Standards of supervising PhD candidates by academic staff
This version is from June 7, 2023

In the FSS PhD policy, the PhD candidate is central.[1] The policy aims, among other things, at an optimal wellbeing of the PhD candidate, excellent support of the PhD candidate in conducting research and realizing the PhD, timely completion of the thesis i.e. within the period agreed upon at the start, and, after obtaining the degree, good prospects for continuing the career in science or an application of the knowledge and experience in another professional field. Achieving these goals is primarily of interest to the PhD candidate, but FSS, as faculty and their staff members, also benefits by having the PhD process with fewer problems, less staff time consuming, leading to fewer dropouts, and more scientific and financial returns. Recognizing that multiplicity of actions is necessary to achieve the goals, the Graduate School, in collaboration with other stakeholders such as research managers and department heads, tests behaviors, norms, and rules in the PhD process against their contribution to these goals, and adjusts them as necessary. Supervision of FSS staff should contribute to the achievement of these goals. Here we formulate our standards and policies regarding supervisory staff.

We have formulated sixteen crucial points to consider.

The quality of supervision
1. The supervision is of sufficient quality.
2. The supervisor is trained and conducts peer consultation.
3. Evaluate with the candidate.
4. Evaluate with your supervisor and the management.
5. The interest of the candidate is paramount.
The intensity of supervision
6. Spend sufficient time on supervision.
7. Limitation of the number of PhD candidates to be supervised.
Successful collaboration as a supervisory team
8. Supervision is an active and collective task.
9. Take responsibility.
10. Supervisors coordinate their duties with each other in a transparent manner, and include the candidate in this coordination.
11. Guidance during the whole project.
The number of supervisors
12. Supervision is carried out by two supervisors.
13. Preferably two supervisors.
Formal position of a supervisor
14. Supervision of PhD candidates is a regular task of the academic staff.
15. Duration of the task.
16. Appointment.

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[1] Of course, this does not mean that we do not have to care about supervisors, and that supervisors have only obligations and PhD candidates have only rights. The intention is to make the standards more bi-directional.

The quality of supervision

1. The supervision is of sufficient quality.
   In general, it can be said that a good PhD supervisor is genuinely interested in the PhD project and the candidate, is able to guide the candidate to successful completion within the agreed time frame, spends sufficient time to provide adequate guidance, can provide scientific and other mentoring, and has a supportive personality.[2] It can help that a supervisor is active in her or his research field, has a good track record of supervising PhD candidates, has a strong publication record, and has an extensive substantive and professional knowledge of conducting research in the social sciences. The supervisor has an understanding of the variation in the population of PhD candidates and the demands this places on supervision. The supervisor can handle variety of roles (providing support, providing guidance, and assessing progress and quality). The supervisor can guide to PhD candidate's independence. The supervisor recognizes problems and impending delays, and has adequate courses of action in these situations.

2. The supervisor is trained and conducts peer consultation.
   To promote the achievement of important goals in the PhD process (see above), the supervisor needs skills. These can be learned and trained. Training is focused on increasing knowledge about supervision in general and supervision of PhD students in particular (including the structural embedding of PhD students in the university system and the resulting power relationship, and including the personal aspects of the candidate-supervisor relationship); increasing the individual skills of a supervisee, and supporting a culture and practice of peer review and bilateral peer support of supervisors. Training is organized by HRM.[3] The practice of peer consultation (including intervision) is being developed in FSS.

3. Evaluate with the candidate.
   At least five times, an Annual Progress Review (APR) is conducted in a meeting of the supervisor with the candidate, namely in the first six months of the track, at the end of the first year, and then every year (guidelines are provided in a separate document). In a part-time project that is stretched over a longer period of time, the frequency is the same, but the interval is greater. The APR is held with all types of PhD candidates. This conversation can be either formal or informal. If it is conducted formally, it can be part of the annual conversation between the supervisor and an employee PhD candidate. That this conversation is held at least five times is a guideline - it is probably better to have more frequent in-between, more informal, additional evaluations. Too much bureaucracy should be avoided, but at the same time such a conversation in which supervisors and candidate have a meta-conversation about the project is very important. Good topics for this conversation have been described elsewhere. This APR can be held in the presence of all supervisors, but it is not necessary – sometimes it works better to have a 1-on-1 meeting between the first supervisor and the candidate. Reporting of the formal and within VU mandatory annual interview with an employee PhD candidate is required through the VU system. In other cases, it may be useful to send a report of the APR or important elements of it to the Graduate School, the department head and/or research manager, or to approach someone to discuss a particular aspect.

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[2] Based on https://www.discoverphds.com/blog/what-makes-a-good-phd-supervisor, August 12, 2020. For an elaboration of quality we refer to standards and guidelines formulated by Leiden University (Annex 1) and UMCG (Annex 2). Supervisors: please read these standards and guidelines, consider them and use them to your and your candidate's benefit.
Please also note the Marie Skłodowska-Curie Actions Guidelines on Supervision, http://dx.doi.org/10.2766/508311. The guidelines concern the roles of the supervisor, PhD candidate, and the institution, and training and professional development for supervisors.
[3] The course 'Supervising PhD candidates' is designed for supervisors with one to five years of experience. https://services.vu.nl/ > HRM > training and education / Opleiding en ontwikkeling > Learning and development / Opleiding & Ontwikkeling > Take action now / Direct regelen > search 'Supervising PhD candidates' / 'Begeleiden van promovendi'.

4. Evaluate with your supervisor and the management.
   Supervision is discussed in the supervisor's annual consultation ('jaargesprek') with her or his supervisor (Annex 3). The supervisor also takes timely initiative to discuss events in the project and supervision with the trustee, departmental management, and the Graduate School, depending on what is going on.
5. The interest of the candidate is paramount.
   It is not desirable that other interests, such as the individual interests of a supervisor or institutional interests, than those of proper supervision of the PhD candidate play a decisive role in the consideration of appointing supervisors. A supervisor has interests in the conduct of PhD research (see below), but should not put the interests of her or his own research or career ahead of those of the PhD candidate. In particular, care should be taken for possible (or the appearance of) conflicts of interest when considering the addition of a supervisor from a funding institution or an institution that has or may have an interest in the conduct or outcomes of the research. Such an appointment can only take place if a conflict of interest can be ruled out and the independence of the supervisor is undisputed, and the supervisor contributes fully to the supervision, i.e. supervises frequently and intensively as well as having an important substantive contribution.

The intensity of supervision
6. Spend sufficient time on supervision.
   In supervision, quality is paramount, but quality cannot be realized when a supervisor does not devote sufficient time to supervision. To promote that sufficient time is spent on supervision, FSS formulates a quantitative rule for minimum supervision time, at the risk of interpreting a minimum as always being adequate and aspirational. Supervisors and PhD candidates are expected to meet frequently (e.g. a few times a month) to discuss progress and expectations. Taking holidays into account, this adds up to twenty to thirty conversations of about an hour that a candidate has with (one or more) supervisors in a year; in the beginning of the trajectory meetings are more frequently than in later years. We estimate that in a four-year project a minimum of 120 hours per year (including contact time, preparation and other tasks) will be required for the two supervisors combined (Annex 4; summarized below).

Plan of supervision time (minimum requirements) (hours)

Year	Activity	Contact	Supervisor 1	Supervisor 2
1	Regular	30	15	30
	Other	7	31	39
2	Regular	20	10	20
	Other	9	24	54
3	Regular	20	10	20
	Other	4	19	34
4	Regular	20	10	20
	Other	13	64	75
Average per year		31	46	73

In a part-time project that is stretched over a longer period of time, the relative frequency of meetings (and the time investment) is the same, but the interval between meetings is greater. The minimum frequency of contact applies if the project is progressing; in the event of illness or stagnation of work, it is of no use, and consideration must be given to when guidance can be resumed. The calculated supervision time refers to the plan as made before the start of the project. Some candidates require more supervision, others less.

Devoting sufficient time to supervision also means giving adequate priority to the smooth running of the doctoral process. For example, it is often desirable for a candidate not only to submit questions to supervisors in writing, but also to be able to discuss issues in the PhD process ver-

bally on short notice. Feedback on a product (e.g. a draft chapter) should be given in a timely manner. The feedback period should be agreed upon in advance, and not only should the supervisors' schedules be taken into account, but above all the candidate's interests. If the candidate has to wait for feedback, it may delay the implementation of the project.

7. Limitation of the number of PhD candidates to be supervised.
   To avoid an excessive task load in supervision, to spend enough time for every supervised PhD candidate, and to allow sufficient time for other tasks in addition to supervising candidates, there is a cap on the number of candidates supervised by one supervisor, namely four to six when candidates are working full time on their PhD and six to nine when all candidates have a part-time project that is stretched over a longer period of time. The maximum may be increased by one if an externally funded project secures additional time for supervision. Furthermore, in case a staff member who attracts a fellowship (including a new PhD project) with supervising the PhD candidate to be appointed exceeds the maximum allowed to supervise candidates, the policy is that an exception will be made to ensure that the connection between the content of the awarded research proposal and the conduct of the PhD research. This means that the grant recipient can advise (and assess) the PhD candidate and can co-author publications as a team member. To ensure that there are always (at least) two active supervisors, a professor or other staff member with ius promovendi of the faculty (not being the grant recipient) will be appointed as first supervisor. The grant recipient is added to the team as second supervisor or co-supervisor. The maximums listed are not target numbers; the achievable number depends on experience, on what tasks are included in the supervision, and on what other tasks are performed. Exceeding the limit of this cap requires permission from the department head. The GSSS will also monitor the number of PhD candidates to be supervised.

Successful collaboration as a supervisory team

8. Supervision is an active and collective task.
   The supervisory task should be shared with another supervisor but not delegated to her or him. A PhD candidate is in training to become an independent researcher. As such, she or he needs guidance and "on-the-job" supervision. The PhD supervisors are responsible for providing the candidate with supervision, guidance and feedback.

9. Take responsibility.
   The first promotor is ultimately responsible for the affairs of the PhD project[4], and to be held accountable by the management of department, faculty and university. If the first promotor at the time of appointment as supervisor does not have an employment contract with FSS, or is not appointed as an endowed professor, the second promotor shall be the supervisor to be addressed.
   Responsibility spans many phases and domains. We highlight two of them. At the time of admission of the candidate, the supervisors must be convinced of the feasibility of the project. This concerns the content of the project, the feasibility of the time schedule, whether the candidate has sufficient time to complete the project, the material conditions, and other conditions. Supervisors should also consider whether they have sufficient time for supervision, and the ability to supervise the project throughout its duration. A second phase is that when completion seems near, but still requires a lot of work, and the agreed upon duration of the project is in danger of being exceeded. Supervisors should make an all-out effort to complete the project successfully.

10. Supervisors coordinate their duties with each other in a transparent manner, and include the candidate in this coordination.
    Each supervisor has specific expertise, broad expertise, and a good eye for the whole of the promotion process. When different supervisors supervise predominantly from their own expertise, unique within the team, this will lead to partial supervision. Partial supervision is undesirable

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[4] However, the dissertation is assessed by the supervisor and co-supervisor (article 22, VU Doctorate Regulations).

because of the integral responsibility of supervisors and the need of a PhD candidate to be supervised for the whole of the project. Moreover, the possibility arises that guidance from or agreement with one supervisor may be overruled by another, for example the first, supervisor at a later stage. The likelihood of these slippages increases the more supervisors there are with a less well-defined division of labor. Therefore, it is better to limit the number of supervisors and to involve scientists outside the supervisors earlier in the debate about the quality or direction of the research, so that the role of the supervisors, namely guiding the PhD candidate above directing the research, remains clear.

11. Guidance during the whole project.
At a minimum, each supervisor should be involved in an article or chapter at several crucial times: (1) at the development of the initial idea in which the outline of the article or chapter is sufficiently clear so that it can be determined that the outline is academically sound and that the article or chapter fits into the dissertation (in the case of an extensive research outline written before the start of the trajectory this has already happened, but often this happens later in the trajectory), (2) at the first (almost) full draft so that adjustments can still be made (at about 60% of the time required), (3) at the final draft to check whether the quality is sufficient and the content appropriate to include it in the dissertation and to submit it to scientific colleagues for discussion (for example through a conference presentation or submission to a journal), and (4) when the review has been received from the scientific field (after a discussion at a conference, or after the assessment by a journal editor). In the we assume that also each supervisor spends substantial time on each article or chapter (in Annex 4 the time allocation for the least active supervisor is given: 8-10 hours reading per article or chapter; 10-15 hours per year contact). If there is only supervision by the first supervisor at the end of the process for an article or chapter, the first supervisor can only approve it or make marginal suggestions for improvement. This seriously erodes the responsibility of the first supervisor. For other judgments than these two, such as disapproval or requiring major changes, it is necessary to overrule the second supervisor, and for that it is too late. Such a negative judgment damages the candidate because a lot of work has been for nothing and serious delays in the PhD program occur. It also damages the second supervisor because this supervisor is judged de facto to have given poor and inadequate supervision, with wrong choices and insufficient attention to scientific quality.

The number of supervisors

12. Supervision is carried out by two supervisors.
Reasons for having two supervisors, and not one, are that supervisors may have different expertise and competencies, so that they complement each other; the four eyes principle in which supervision is transparent and supervisors can steer each other; and to accommodate a short-term absence or low availability of a supervisor. Moreover, in this way the time devoted to the supervision can be both sufficient but also realistic if it is shared between the supervisors in a balanced and fair manner. At the start of the PhD project, supervisors agree on the division of tasks between them (guidelines are provided in a separate document) and on the calculation of time spend on supervision (Annex 4). We discontinue the use of the term 'day-to-day supervisor'.[5]

13. Preferably two supervisors.
Two supervisors are appointed (VU Doctorate Regulations, Article 10). In the interest of the PhD candidate, it is desirable to exercise restraint in appointing more than two supervisors. With more than two supervisors, the chance increases that the PhD candidate will not feel supported but rather overwhelmed by the (collective) opinions of supervisors. The chance also increases that supervisors have a different opinion on, for example, the quality of the work or the direc-

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[5] There are two reasons for this. The first is that it may falsely suggest that the other supervisors are at a great distance and do not have to worry about the day-to-day activities in the project. The second is that day-to-day supervision is not necessary or even desirable in a PhD project, although there may be periods when there is daily contact between supervisors and candidate.

tion of the research. It is not a problem in itself – and it also fits with the academic habit of striving for completeness of views and pluralism – if supervisors differ in their opinion on these or other topics. However, it is necessary to prevent the conversation between supervisors from dominating over the conversation with the PhD candidate, and that the PhD candidate must comply with mutually incompatible or contrasting wishes or demands of supervisors. Limiting the number of supervisors is also desirable from a practical standpoint. The necessary frequent joint consultation is more difficult to organize when there are more participants in the consultation. There is also less staffing and less consultation and coordination required when there are fewer supervisors. Being able to change gears more quickly is in the PhD candidate's best interest.

It is only exceptionally that more than two supervisors are appointed. One reason for the addition of a supervisor may be that specific expertise becomes available which must be used on a structural basis. This is recognized, for example, in the idea of 'team science,' i.e., a collaborative effort to address a scientific challenge that draws on the strengths and expertise of professionals trained in different fields. Usually, the appointment of two supervisors already provides the opportunity to have this different expertise on board, and it is not necessary to appoint more than two supervisors for this purpose. Adding additional or ad hoc expertise to the project can also be done in a different way. For example, the use of ad hoc expertise for a substantive focus of a part of the doctoral research or for a methodological or statistical part of the dissertation can be justified through an acknowledgement or co-authorship of a chapter or article (according to the applicable norms in academic publishing). The structural commitment shows itself in the requirement that the all supervisors review the manuscript integrally against the requirements[6].
A second reason is that from the organization's perspective, there are considerations for appointing three or even four supervisors, taking into account the candidate's interests. A novice supervisor (one who is supervising her or his first or second candidate) may benefit from having example of how other supervisors supervise. It goes without saying that the other supervisors are then also active, or even more than in other cases. Thus, there is not always a reason to assemble a team of three in the case of a novice supervisor, although it may make sense when there are also two other supervisors with vastly different expertise, as outlined above. Similarly, it is natural (and conditional) that the supervisor be trained in supervision. A third consideration is that an additional supervisor is needed when the project is organized from different institutions. For example, if the data are made available from another organization, and the responsibility from that organization plays an active and crucial role. A fourth example is that of a joint degree in which two universities each take responsibility; in this case four supervisors may be desired, for example, to continue responsibility when one supervisor discontinues. Finally, there can always be the suggestion of appointing a third supervisor. The nomination form provides this space, and is the basis for consultation on the proposal.

Formal position of a supervisor
14. Supervision of PhD candidates is a regular task of the academic staff.
PhD supervision is characterized by different types of activities that are both teaching and research-related. In addition to training provided by or through the GS, supervisors train a candidate directly related to conducting research. This training has similarities with supervising a thesis as written by students in the bachelor or master program. Training a new generation of researchers requires more than just teaching specific skills. It also involves developing a research attitude and internalizing scientific and ethical standards when conducting the research. In addition to this training, supervising a PhD project also provides opportunities to expand one's own research agenda. For example, the PhD research may be part of a larger research project of which the supervisor is the principal investigator. In other cases, the PhD candidate has provided a topic that has been developed in such a way that it fits well with the supervisor's research, or

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[6] As set by the faculty and the VU regulations (Article 22, VU Doctorate Regulations).

that gives the supervisor the opportunity to explore and develop new lines of research. While supervision is a task, it goes along with the recognition that the supervisor has a personal or professional interest in the supervision.

In every case PhD supervision is a regular task of scientific staff, and therefore there is also funding for supervision. The various sources are outlined in the document 'Funding for time spent on PhD supervision.'

15. Duration of the task.

Many tasks in FSS are performed by academic staff for a specific period of time, often three or four years, with the possibility of reappointment. Such a term allows, on the one hand, for a person to settle in and benefit from a longer period of time, and, on the other hand, it is not a given that a task will be continued for a long period of time. A supervisor of a PhD candidate is appointed for the (intended) duration of the project. Depending on the length of funding and the progress of the project, this varies from more than four years to as much as eight years or longer. Reasons for changing the supervision structure can be that the cooperation in the team is no longer productive, as described in the document 'Procedure for PhD candidates and supervisors in case of an issue in a PhD trajectory'. A supervisor may wish to terminate her or his supervision prematurely due to her or his other priorities. However, this is only possible if the candidate has been heard, and her or his interest does not oppose the supervisor's early departure.

16. Appointment.

Each supervisor is appointed as promotor or co-promotor by the Dean and registered as such in Hora Finita. The department head approves the start of a PhD project. She or he is heard (as a member of the 'Pool of Professors') in the appointment of supervisors of all candidates in FSS. This procedure is also followed when the supervisory role of a supervisor is terminated or the composition of the supervisory team is proposed to change.

The ius promovendi is required to perform the task as (first or second) supervisor. This expires five years after retirement or end of employment (VU Doctorate Regulations, article 9). The GSSS tests whether the proposed (first or second) supervisor has the ius promovendi at the start of the project until the intended date of completion (increased by one year because of the time between approval and defense). The period may be further adapted, for example, because a candidate with an employment contract has the right to stretch the project from four to five years (limiting the appointment to 0.8 FTE), and sometimes for some other reason. This arrangement should help prevent the promoter appointed at the start of the project from being unable to promote the candidate. However, there is no problem if another (first or second) supervisor is appointed at the start who can take over the responsibility if the promoter has lost her or his ius promovendi note at the start (the promoter who loses the ius promovendi note then becomes a copromotor). A promoter who starts a project that will be completed after retirement or after the end of the employment, commits without further provisions for the full term to the necessary effort to make the project successful.

Annex 1. Leiden Golden Rules for PhD Supervision[7]

	Supervisor	PhD Candidate
A. Be professional	*Be aware that all PhD candidates are different, with their own individual story, culture, competences and needs.* Being a supervisor is a demanding job. There is no template for supervision. Keep an open mind and adapt to the PhD candidate. Co-supervision can be difficult. Ensure that you come to a joint view on the process so that the PhD candidate is not left in a quandary.	*Be aware that all supervisors are unique human beings with their strengths and weaknesses.* You will need to adjust to certain ways of behaving and, if something bothers you, address it.
B. Be committed	*Be aware that doing a PhD is a lengthy process that requires long-term commitment from both sides.* PhD candidates need to feel that you care about the project's progress and outcome. Even if the project is meant to develop the candidate's competences, you are also involved in this journey, and your input on the project, topic or execution is essential. Take responsibility for the project. Be up to date and collect material with which you can give your PhD candidate valuable scientific input.	*Be aware that the PhD journey will be lengthy and not always easy, and that your initial motivation can be hard to maintain.* If things are tough, don't despair. Carry on and talk to your colleagues or supervisors. It is a stage most PhD candidates go through.
C. Be available	*Be aware that your regular availability is key to the success of the project.* As part of your responsibility as a supervisor, you are to take initiative in planning regular supervision meetings. You are also expected to, in general, be sufficiently available to the PhD candidate in a way that is mutually beneficial, as well as professional. You should consider that, due to personal circumstances, individual PhD candidates may have different needs / restrictions, e.g., in terms of meeting hours.	*Be aware that the success of your project is a joint responsibility.* Be aware that it is your PhD project and it is also your responsibility to arrange meetings with your supervisor. Be well prepared when meeting with your supervisor and ensure that your supervisor can be prepared, too. Make sure that you get the time you need from your supervisor while being aware of his/her time constraints.

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[7] www.universiteitleiden.nl/binaries/content/assets/ul2staff/onderzoek/promoveren/golden-rules-phd-supervision, July 9, 2019

	Supervisor	PhD Candidate
D. Be consistent and clear	*Be aware that the (perception of) research progress should be addressed. It is crucial to be open about your expectations from each other.* Doing research is, by definition, charting unknown territory. Thus, it is unavoidable that the research evolves, including the supervisor's view of what the next step(s) should be. Be honest about this and show ownership of your changing views. Remember what you say and advise.	*Be aware that being honest about your progress and your expectations is key to the success of your project.* Use wisdom and tact to address possible issues. Be clear and honest about your research progress and struggles. For instance, prepare the meeting with your supervisor by sending him/her a list of discussion points beforehand. Use the meeting with your supervisor to clarify your research problems. Make notes of the discussion and what next steps to take.
E. Be time aware	*Be aware that realistic planning is essential for a PhD candidate.* Obviously, the plan as initially foreseen, will change during the course of the project. Be prepared for a change by thinking about a plan B when the original plan needs revision. Set short term goals and celebrate the successes with the PhD candidate. Make certain that the PhD candidate knows what, in terms of thesis content, is sufficient to graduate.	*Be aware that planning is one of the harder things to do in research and that the original plan is almost certainly going to change.* Keep track of the time you spend on a particular issue. On a regular basis, discuss this with your supervisor and what next steps to take. Discuss short term goals with your supervisor and celebrate your success together.
F. Be willing to receive feedback	*Be aware that for any professional relationship to work, feedback must be a two-way exchange.* You should expect feedback from the PhD candidate just as the latter expects it from you. Be open to the feedback you receive and take it seriously. If no feedback is given, ask for it. You are encouraged to do so a couple of times a year, but in any case, during the yearly progress interview with the PhD candidate. Remember that your reaction on the feedback will have an impact on the openness of your discussions with the PhD candidate.	*Be aware that receiving feedback is very helpful for your progress.* Keep in mind that feedback is meant to help you and is not targeted against you as a person. Feedback is needed to advance your project. If it is not forthcoming, ask for it and use the feedback to your best advantage. Don't be afraid to ask for feedback in an early stage, this prevents you and your supervisor from going in separate directions. If you experience the feedback as unhelpful, reflect on it for a while (with others) and discuss it with your supervisor in a professional and inoffensive way. When your supervisor has helped you or has been complimentary, show your appreciation.

	Supervisor	PhD Candidate
G. Be willing to give feedback	*Be aware that a PhD candidate needs regular feedback that must be professional, objective, constructive, and balanced.* Feedback may have a large (emotional) impact on the PhD candidate, thus you should be cautious in choosing where and when to give feedback, especially when the feedback is person-oriented and would not benefit others. You should be aware of the cultural, ethnic, gender (et cetera) variation in the research group and should employ language that is inclusive and not hurtful to people with different backgrounds and traditions. Positive feedback is as important as critical comments.	*Be aware that feedback on supervision can always be helpful.* Supervising a PhD candidate is a hard job. You can help your supervisors by giving open feedback about their supervision, always with respect and consideration.
H. Be aware of stressors	*Be aware that as a supervisor you are a role model for the PhD candidate, and should set a good example in terms of stress management.* Be aware that your (potentially unhealthy) work attitudes are easily seen as a professional standard. Stimulate the PhD candidates to take breaks. Be aware that the PhD candidate's personal life story can affect their work.	*Be aware that your life involves more than your work.* Manage your stress level and respect your boundaries. Also talk to your colleagues and peers about their struggles with doing research, sharing the same experience helps to manage the difficulties of life as a PhD candidate. Maintain the communication with your supervisor and remember that your supervisor has followed the same path before you and can also help you to put things in perspective.

At UMCG, senior researchers and PhD candidates agreed on commandments of good supervision. There is no particular order.

1. A supervisor should be enthusiastic about the project, and able and willing to be actively involved in it. Supervision is part of management: any good manager should be able to motivate an employee, also in difficult times.

2. A supervisor's knowledge, experience and network should be shared with the candidate in order to advance the project. No amount of literature study or hard work can replace this. It will help the candidate build a personal network and experience base, which is an important part of becoming an independent researcher.

3. Regular and – when necessary – emergency meetings with the candidate are required. Urgent requests from candidates should be handled as soon as possible: sometimes it is better to talk for 15 minutes right away then to postpone a meeting for a week to be able to talk for an hour. However, meetings should also be scheduled well ahead of time to ensure the undivided attention of the supervisor.

4. Manuscripts, abstracts and other texts should be reviewed within a reasonable period of time. Manuscripts should preferably be corrected within a couple of days. This does not mean that a candidate can ignore a supervisor's agenda!

5. A supervisor should guarantee the availability of money, facilities and supporting staff needed to finish the project. These matters can hardly ever be directly influenced by the candidate, but will seriously affect progress and success when unavailable.

6. Supervisor and candidate should keep track of the progress of the research project and, where possible, the supervisor should prevent erroneous planning by the candidate. The project should be finished within the time of the candidates' appointment or stipend.

7. A supervisor should actively recommend courses and conferences for the candidate to attend.

8. Supervision should balance between independence and guidance for each candidate.

9. A supervisor should provide feedback about work and progress of the PhD candidate, both positive and negative. As for any training program: pay a compliment whenever called for, but also discuss problems as soon as they arise. Problems should be faced head on. No one profits when a problem is not brought out into the open.

10. Effective supervision prospers in an environment in which discussing and asking questions is easy. A supervisor should listen and be prepared to admit to be wrong when the candidate is right.

11. Supervision must be personalized. Personality plays a role in supervision. If it doesn't "click" between the supervisor and candidate, mediation may be necessary. Also what works for one candidate, may not work for the other. Both supervisor and candidate should signal problems or suggest improvements. A supervisor should not compare his/her own graduate career with that of candidates. Ambitions and goals differ, as do other claims on time such as family.

12. Supervision should aim at letting the candidate develop into an independent scientist. A supervisor should realize that, in accepting a PhD candidate, responsibility is taken for an important phase in the career of a person, and not only for progress in research. A candidate is not a research assistant nor a secretary: a PhD candidate is a researcher in training. A supervisor should be able to step away from personal interests in the research project and make sure that this higher goal is served. In due time the candidate should become a specialist in his own field and should therefore be allowed some freedom to develop the project according to personal insights. A candidate has to defend his/her own thesis in the end.

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[8] https://www.rug.nl/research/behavioural-cognitive-neurosciences/education/phd/supervising-phd-students_-the-10_-commandments?lang=en, April 30, 2018

At least once a year the PhD supervisor has an annual consultation ('jaargesprek') about performance, talent and development.[9] In the 'reflective report' it is discussed how the supervisor has contributed to her or his PhD candidates' success. Furthermore, to inform the supervisor of the PhD supervisor the latter provides:

- A list of candidates active in recent five years (including name, date of start, date of submission of 'Go / No Go' form and product; originally intended date of completion of the draft thesis; VSNU type of candidate; names of other supervisors);[10] and
- Reports of the Annual Progress Review by supervisor and candidate.

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[9] https://vu.nl/nl/medewerker/jaargesprek
[10] GSSS has created a sheet with this information, which is sent to supervisors approximately twice a year

Annex 4. Calculation of time for supervision and proposed allocation between two supervisors

The calculation below can be helpful in allocating tasks among supervisors and in determining a supervisor's workload. It is a proposal based on an estimate of duration of task performance in fairly broad categories of activities. It thus describes a norm, in which a supervisor sometimes spends much more time than the norm in supervising a candidate, and sometimes spends less time, for example, because the candidate walks a pre-described path, produces very good work very quickly, and works in relatively high independence.

Some comments on the calculation:

- This is a standard that may be deviated from if it benefits the project and the candidate. The division between the two supervisors can also be arranged differently, as long as the standards are maintained. Supervision by three supervisors leads to an increase in the total time required, but not to a reduction in the time invested by the first and second supervisor.
- We assume that there are two types of preparation of a meeting. In the light version, for example, the outline of a chapter is discussed, based on a short note (maximum two A4) from the candidate. A supervisor needs about an hour of preparation to read this piece and formulate her or his suggestions and comments. In the heavy version, close reading is done on a reasonably large text, such as at the beginning on the full draft text of the chapter introduction and at a later stage on the full text of the chapter. This takes about 2.5 hours. For each preparation, the assumption is that on top of this 20% time is spent downloading and saving the files supplied by the candidate, and returning the annotated files.
- Two activities related to PhD supervision are not included in this calculation. Keeping abreast of scientific content and methodological literature in the research domain is considered part of supervisor's regular research task. Being trained in supervision and intervision with colleagues is part of the training and development of employees (Article 6.10, CAO Dutch Universities 2020).
- The nature of activities in PhD projects and the capabilities of candidates can vary greatly, and with it the amount of time a supervisor should devote to a particular supervisory activity. For example, it matters whether the data used are well known to the supervisors, which requires relatively little time, versus whether an extensive data collection is planned and conducted in an area with which the supervisors do not have much experience, which requires a great deal of time.

Supervision norms model: Example calculation of time spent on supervision (minimum requirements)

Supervision activities	Time needed for activity			Allocation supervisors	
	Contact hours	Preparation number	Preparation hours	# 1 hours	# 2 hours
Years 0 and 1					
Application or recruitment	5		7	12	12
Admission procedure, budget, training plan			3	3	
Training plan [a]	1		1	1	1
Regular contact	30			15	30
Arrange GNG [b]			3	3	3
GNG product, five versions light + five intensive		10	21	11	21
Annual interview; annual report	1		1	2	2
Total year 1	37			46	69
Year 2-3					
Guidance on fieldwork, data acquisition	5		15	5	20
Regular contact	40			20	40
Three chapters, four versions light + four intensive		24	50	25	50
Three conference presentations	3		9	6	12
Annual interview; annual report	4		2	6	6
Total year 2	29			34	74
Total year 3	24			29	54
Year 4					
Regular contact	20			10	20
Two chapters, four versions light + four intensive		16	34	17	34
Composition Doctorate Board, related tasks			6	6	
Trial promotion (and evaluation)	2			2	2
Defense and promotion	2		4	6	6
Two publications [c]	8		24	32	32
Annual interview; annual report	1		1	2	2
Total year 4	33			74	95
Total hours in four years:	123			183	292
Fte/year/supervisor (1680 working hours/year):				0,1	0,2
Hours per week (40 weeks in a year):				1,1	1,8
Hours per year:				45,8	73,0
Salary per year (super gross, no overhead, k€):				140	100
Total costs supervision in four years (k€):				15,3	17,4

Note. If there three supervisors, the third adds to it, and does not replace one or both of the other supervisors; thus, the total time to be spent is higher than indicated because supervisors meet regularly and meet jointly with the candidate.

[a] Including discussion with GSSS program manager

[b] Find reviewers; contact GSSS; reading materials

[c] Not required; additional on top of writing chapters; Includes time to revise and resubmit