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# It takes two to tango

*A qualitative study amongst PhD candidates and supervisors to evaluate the process of PhD supervision in the Netherlands*

Maastricht University  
Faculty of Health, Medicine and Life Sciences  
School for Public Health and Primary Care (CAPHRI)





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*\*Authors are in alphabetical order*

Maastricht, June 2013

The study presented here was conducted under the auspices of the School for Public Health and Primary Care: CAPHRI at Maastricht University, The Netherlands. CAPHRI is part of the Netherlands School of Primary Care Research (CaRe), acknowledged by the Royal Dutch Academy of Science (KNAW).

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ISBN: 978-90-5681-416-8

Cover design, layout and printing: CBS 9494 Canon Business Services Maastricht

Funding: PhD Committee FHML (IPC)

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# PREFACE

The importance of sharing experiences with professional peers is unquestioned. Generally, people meet and share their stories in informal settings.

The most obvious and also widespread stories are about the ‘failures’; the dropouts, the never-ending trajectories and conflict situations between a supervisor and his or her PhD candidate. Less widespread, but still often told, are success stories; the PhD candidates obtaining their degree within 2.5 years, or their first submission being accepted for publication in *The Lancet* *with minor revision*, or the ones being headhunted for a full professorship within 4 years of their defence. We’ve all heard of those, these stories are clear-cut and pretty obvious. It takes a more sensitive ear to extract information from less remarkable, more common, yet fewer told stories. For instance, stories about PhD candidates who are doing *okay*, who are *on schedule*, who *do not experience major conflicts* with their supervisors. So what is *their* story about? We heard about PhD candidates having doubts about themselves and their work, wanting to take responsibility but not knowing if they can or should, about expecting supervisors to care for and listen to them seriously, about providing knowledge and expertise but also acknowledging the (growing) expertise of the candidate, in short: to be there for them.

Supervisors also spend time exchanging experiences with their peers and have stories about satisfactory experiences, motivated, skilled and competent PhD candidates and less positive stories about PhD candidates not progressing enough, PhD candidates being distracted by extracurricular activities, or not taking feedback very well.

Given the amount of time they spend together and the nature of their contact, also taking into account their interdependence, the relationship between a PhD candidate and his or her supervisor is pivotal for their achievements. Many enter this relationship optimistically, positively and with full confidence in their own capabilities, convinced that both parties want the same: many fast publications in high impact journals, a timely defence and a prosperous academic career. It does

happen however, that a candidate experiences a motivational drop, that lecturing takes up the available time a supervisor can spend on supervising, that a PhD candidate loses confidence and has a hard time taking rejections, or both parties start feeling the time pressure. These are not individual stories, these are universal stories. Trying to improve the quality of supervision by improving the relationship between PhD candidate and his or her supervisor requires learning about their needs, wants and expectations. With this booklet, we hope to contribute to scientific knowledge on the topic of PhD supervision and improve the experiences of PhD candidates and supervisors with PhD trajectories. Let's learn from their experiences!

Maastricht, June 2013



# INTRODUCTION

*“Misconceptions between people mostly occur due to erroneous assumptions of the interpretation of each other’s behavior.”*

**(Unknown)**

Quality of supervision is an important theme, of high interest to research schools, PhD candidates and supervisors. Although a PhD trajectory is focused on performance and output on a specific academic topic, supervision quality and relationship with the supervisor are considered to be amongst the most important issues for a PhD candidate, an importance definitely not being met with the number of scientific publications on this topic. Only few literature sources, mostly policy documents, on relational aspects can be found. These indicate that motivational aspects (showing interest), content aspects (knowledge of the supervisor on the topic) and process-oriented aspects are deemed necessary for qualitatively good supervision (Delaney, 2008; Gill & Burnard, 2008; Leonard, Metcalfe, Becker, & Evand, 2006; Sinclair, 2004; Sonneveld, 2009; Willems, 2009). Even without further supporting evidence, it is perfectly imaginable that a good relationship between the PhD candidate and his or her supervisor will not only enhance a candidate’s motivation; it might also increase his or her output.

PhD candidates and their supervisors do not enter the PhD trajectory as equals; their relationship is hierarchical by nature. The PhD candidate is highly dependent on his or her supervisor(s), which is reflected by the go/no-go verdict 10 months after the start of the trajectory in the Netherlands, by the quality and speed of the feedback provided by supervisors, and because of important decisions, such as when to submit a manuscript to a journal or to the thesis assessment committee, being made by supervisors, not by PhD candidates. This can cause feelings of dependency and uncertainty within a person, feelings that need to be acknowledged and handled carefully by supervisors.

Supervisors, on the other hand, may also experience doubts and difficulties in their relationship with a PhD candidate, even if they have ample experience with supervision. Whereas new supervisors might experience a lack of supervision skills or experience, the more experienced ones might not always be aware of the increasing gap between their own knowledge, skills and competences, and the level of those in their candidates. The supervisor's skills, such as empathy, communication and coaching skills, are highly important for matching or mismatching with a PhD candidate (Delaney, 2008; Gill & Burnard, 2008; Sinclair, 2004).

The current scientific and economic climate puts some extra pressure on the relationship between the PhD candidates and their supervisors. There is an increasing emphasis on the highest standards of scientific output (publications in journals with high impact factors, preferably ranked within the upper quartile of the research field), also for PhD students. Additionally, norms regarding numbers of scientific publications per staff member per year add to publication pressure of PhD candidates and supervisors, which might affect their relationship. Because of the financial climate and the consequential cutbacks that Dutch Universities are currently facing, it is necessary that PhD candidates finish their trajectories in time, thereby delivering sufficient output. As monitored by the 'Association of Dutch Universities' (VSNU) between 2001 and 2009, the average duration of a PhD trajectory is five years, exceeding the four-year duration that is generally strived for (which is the duration of a standard PhD contract) (VSNU, 2011). This average duration is comparable across research fields and universities in the Netherlands. Policy makers, (co-)promoters and PhD candidates have been discussing for several years now whether this duration can be diminished, for example by redefining the demands, especially for those not continuing in research, or whether PhD candidates and their projects just need sufficient time to mature. Related to this, there is concern about dropout rates of PhD candidates in Dutch Universities, which have been quite high during many years and are currently being registered by most Faculties and Schools.<sup>1</sup> Preliminary study

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<sup>1</sup> Currently, dropout rates of internal PhD candidates are being registered generally. It is however very difficult and not customary to register dropout rates of external PhD candidates.

findings within a specific study setting (Graduate school CAPHRI, Maastricht University, The Netherlands) suggest that one of the most pronounced reasons for dropout is a personal mismatch between supervisors and PhD candidates.

Considering the above and considering the size of the PhD candidate population (about 2500 in 2010 in the Netherlands) (VSNU, 2011), quality of supervision and relational aspects between PhD candidates and their supervisors that might affect the performance of both and the progress and success of PhD trajectories are worth investigating in more detail. *With the present study we aim to explore relational aspects by investigating the expectations, experiences, and opinions of PhD candidates and supervisors regarding each other's role.*

This study is carried out within CAPHRI, one of the Schools (with a current total PhD population of more than 300 internal and external candidates) of the Faculty of Health, Medicine & Life Sciences of Maastricht University, The Netherlands. Facilitation and support of PhD candidates and improving the quality of supervision has been high on CAPHRI's agenda for several years already, and this study is part of several activities being undertaken for improvement of the performance of both PhD candidates and supervisors. Other arrangements already made or still in progress are: designing and implementing a progress and monitoring instrument for PhD projects, establishing supervision teams of at least two supervisors per PhD candidate; providing low-threshold contacts and safety nets for PhD candidates (PhD representatives, a PhD coordinator, a PhD confidential advisor), developing a course on improving supervision for more experienced supervisors (in addition to the general course for supervisors offered by Maastricht University); introducing an annual evaluation of PhD trajectories with Research Programme Leaders by the Scientific Director, the annual CAPHRI 'Supervisor of the Year Award', and the development of postcards with '10 Golden Rules for PhD Supervision' and '10 Golden Rules for PhD Candidates', to set the gold standard and initiate discussions between both groups about what they think is important. These cards are included in this booklet.

# METHODS

## **Design and participants**

Two web-based questionnaires with closed and open-ended questions in SurveyMonkey ([nl.surveymonkey.com](http://nl.surveymonkey.com)) were used to collect PhD candidates' and supervisors' experiences with supervision. The source population included all of CAPHRI's PhD candidates, both external and internal,  $n = 317$  and supervisors,  $n = 240$ . Of the PhD candidates, 54 responded (17%) and of the supervisors, 52 responded (22%). In this study, a supervisor was defined as either a promoter (professor) or a co-promoter (someone having a PhD degree but not holding professorship).

## **Procedure**

Invitations to take part were sent by e-mail. All internal and external CAPHRI PhD candidates received an invitation through the monthly PhD information e-mail sent out by CAPHRI's PhD representatives, one month prior to opening the survey on October 24, 2011; three reminders were sent to increase response rate (on November 23, December 12 and January 27). The survey closed on February 6, 2012. The CAPHRI PhD supervisors received an invitation via e-mail by CAPHRI's PhD co-ordinator on November 15, 2011. The supervisors received two reminders, on December 12 and January 27. Anonymity was guaranteed; participants did not have to leave their names or birth dates, and they could not be traced by the system.

## **Measures**

Two separate questionnaires were constructed for the PhD candidates and for the PhD supervisors. The questionnaires were developed after thorough discussion in cooperation with the members of CAPHRI's Board of Education, consisting, next to the PhD representatives and the PhD co-ordinator, of CAPHRI's Scientific Director and the confidential advisor for PhD candidates.

The PhD candidates' questionnaire consisted of two closed questions about the year of their PhD trajectory and the number of supervisors involved in their project, and seven open-ended questions. These were: what do PhD candidates value in their supervisor(s) and what do supervisors do to encourage them in their work; what would PhD candidates need from their supervisors for further stimulation and encouragement (one item about the daily supervisor and one about other supervisors); what difficulties do PhD candidates encounter related to supervision (one item); if and how they overcame these difficulties; and further feedback regarding supervision.

In analogy, the supervisors' questionnaire consisted of two closed questions on the number of years they had been supervising, and the number of PhD candidates currently under their supervision; and five open-ended questions. These were: what competences do they as supervisors have that are necessary/beneficial for a successful PhD trajectory (in terms of publications and/or timely completion of the PhD); what skills/competences of the PhD candidates do they value the most; what skills/competences of PhD candidates are detrimental to a successful trajectory; what difficulties did they encounter in supervising (some) candidates; and how did they overcome these difficulties.

## **Analysis**

The analyses of the predominantly qualitative data were performed in a five-step approach. First, the answers were coded separately for PhD candidates and supervisors, after which mind maps were constructed. Third, key concepts were identified and subsequently clustered in themes. These steps were undertaken by authors HB and KP for the supervisors and by MW and GK for the PhD candidates, initially on an individual basis, and then integrated after deliberation with each other. In the fifth step, defining the key concepts and themes in both groups was discussed and agreed upon by all authors.

# RESULTS

In this section the results for the PhD candidates and the supervisors will be presented separately. The open-ended questions resulted in the distinction of three main themes for both groups: personality, knowledge and skills and communication and coaching. *Personality* includes PhD candidates' characteristics such as perfectionism, self-esteem and diligence, supervisors' characteristics such as empathy, patience and flexibility. It also concerns the relationship between the PhD candidate and his/her supervisor and addresses issues as involvement and being a team player. *Knowledge and skills* refer to the statements about PhD candidates being expected to increase their knowledge on the content, improve writing skills and analytical skills, and supervisors being expected to have a solid knowledge of the topic, an extensive network and methodological expertise. *Communication and coaching* reflect the process, and for instance address the way feedback is provided, whether the PhD candidate feels stimulated by his/her supervisors and whether the schedule is monitored closely enough.

## PhD candidates

“A diamond is a piece of pit coal that has performed well under pressure.”  
(Henry Kissinger)

In our sample, 52% of the PhD candidates were in the second or third year of their PhD trajectory. 26% of the respondents were in their first year, 20% in their fourth year, and a minority started more than four years ago (Figure 1).

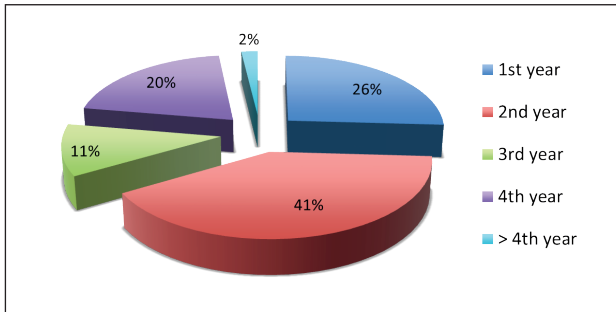


Figure 1: Year of PhD trajectory that the PhD candidate is in

Most PhD candidates have two or three supervisors (81%) and 9% of the respondents have more than three supervisors (Figure 2).

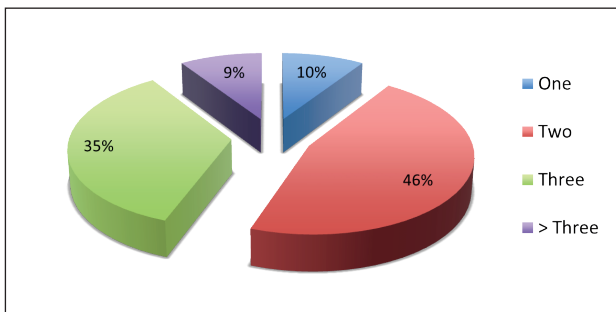


Figure 2: Number of supervisors involved in the PhD projects

In general, PhD candidates stressed the importance of supervision and of the quality of the supervision:

“Good supervision is SO important!!!!”  
 PhD candidate # 3

*“It would be very good if there was a course for supervisors. Supervisors sometimes have a blind spot when it comes to supervision and so a course would be beneficial for all parties.”*

**PhD candidate # 25**

PhD candidates also suggested that the supervisors should be assessed on performance factors such as number of successful PhDs, number of timely graduated PhD candidates, delay in work of PhD candidates and so on. Some even went as far as suggesting these performance factors should influence the supervisor’s budget. PhD candidates indicated that performance factors and other factors related to good supervision should be written into a supervision guideline:

*“I think there should be some clear guidelines for supervisors regarding what they should and are expected to do, and what they should avoid doing.”*

**PhD candidate # 8**

These statements are indicative of the general importance of supervision quality, as experienced by the PhD candidates. More specific themes of supervision quality are described below.

### *1. Personality*

The PhD candidates reflected on the personality of their supervisor(s) by identifying valuable supervisors’ characteristics for their motivation and encouragement. The candidates specifically stated that what they wanted and needed included flexibility, honesty, being a good listener, and being empathic in order to be encouraged in their work. Empathy not only means that supervisors should be able to understand the PhD candidate in work-related situations, but also in private situations, shifting from a role of a supervisor to the role of a colleague. Moreover, the supervisor showing explicit engagement and involvement in the project, but also taking an interest in the



PhD candidates as a person and in their private life influenced the majority of the PhD candidates' work in a positive way:

*"I value that my supervisor is personally very engaged in my project. She motivates me and that gives me peace and rest in very busy periods."*

**PhD candidate # 17**

*"She is always honest. You can tell her every problem you have and she will help you find a solution. She listens to your problems..."*

**PhD candidate # 8**

Some but not all of the supervisors were considered inspiring, and very successful in motivating, stimulating and encouraging their PhD candidates. In case PhD candidates did not feel inspired or motivated it was considered detrimental to the PhD trajectory. In addition to the openness and empathy of the supervisor, PhD candidates wished to be more appreciated and trusted by a supervisor. Responsiveness also seemed to be a quality of supervisors that was highly valued, but often lacking. Some PhD candidates explained that they missed the responsiveness in their supervisors:

*"A bit more interest in the work being done."*

**PhD candidate # 39**

*"To remember what we discuss and not keep forgetting and going back on things we discussed and agreed upon."* **PhD candidate # 37**

On trust, one candidate said:

*"I would need my supervisor to have faith in my abilities."*

**PhD candidate # 21**

According to the above, PhD candidates' motivation depended on a supervisor being empathic, taking an interest in the candidate, being open, being a good listener and being responsive. The candidates that did not experience these qualities in their supervisor(s) clearly missed them.

## 2. Knowledge and skills

PhD candidates stressed the importance of supervisors providing good content-related feedback and having a high level of content-expertise. Good content-related feedback was defined in terms of being clear, to the point, and providing unambiguous suggestions for improvement.

*"[My supervisor has] high expertise, real interest in my work, gives very technical and detailed reviews of my work, has good attitude. [S/he] gives very detailed review of my drafts..."* **PhD candidate # 21**

*"My supervisor is almost always available to answer my questions and is very patient explaining things. He has a lot of knowledge on the subject."* **PhD candidate # 12**

Not all PhD candidates were satisfied with the feedback provided by their supervisors. They reported needing better content-related feedback and clearer guidance. Improvement in the feedback also included a thorough preparation by the supervisor.

*"[I need] more content driven instead of vague and general feedback. Teach me something instead of talking very general."* **PhD candidate # 6**

*"[I need more] involvement and don't need them to only read the articles and change words, I need them to actually come up with new concepts or input."* **PhD candidate # 25**

*“I think it is important that they read the paperwork before meetings.”*

**PhD candidate # 22**

PhD candidates clearly needed proper content-related feedback in order to help them improve the content of their work. A high level of expertise on the content was a second and related prerequisite for progress.

### 3. *Communication and coaching*

Communication and coaching skills were much appreciated and highly valued by PhD candidates. Firstly, PhD candidates found it important to have a good relationship with their supervisors individually, but also with the PhD team as a whole. Secondly, PhD candidates found it essential that supervisors considered the way they gave feedback (according to the feedback rules). What PhD candidates valued was feedback given in a non-judgmental and constructive way, not just emphasising all that wasn't good. As long as feedback was constructive, it was evaluated positively by PhD candidates:

*“Both supervisors are very involved in the research project. [I value their] involvement and the positive feedback they give me is encouraging.”*

**PhD candidate # 4**

*“They encourage me by giving compliments when a job is done properly.”*

**PhD candidate # 23**

PhD candidates stressed that support and involvement in the process were important. When supervisors were involved and provided PhD candidates with direction, but at the same time gave some freedom in their work, this would give the PhD candidate confidence to proceed without worries. One PhD candidate explained it as follows:

*“The supervisor is helping me in finding my own way and research style.”*

**PhD candidate # 24**

PhD candidates found it important that their supervisors were available, responded in time, set deadlines and gave practical advice. They found it difficult to work when these coaching skills were missing.

*"[I appreciate that my supervisor] comes up with new ideas, sets deadlines and helps me arrange certain things to achieve goals."*

**PhD candidate # 38**

*"I need my daily supervisor to support me in the parts of the project that I have no experience with (e.g. planning a pilot-study, planning a project). I expect my daily supervisor to take the lead sometimes and not always wait for me to solve problems or address issues."*

**PhD candidate # 29**

Some PhD candidates reported the supervisors having too high workload and working under a lot of pressure. This affected feedback and meetings:

*"Due to stress and huge workload....feedback and meetings are rushed or vague."* **PhD candidate # 10**

In general, the PhD candidates complied with the excess workload by structurally working more than 40 hours a week. Some of them reported changing their own attitudes or mindset in order to deal with the problems encountered. Few even ignored the problems hoping they would go away after trying to solve it without success. Some of the PhD candidates still encountered problems and had not been able to solve their problems yet.

On few occasions personal disagreements between supervisors, and supervisors having different opinions about the content of the PhD track were mentioned as problematic. At times, larger-scale departmental conflicts, in which supervisors were involved, affected the PhD project or PhD candidate as well:

*“My supervisors have issues with each other.”*

**PhD candidate # 35**

*“[I have difficulties with] departmental or even higher degree conflicts (with or together with the supervisors) affecting the workplace of a PhD candidate in a negative way.”* **PhD candidate # 45**

Most PhD candidates stressed that talking with peers and colleagues was the first step in the process of solving difficulties, as well as direct communication with the supervisor:

*“[We solved it] mostly by negotiations.”* **PhD candidate # 10**

*“Working on the problem with people who are concerned with this problem.”*  
**PhD candidate # 22**

In addition, they also tried to develop a better relationship with supervisor(s) and make arrangements and clear plans.

From the above it follows that good coaching skills, including providing constructive feedback, taking the lead when necessary and providing clear direction were considered extremely important by the PhD candidates. However, communication was considered as important, not only between supervisor(s) and PhD candidates but also between supervisors themselves. Communicating well also helped overcome difficulties or solving problems, but not on all occasions. A high workload was generally handled by working structural overtime, instead of communicating about it. It appears that PhD candidates considered a high workload their problem, instead of a joint problem.

## PhD supervisors

“Successful are those, who inspire others.” (John D. Rockefeller)

The number of PhD candidates that supervisors guided varied: 76% reported supervising up to 6 PhD candidates, but also a considerable part (16%) supervised more than 10 PhD candidates either as a co-promoter or as promoter (Figure 3).

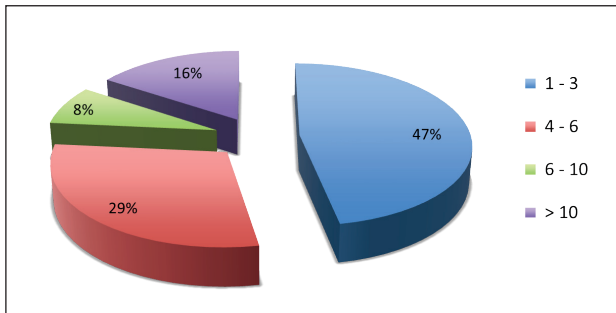


Figure 3: Number of PhD candidates that supervisors guide

The respondents were generally equally divided on a continuum from relatively little experienced to very experienced: almost a quarter (23%) just started with supervision, a quarter had 3 to 5 years of experience, 24% had 6 to 10 years of experience, and 28% had more than 10 years of experience as a supervisor (Figure 4).

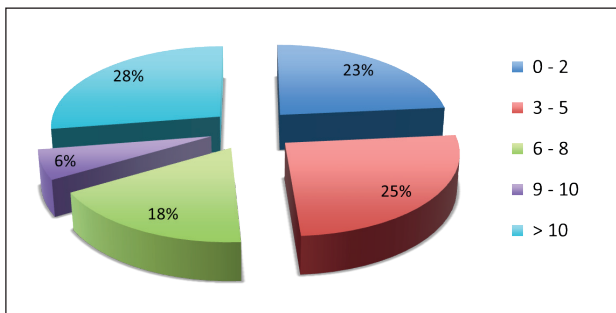


Figure 4: Years of experience with PhD candidates' supervision

From the qualities that supervisors valued in themselves and in their PhD candidates that contribute to successful completion of the PhD trajectory, the difficulties they encountered and the ways in which they acted to overcome these, the same three themes as in the PhD candidates could be derived: personality, knowledge and skills, and communication and coaching.

### 1. *Personality*

Personality characteristics related to one's qualities as a supervisor, which are helpful for the supervision process. Issues such as flexibility, analytical thinking, empathy, social competences, being a team player, patience, insightfulness, ability to self-reflect and being a good listener were mentioned. All these individual qualities were perceived as useful in facilitating the coaching process.

*“Being aware of one’s own supervision style and being able to vary the supervision style... and being able to shift the focus from professional to personal if needed.”* **Supervisor # 20**

*“Being patient, having expertise, coaching competencies... being a team worker and able to make decisions if necessary.”* **Supervisor # 7**

Personality characteristics that supervisors highly valued in their PhD-candidates were related to the ability to work in a team, while at the same time also being able to work independently and autonomously. Openness for receiving feedback and criticism, self-reflection, and enthusiasm were also seen as important individual characteristics that supervisors valued in PhD candidates. Thus, both the ability to stand on one's own two feet when needed, but also being receptive to feedback were found to be important.

*“...it is very important that PhD candidates are able to reflect on their own functioning... so that they are able to ask for help at the right moment, to articulate their needs, to take critique and integrate feedback in their work.”*

**Supervisor # 2**

*“Enthusiasm, positive outlook, independence, eagerness...”*

**Supervisor # 46**

*“Being transparent in why he or she has good or bad days, the candidate has self-reflection, and realizes in time that a thesis project is, or is not, the right choice for him or her.”* **Supervisor # 12**

According to the supervisors, two personality types in the PhD candidates could be distinguished that might hamper the supervision process and the completion of the PhD trajectory. One was a candidate that was too independent, overconfident, not being open for criticism and having troubles accepting authority and expertise of the supervisor. The other concerned candidates who were too dependent, passive, waiting for solutions offered and having no self-confidence.

*“Be too independent, do not ask for help timely; or the other way around, ask too much help.”* **Supervisor # 9**

*“...PhD not accepting (consciously or unconsciously) that supervisor might have superior knowledge and experience.”* **Supervisor # 36**

*“[The difficulty I experienced was]... to challenge PhD candidates to get more out of themselves...”* **Supervisor # 44**



The PhD candidate being sloppy or being too perfectionist was not appreciated either:

*“Perfectionism, not being able to set priorities, postponing tasks.”*

**Supervisor # 47**

*“Being sloppy and very slow with addressing feedback.”* **Supervisor # 49**

Other characteristics that were identified as difficult included rigidity, inflexibility, difficulties in dealing with stress and frustration, and a lack or loss of motivation.

## 2. *Knowledge and skills*

When reflecting upon their own qualities contributing positively to the supervision process numerous specific methodologies, knowledge of statistics and of the topic were mentioned, along with having an extensive network, experience in writing scientific papers, and previous experience in guiding research projects. One supervisor explained:

*“I have ample experience in different methodologies, and based on that I can coach the PhD candidate where opportunities and difficulties lie during the PhD track.”* **Supervisor # 23**

When reflecting upon preferred skills of their PhD candidates, supervisors mentioned qualities such as analytical skills, statistical knowledge, overview of the research topic, good networking and writing skills, and creativity.

*“Organising skills, writing skills, communication skills, time planning skills, skill to discriminate.”* **Supervisor # 1**

*“Good writing skills, working in a structured way, good analytical skills...”*  
**Supervisor # 18**

However, not all qualities were found in every PhD candidate. For example, supervisors mentioned problems with their PhD candidate's English writing skills, analytical skills and learning ability not being high enough. More specifically problems were mentioned in case of a lack of statistical and research methods skills.

*"Not able to write a research plan or not able to translate research question in sub questions that are feasible to execute; not able to organise his or her own research and data collection; no writing skills."*

**Supervisor # 44**

*"Difficulties when a PhD candidate has problems with writing an article."*

**Supervisor # 41**

Strategies to handle these problems included advising courses to PhD candidates, providing access to their own network, re-writing sections of articles or trying out different writing methods that would suit the candidate more. Some supervisors decided on taking a course for supervisors, thereby improving their own supervising skills. However, not all difficulties could be resolved by these strategies. The workload was sometimes considered too high since some supervisors had too many PhD candidates, which compromised the supervision quality. This problem was considered unsolvable:

*"It is difficult to overcome this issue, since it is not done to give PhDs to somebody else. Also, of course because somebody else may not have the expertise."*

**Supervisor # 27**

Generally, PhD candidates and supervisors had the same opinions about necessary skills and competences for supervisors, concerning mainly expertise and experience. Problems for supervisors arose when their PhD candidates were lacking necessary skills. Then more coaching was considered necessary.

### 3. *Communication and coaching*

Communication and coaching aspects that were considered important for the PhD trajectory concerned motivation, availability, support, expectations, and personal relationship between the supervisor and the PhD candidate. Supervisors highlighted that their ability to motivate the PhD candidates, and make them enthusiastic about the research was also brought about by their own dedication to the project.

*“Inspiring young researchers concerning research, especially applied science and pragmatic studies, passion for research, creating an egalitarian climate where the candidate is stimulated to take responsibilities...”*

**Supervisor # 12**

*“Easy access both on- and offline (just come to my office) creating a safe environment in which all suggestions/comments etc can freely be discussed without judgement.”* **Supervisor # 5**

*“I create a safe learning environment and connect candidates with similar themes to enhance creativity... I create challenging experiences with safe environment, so they are able to experience success.”*

**Supervisor # 32**

Supervisors also tried to help the PhD candidates deal with (occasional) complexities that arise during team meetings. One supervisor highlighted:

*“In joint meetings with the whole promotion team (PhD candidate, co- and promoter(s)) I further notice that a PhD candidate cannot always process all information and questions directly. Therefore, I, as co-promoter, sometimes have (if PhD students asks for it) a talk afterwards, in which we go through everything and work out a concrete step-wise plan. I do think this especially*

*occurs in the beginning of a PhD trajectory (year one and two)."*

**Supervisor # 17**

Issues that supervisors considered problematic to deal with were lack of motivation, lack of organisational and communication skills in their PhD candidates.

*"Nine to five mentality, unrealistic optimism, bad time-management, stubbornness."* **Supervisor # 10**

*"Mixing private life with professional life, time management, lack of motivation to work after working hours."* **Supervisor # 13**

*"No rapid communication of for example occurring problems."*

**Supervisor # 1**

*"Not doing what has been agreed upon."* **Supervisor # 8**

Supervisors also expected that, over time, PhD candidates would take more initiative in and responsibility over their project, and found it problematic if such transition did not take place. They also acknowledged that balancing independence of the PhD candidate and guidance by the supervisor is difficult. Expectations are pivotal in this, yet not circumscribed.

*"If PhD candidates are not slowly developing more insight and responsibility of their project (in cooperation with the PhD team)."*

**Supervisor # 16**

*"Balance between telling the PhD candidate what to do, and allowing him/her to develop own ideas."* **Supervisor # 25**

*“What can you expect from a PhD candidate within 1 year?”*

**Supervisor # 16**

Strategies by supervisors to handle these difficulties included making explicit and clear agreements, and being more responsive to the PhD candidates' needs.

*“Stay clear to the candidate, make fixed appointments and when nothing works, stop the process.”* **Supervisor # 30**

*“I am busy, helpful: reflecting on it and working together with co-supervisors and assessing what works.”* **Supervisor # 20**

*“[Having good] insight into the personality of the PhD student so that you know better how to guide/give directions.”* **Supervisor # 14**

Some supervisors interpreted the issues mentioned above in light of the learning process that a PhD candidate goes through, and discussed the impact of a PhD trajectory on the future career of the candidate.

*“Try to regard the PhD trajectory as a learning trajectory. Have attention for the career of your PhD candidate, he/she is not just doing research for you/with you, but also developing a career...”* **Supervisor # 31**

*“...show PhD candidates all facets of doing a PhD so that they are prepared and able to continue research when they are done, and take the time to plan the future, what to do after PhD is finished.”*

**Supervisor # 22**

The relationship between supervisors and their candidates deserves special consideration here. It was frequently mentioned by both parties as a source of

stress and frustration in case of a loss of trust between each other or a mismatch on a personal level. Supervisors also mentioned difficulties in dealing with PhD candidates who had personal problems that affected their work capacity negatively. Sometimes the supervision team did not function well, such as different supervisors steering in divergent directions, different views within the team, and not having good interpersonal relations within the supervision team:

*"[I encounter problems regarding]...Different views within the inner circle on supervision; occasionally time shortage and political stuff (best left out of students' work)."* **Supervisor # 22**

*"Unclear communication about cooperation in supervisors group and authorship, different supervisors who steer in different directions, or in different ways asking too much supervision from too many persons no penalties-consequences when students do not meet deadlines."*

**Supervisor # 34**

*"No [problems have not been solved yet], variety among supervisors and different interests among supervisors."* **Supervisor # 34**

Finally, supervisors also mentioned some procedural issues, such as lack of funding and the difficulty in guiding external PhDs who were physically far away.

Supervisors were quite clear about what their input should be in the coaching process. What supervisors struggled with was the amount and type of support needed in the different stages of the PhD trajectory and finding the right balance between delivering input and allowing the PhD candidate the freedom to decide for himself. Also the personal relationship between supervisor and PhD candidate sometimes gave rise to problems, which were handled by making clear agreements with the candidate, being responsive, and acknowledging the fact that a PhD trajectory is about learning and development.

# DISCUSSION AND CONCLUSION

| *“Knowledge speaks, but wisdom listens.” (Jimi Hendrix)*

We set out to evaluate PhD candidates’ and supervisors’ experiences with supervision. By specifically examining what the individuals from both groups valued in each other, we contributed to an increased understanding of the wants and needs of both parties.

In general, the respondents acknowledged and confirmed the importance of receiving (for the PhD candidates) and providing (for the supervisors) good quality supervision. According to both groups, good quality supervision will increase motivation, keep the flow in the project (which might possibly prevent unnecessary delay or even dropout) and enhance the self-confidence and professional development of the PhD candidate.

On a *personal level*, PhD candidates’ motivation depended on a supervisor being involved, empathic, open, a good listener and responsive. PhD candidates also appreciated it when their supervisors took an interest in them as a person and would consider their personal life. This personal attention was considered so important by PhD candidates, that if it were lacking, it could create problems in the PhD trajectories. Similarly, the supervisors mentioned flexibility, empathy, social competences and being a good listener as their own personal characteristics contributing positively to the trajectory. They were aware that motivating PhD candidates, investing time and providing emotional guidance and support were necessary qualities to provide good supervision. Concerning personal attention, supervisors also acknowledged the importance of having an insight into the personality of the PhD candidate in order to tailor the supervision to individual needs.

Attributes appreciated by the supervisors in their PhD candidates were the ability to stand on one’s own two feet when needed but also being receptive to

feedback. Difficulties encountered involved overconfident PhD candidates who did not acknowledge the supervisors' expertise on the one hand, and passive candidates who relied too heavily on the supervisor on the other hand. Also candidates being either too sloppy or too perfectionist were not much appreciated. Apparently, given the finding that these 'adverse' attributes can be found on both extreme ends of a continuum, a balance is sought or strived for but not always obtained.

Strikingly, although both parties mentioned that personality characteristics could influence the relationship between PhD candidate and supervisor no strategies or solutions were provided in case the desired attributes in the other party were lacking.

Generally, PhD candidates and supervisors had the same opinions about necessary *knowledge and skills* for supervisors. These included expertise on the content, methodological skills, abundant experience in publishing, knowledge of statistical methods and having an extensive network. In addition, the PhD candidates stressed the importance of expertise and knowledge being communicated by good content-related feedback. This feedback should be specific and provide a clear direction to the work in progress.

Necessary knowledge and skills for PhD candidates, that were more or less expected to be present, were analytical skills, statistical knowledge, good networking and writing skills, and creativity. Not all these qualities were always found in all candidates. Strategies supervisors used to overcome these gaps included advising on courses to take, helping them with the writing and monitoring the process and progress frequently. Some even took a course on supervision in order to improve their supervision skills.

It was recognised by supervisors that a PhD trajectory was a learning trajectory, i.e. a development should take place in the work and professional attitude of a PhD candidate. It was expected that over time PhD candidates would take more initiative in and responsibility over their project. In case that this did not happen, supervisors found it problematic. Some PhD candidates also reported a lack of trust in their capabilities and expressed the wish that their supervisor(s) would recognise



a candidates' (growing) expertise. While in general the development of a trajectory is considered important by both PhD candidates and supervisors, the latter group feels that on some occasions development is lagging behind, while the former group occasionally feels that their development is not recognised enough. The supervisors specifically expressed their struggle with coaching a candidate towards more independence, and knowing what can or cannot be expected of a person in a certain phase of the trajectory was considered difficult. The results show that both groups have expectations; however we are not sure whether these are communicated and discussed with each other.

Both PhD candidates and supervisors, again, agreed on the importance of good *communication and coaching skills* by the supervisors. PhD candidates valued good coaching skills, including receiving constructive feedback, supervisors who were taking the lead when necessary and providing clear direction. Similarly, supervisors wanted to motivate the candidates and make them enthusiastic about their research by showing their own dedication, by being available, providing support, and creating the right atmosphere. Inspiring their candidates and making them feel passionate about their research were aims frequently mentioned. Communicating well also helped to overcome difficulties or solve problems. However, not all teams communicated well with each other. Sometimes there were personal disagreements between supervisors, or no consensus about the work of the PhD candidate that hampered the progress within the trajectory. Problems on a departmental level were also reported as detrimental for the progress. Further, although PhD candidates also acknowledged the importance of direct communication, some issues such as too high a workload were handled by structurally working overtime, and not by communicating about it. However, it is not clear from the findings whether they did not raise the subject at all or whether they tried to discuss it but were turned down. Some supervisors severely criticised the 'nine to five mentality' or the 'lack of motivation to work after working hours'.

Regarding the coaching and relationship between PhD candidate and supervisor in general, it is noteworthy to mention the nature of the relationship between the

PhD candidate and the supervisor, which is based on a power difference. Hence, PhD candidates are bound to be affected more if the relationship is not good than the supervisors. We believe that PhD candidates are well-aware of the power difference in their relationship with supervisors. Consciously or subconsciously, the dependence on the supervisors' judgement, feedback, availability, and approval affects the trust in one-self and self-esteem and can cause insecurities that may vary from minor uncertainties that can easily be solved or discussed, to fundamental insecurities that can hamper daily functioning. Although supervisors may also be well-aware of this disparity in their mutual relation, they may not always be aware of the day-to-day effect it has on the mind and attitude of their PhD candidates and the level of insecurity and dependence it involves. In that light, direct and explicit communication is all the more important.

Some limitations of the present study must be taken into account in order to correctly interpret the findings. Firstly, we had a limited response rate; however we believe the responses were reflective of the variety of PhD candidates' and supervisors' experiences, considering that a lot of information received was centering repeatedly on the highlighted themes, indicating saturation. Secondly, we cannot pair the responding PhD candidates with the responding supervisors considering that participation was anonymous. This would have been particularly interesting since it would have enabled us to study whether there are interpretational differences or strategic differences in recognising or dealing with problems. Thirdly, our questionnaire did not include PhD candidates having to reflect on their own attitudes, knowledge or skills whereas we asked the supervisors about their attributes contributing to a successful PhD trajectory. Given the finding that supervisors sometime struggled with personality attributes of the candidates it would have added to the findings if we knew how PhD candidates interpret the importance of their personality to the trajectory. Fourthly, difficulties and how to overcome these were topics included in separate questions. Therefore, we could not always relate the strategy to the problem. A substantial part of the participants combined both questions enabling us to integrate them. What

is missing though is the strategy used to deal with personal problems between the PhD candidate and the supervisor. PhD candidates mentioned direct communication as a general strategy in case of problems and supervisors mentioned adapting to the candidates' needs and, with the help of the other supervisors, trying to find the best strategy. However, we cannot make definite inferences regarding how both groups deal with these problems. Finally, the present study has been conducted within one graduate school and the question is whether the results are applicable to the same extent to other schools as well. However, considering this particular graduate school is quite large and encompasses numerous departments that vary in size and topic, we believe that this study can be of use to other PhD candidates and supervisors in other non-laboratory academic settings as well.

# RECOMMENDATIONS

“When people would give each other more space, they would undoubtedly draw closer to each other.” (Unknown)

To facilitate successful supervision for both supervisors and PhD candidates we will present general recommendations first, followed by separate recommendations for PhD candidates and for supervisors that are based on the findings of this study.

## General

- Mutual expectations should be explicitly discussed at the start of the trajectory and have a regular follow-up. Just like any other meeting an agenda and minutes should be made. Topics to be discussed should include practical expectations, such as for example how many days prior to the meeting the PhD candidate is to send the written material, or how long after a draft article has been sent to the supervisor; he or she should give feedback to the PhD candidate. Also responsibilities (of the PhD candidate, of the supervisor(s), or shared) should be made explicit. Naturally this might vary by the stage the trajectory is in. Other topics could include more generic expectations regarding the way of working together, such as discussing how to have clear and open channels of communication, and how to establish opportunities to discuss progress of the PhD trajectory with each other.
- Feedback rules should be used whenever feedback is given. These rules state: start with the positive, mention in clear and specific terms what aspects need improvement and how to achieve them, and end with the positive. Constructive feedback is important as it contributes to a positive atmosphere, nurturing self-confidence and self-esteem in the receiver. By feedback being concrete and specific, it prevents misunderstandings and decreases likelihood of negative feelings, uncertainty and resentment. Although it is a simple rule for professional academic behaviour, it remains important to emphasise time and again.

- During the PhD trajectory, expectations and responsibilities for PhD candidates vary, and so do the level of control and guidance by the supervisor. It is good to monitor the expectations of each other, and adjust levels of control and guidance depending on the PhD project's phase and PhD candidates' performance. Discuss these issues openly, either during regular meetings or during yearly evaluations.
- During the yearly evaluation, do not only discuss the progress of the PhD trajectory, but also talk about the relationship and communication within the PhD team. Write notes about this in minutes or in a document for annual evaluation of the trajectory as well.
- Ask for mutual feedback regarding the process and progress of the PhD trajectory and how the supervision is being experienced at regular intervals of the PhD trajectory. Talk about the points of improvement in the way feedback is given and on communication within the PhD team. Both parties are responsible for bringing up issues related to personal characteristics, knowledge, skills and communication and coaching skills that need to be changed or improved.

### **For PhD candidates**

- Make a long-term, structured plan of meetings with promoter(s) and co-promoter(s), to ensure there is sufficient guidance at every stage of the project. If the project enters a busier or quieter phase, the frequency of meetings could be adjusted with consent of all those involved.
- If you would like to change something, initiate the process, and take responsibility for the PhD project and for your own contributions and activities and contribute to an open atmosphere of giving and receiving feedback.
- To help monitor the responsibilities and progression of the project, take minutes of team meetings and send them to promoter(s) and co-promoter as a basis for next meeting.

## For supervisors

- HR agents should be involved in the selection and recruitment of a PhD candidate, since they have knowledge and experience regarding the selection procedures, and can be of valuable help in making adequate choices in the process of the selection of the PhD candidate.
- Supervision is a demanding task and supervisors are generally not specifically trained to provide supervision, but have to acquire these skills 'on the job'. Therefore, attending supervision courses or peer exchange meetings at regular points in time is advisable, to regularly discuss supervision issues confidentially with peers, learn from each other's approaches and support those struggling with specific issues. More experienced supervisors should advise and coach less experienced supervisors on how to develop and improve supervision skills, for example, by sharing the supervision of particular PhD candidates as a team.
- Personalise your approach: different PhD candidates require different styles of supervision, and different phases of the project require varying levels of support and control. Help your PhD candidate to gradually become more independent and self-confident.
- Try to open doors for the PhD candidates by sharing professional networks. PhD candidates appreciate it.
- Content-related knowledge and expertise are important, but do not forget that PhD candidates highly value a personal approach and sensitivity for their individuality, and are more vulnerable to the way feedback is given rather than what the feedback is about content-wise.
- Since supervision is a demanding and time-consuming task, before taking up responsibility for supervising another PhD student, honestly and realistically evaluate whether there is enough time and energy available for it. If not, divide supervision tasks clearly over several members of the supervision team, offer assistance in the form of co-authorship, ad-hoc participation in the project or refer the PhD candidate to another supervisor.

- Open up a discussion within research schools regarding a policy about the quality of PhD supervision and means to evaluate its quality.
- Be conscious about the dynamics within the supervising team and how this might affect the PhD candidate and his/her work. Preferably, the different supervisors within the team complement each other. There should be one supervisor (daily supervisor) that will take up an intensive coaching role and is available most frequently.

# ACKNOWLEDGEMENTS

We would like to thank the PhD candidates and supervisors who responded to our questionnaires, as well as our reviewers Frans Willems, Inge Houkes, Laura Hochstenbach and Tanja de Bruijn situated at different levels of CAPHRI and Maastricht University for their valuable comments that helped to improve the text of this booklet. We would also like to thank the Educational Board; Onno van Schayck, Nanne de Vries and Trudy van der Weijden, for their support and confidence in us to perform this research and their support to CAPHRI PhD candidates.



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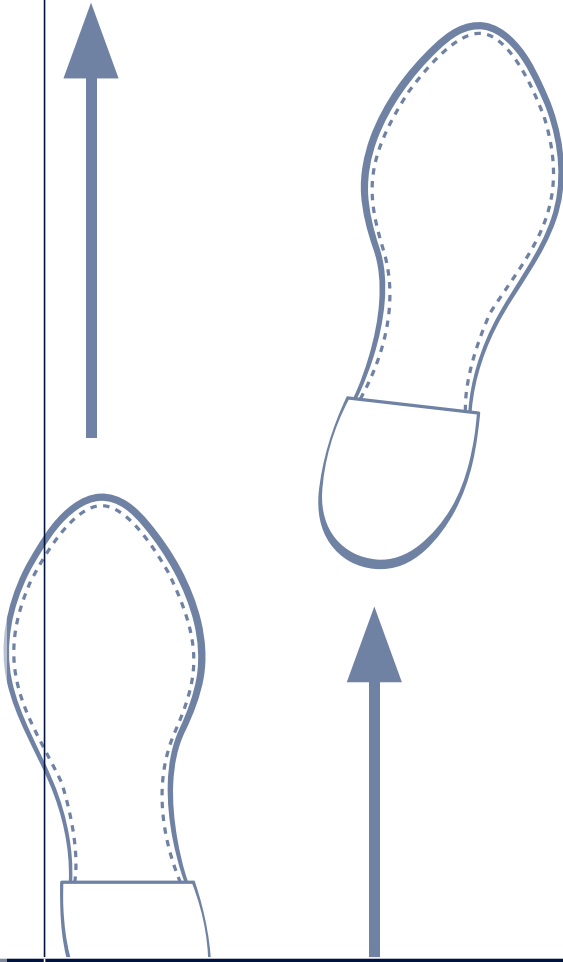
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