternity leave, sick leave, paid leave for another job, longer, etc.) (1, 2, 3, 4, 5, 6 years or more)?
8. How optimistic or pessimistic are you about the quality of your completed thesis, compared to other theses at your institute? (very optimistic–very pessimistic, 5 categories)?
9. What is the approximate age of your main supervisor? (4 categories)?
10. To what degree do you PREFER the following style/practices in a PhD supervisor? (1 low to 5 high)?
 - 10.1. Monitor and provide feedback about my performance to ensure adequate progress.
 - 10.2. Inform me of supervisor's/school's expectations in regard to performance and progress.
 - 10.3. Listen to and respect my existing knowledge and skills.
 - 10.4. Require written work on a pre-arranged schedule so progress can be assessed regularly.
 - 10.5. Be available and easy to approach about any problem.
 - 10.6. Share knowledge with me.
 - 10.7. Provide pointed/pertinent supervision.
 - 10.8. Assist me in consulting other people for expertise.
 - 10.9. Suggest ways that I can make the most effective use of time.
 - 10.10. Provide a lot of detailed supervision (quantity).
 - 10.11. Help me to identify important goals.
 - 10.12. Treat me equitably/fairly in terms of time and effort.
 - 10.13. Help me to develop academic writing skills.
 - 10.14. Give me strong encouragement in my research.
 - 10.15. Recognize and develop my intellectual property.
 - 10.16. Be an expert in my area of research.
 - 10.17. Be interested in my research project.
 - 10.18. Have general expertise in supervising research.
 - 10.19. Keep records of all meetings and indicate action taken or advice given.
 - 10.20. Relay the extent of support available for research on topic selected, resources and expertise.
 - 10.21. Encourage me to explore issues for myself.
 - 10.22. Comment on the content and drafts of my thesis.
 - 10.23. Give me new ideas for research.

- 10.24. Give me support and guidance in preparation of my written thesis.
 10.25. Assist me to publish my research.
 10.26. Support me on technical issues and problems.
 10.27. Ensure that I have a project of appropriate size and degree of difficulty.
 10.28. Encourage me to become interested in areas outside my research topic.
 10.29. Help me with topic selection.
 10.30. Help me on extra-research issues such as personal life, employment and technical training.
 10.31. Make available regular discussion groups for both myself and other students.
 10.32. Be well informed about the different aspects of research support (e.g. grants & scholarships).
 10.33. Maintain close regular contact/meetings on a pre-arranged schedule.
 10.34. Introduce me to scholarly networks.
 10.35. Answer my specific questions.
11. To what degree do you think your current main supervisor PRACTICES the following supervising styles/practices? (same questions and scale as in the previous question)?
12. Which aspects of your working relationship with your main supervisor are you
- 12.1. ... MOST pleased/satisfied with? (open question)?
- 12.2. ... LEAST pleased/satisfied with? (open question)?

Appendix 2: Additional tables and figures

Table A1. Reported feelings of satisfaction with supervision and optimism for the quality of the thesis. Logistic regression (odds ratios⁸). N=332

	SUPERVISION				FINAL QUALITY OF THESIS			
	Very satisfied (45%)		Not satisfied (28%)		Optimistic (61%)		Pessimistic (9%)	
<i>Odds ratios</i>	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
NATURAL SCIENCE	1	1	1	1	1	1	1	1
LAW	1,9	3,8	0,6	0,2	0,5	0,9	1	1
PSYCHOLOGY	1,1	1,6	0,7	0,5	1,2	1,1	0,9	0,5
SOCIAL SCIENCE	1,7	2,3	0,6	0,4	1	1,3	1,8	1,2
3 or more years on thesis		0,9		1,3		0,6		2
Monograph		0,6		1,8		0,7		4,6
Not office at UoB		1		1,1		0,8		0,7
>30 years old		0,6		1,2		2,4		0,7
Female		0,8		1,2		0,6		3,5

8. Odds ratios above 1.67 and below 0,6 are put in bold to alert the reader to the strongest relationships. The threshold is the one suggested by Chen, Cohen and Chen (2010) to indicate a weak relationship (where 3.47 and 6.71 are suggested as indicating a medium and strong relationship), analogous to the rule of thumb given by Cohen (1988) for regression and correlation effects.

	SUPERVISION				FINAL QUALITY OF THESIS			
	Very satisfied (45%)		Not satisfied (28%)		Optimistic (61%)		Pessimistic (9%)	
Neither parent has a master degree		0,9		1		0,9		0,8
Did not take master at UoB		0,9		1		0,9		2,6
Foreign student		1		0,8		1,4		0,4
Supervisor is another gender		0,7		1,1		1,8		0,4
Same main supervisor on master thesis		1,4		0,8		0,8		1,3
Do not have a co-supervisor		0,9		1,5		0,4		1
<i>N</i>	332	324	325	317	334	326	318	310
<i>Pseudo R-sq</i>	0,01	0,04	0,01	0,03	0,01	0,06	0,01	0,12

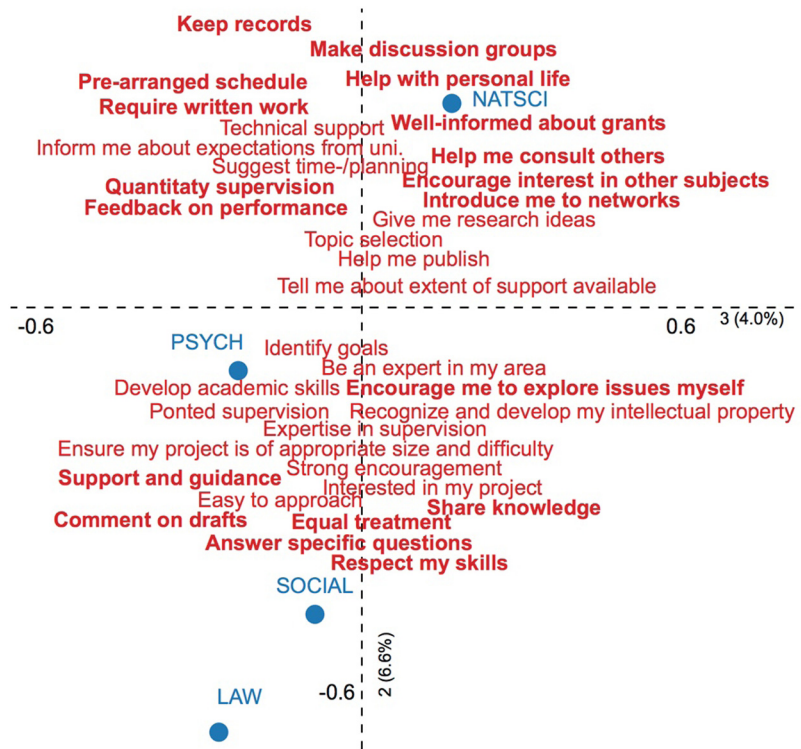


Figure A1. Experienced characteristics of supervisor and faculty. PCA, components 2 and 3.