

1 So you want to do a PhD?

You can't imagine, even from what you have read and what I've told you, the things I shall have to see and do. It's fiendish work, Carter, and I doubt if any man without ironclad sensibilities could ever see it through and come up alive and sane.

There are two classic ways of doing a PhD. One involves knowing just what you are doing; you will then go through a clearly defined path, suffer occasional fits of gloom and despair, emerge with a PhD, unless you do something remarkably silly or give up, and then proceed smoothly with the next stage of your career. The other way is the one followed by most PhD students, which involves stumbling in, wandering round in circles for several years, suffering frequent fits of gloom and despair, and probably but not necessarily emerging with a PhD, followed by wondering what to do next in career terms. This book is written for those who find themselves following the second path.

There are many good books out there for people wanting to do a PhD. If you're thinking of doing a PhD, you should read at least one of them. They give much good advice about what you need to do, and are a good start. We have spent a lot of time helping students who have read those books. The reason that we needed to help them was not because there was anything wrong with the content of the books; the problem was the things that the books didn't cover. One set of things involved the 'big picture' of doing a PhD; the other set involved low-level skills that the books typically didn't cover, probably on the grounds that their writers assumed these skills would be taught either by supervisors or by the training courses which most PhD students now undergo. This book is intended to fill at least some of that gap.

So, returning to your interest in doing a PhD, you will have various questions about the why and the how and the what of it all. Most of these are answered by the usual texts on doing a PhD, and/or by the procedural documentation of your intended institution. However, the answers may not mean very much to you at this stage. The next section therefore describes the outline of what a PhD is about.

The PhD: its nature and content

The books will tell you that the PhD is several things, including a professional qualification, a training in how to do research and an initiation rite. All of these things are true, but what does it all mean?

At a sordidly practical level, the PhD is a qualification which shows that you are good enough at research to be appointable in a university post. If you're thinking of working as an academic in a university, a PhD is highly advisable. It is also helpful if you want a career as a researcher in industry. A further practical point is that PhDs are recognized around the world, and tend to have pretty good quality control, so a PhD from one country will be recognized in another without too much snobbery. Still at the practical level, if you have a PhD, you usually go onto a higher pay scale.

At a professional level, a PhD involves you doing a decent sized chunk of research, writing it up and then discussing it with professional academics. This demonstrates your ability to do proper research without someone holding your hand. You have a supervisor to help and advise you, but in theory at least the PhD is something where you take the initiative.

A closely related issue is the PhD as initiation rite, where you undergo an ordeal and, if you come through the ordeal in a creditable manner, are admitted to membership of the academic clan. Continuing the analogy, having a PhD will not be enough to make you a clan elder, but it will mark the transition to full adulthood. You are treated differently if you have a PhD – there is a distinct feeling of having become 'one of us'. It's not just a snobbery thing; you will gradually start to notice a different way of thinking about things, especially when you start making administrative decisions in your subsequent career. A good example of this in many departments is undergraduate student projects, where staff with PhDs typically want to use the projects as a way of teaching the students how to conduct research, and staff without PhDs typically want to use the projects as a chance to give the students an industrial placement. The PhDs' view is that the students need to learn critical thinking as a valuable skill for later life; the other view is that this is unrealistic nonsense, and that we need to equip the students to find a job as soon as possible after graduation. Which is right? This is a good question,

and one which would take us off on a lengthy diversion. The main point is that doing a PhD *does* change you.

So, that's the standard picture. What does it all mean? That's another good question. Here is how that picture unfolds.

Important section: the standard picture

Firstly, you choose a topic to research. You then find someone willing to be your supervisor. You get yourself through the procedures to sign up for a PhD at your supervisor's institution. You then research that topic for a year or two, at which point you are assessed to see whether you are doing well enough to continue to the end of the PhD. If that goes well, then you do another year or two of research. In the third or fourth year of the PhD, you write a large document (typically around 300 pages) about your research. This is read by a panel of experts who then ask you questions about it to check that your understanding of the topic is good enough. They will typically conclude that you need to make some changes to it. If you make these changes to their satisfaction within a specified period, then you will be awarded a PhD.

The realities behind the standard picture

That's the standard picture. It's pretty much true. There are, however, numerous things to note about it. One is the frequent use of words such as 'typically' in this book; an important thing to grasp about the academic world is that institutions, disciplines and departments vary widely in their norms and conventions. There are good reasons for this, but it doesn't make life any easier for would-be students, or for people trying to write books explaining academic life to would-be students. Another thing is the number of points at which you can fail; PhDs are academically rigorous. Another is the sheer size of the document you produce: the written PhD thesis. A lot of students have trouble coping with the prospect of writing something that big. (Writing it is not really that much of a problem once you know what you're doing, but that doesn't feel much of a consolation at this stage.)

There are also various things which are not elaborated in this picture. One thing which is seldom mentioned is what happens to you after you finish the PhD. A classic story is as follows. A student focuses clearly, submits the thesis and starts looking for a lecturing job, only to discover that they need two years of lecturing experience and preferably a journal publication as well if they

are to be appointable for a job in a good department in their field. If they had known this two years previously, they could have started doing some part-time lecturing and submitted a paper or two to a journal. There are other things which look simple until you stop and think about them. For instance, how do you choose a topic, and how do you find a good supervisor? The standard books give quite a lot of good advice about this, but there will still be quite a lot of things that you aren't sure about.

So, what do you do about this? One good step is to read the rest of this book at this point. A lot of it won't have much real meaning to you yet, but that doesn't matter. The main thing is that it should give you a fair idea about which things matter, which things are well understood and which things are comparatively peripheral. For instance, we have a lot to say about academic writing as opposed to formal English (because most students are pretty bad at it) and about feeling lost (because most students have problems with this from the second year of their thesis onwards). Similarly, we don't say much about statistics and about experimental design, because these are comprehensively covered by numerous excellent texts and training courses, so you should have no problems getting access to them if they're needed for your research. Likewise, we don't say much about whether the Harvard referencing system is better than (for instance) the APA system, because your departmental PhD regulations will almost certainly specify the referencing system that you must use, so that question is pretty much an irrelevance unless you happen to be doing a PhD on referencing systems, within an information science department.

The next sections describe some concepts which we have found invaluable, but which don't usually appear in other books. These provide a useful structure for (a) what you are trying to do in a PhD and (b) understanding how things work in the big picture. The first of these is the cabinet-making metaphor; the second is the distinction between instrumental and expressive behaviour.

Cabinet-making - the PhD as a master piece

Doing a PhD has a lot in common with traditional cabinet-making. Back in The Past, an apprentice cabinet-maker would finish his apprenticeship (back in The Past, apprentice cabinet-makers were all 'he') by making a cabinet which demonstrated that he had all the skills needed to be a master cabinet-maker. This piece of furniture was known as the 'master piece'. A successfully defended PhD dissertation fulfils a similar role. It demonstrates that you have all the skills needed to be a researcher in your own right. The issue of *demonstration* is essential. The basis of the PhD examination is the dissertation, together with the subsequent *viva voce* examination. It doesn't matter how

brilliant or well-informed you are – if the brilliance and erudition isn't visible in the dissertation, then you're going to fail.

You therefore need to know what the requisite skills are for your branch of academia (since different disciplines require different skills) and make sure that you demonstrate mastery of each of these somewhere in your thesis. If you're a methodical sort of person, you might go so far as to draw up a list of the skills required and tick off each one as it is represented in your thesis. For a cabinet-maker, the skills required would be things like making various complex joints, fitting hinges neatly, applying veneer, achieving a high polish and so forth. For an academic, the skills are things like mastery of formal academic language, familiarity with the relevant literature in the discipline, knowledge of the main data collection techniques, adherence to the standards of rigour and so on.

Things which do not normally appear on the list include personal interest in the area and the ethical importance of the topic. There is no point in going on about these at length in your thesis – you are awarded a PhD as an acknowledgement that you can make cabinets at master craftsman level, not an acknowledgement that you find cabinet-making fascinating, or that cabinets make the world a better place. In practice, few people would spend several years of their life doing a PhD on a topic which held no interest for them, so personal interest is usually taken for granted by examiners. Ethics is a more interesting question. One reason that examiners tend not to take account of claims about the ethical importance of a question (e.g. finding a cure for cancer) as a criterion for assessing a PhD is that bad research can actually impede the search for an answer to the problem by leading other researchers in the wrong direction. Bad research into a highly ethical question is still bad research. Back to the main theme.

Different disciplines have different required skills; most experienced researchers are so familiar with these that they take them for granted, and would be hard pressed to produce a list from memory over a physical or metaphorical cup of coffee. However, other experienced researchers (especially those who teach research methods courses) will be able to give you some answers; in addition, it is worth having a look at the contents section of research methods books in your discipline, which will cover most of the main topics. The PhD regulations for your institution should also help.

An illustrative list of typical skills is given below. It's illustrative rather than definitive – your discipline will almost certainly have a different list. However, many of the skills will be the same, and the list will give you the general idea.

Most of the skills below assume that your work will be located within a single discipline. There is a reason for this. Interdisciplinary PhDs can be extremely interesting and useful. However, they need to be handled with care, since otherwise there is the risk that they will fall between two stools. This can be a problem in terms of practicalia such as finding an external examiner, and in terms of theoretical issues such as deciding which approach to follow

when the different disciplines involved have very different ways of doing things. It is usually much wiser to decide on a 'host' discipline, locate the interdisciplinary PhD within that, and then import the concepts from the other discipline into the host discipline.

Cabinet-making skills

Most disciplines require most of the following skills, though individual cases will vary.

Use of academic language

- Correct use of technical terms
- Attention to detail in punctuation, grammar, etc.
- Attention to use of typographic design (white space, layout, headings styles) to make the text accessible
- Ability to structure and convey a clear and coherent argument, including attention to the use of 'signposting' devices such as headings to make the structure accessible
- Writing in a suitable academic 'voice'

Knowledge of background literature

- Seminal texts correctly cited, with evidence that you have read them and evaluated them critically
- References accurately reflecting the growth of the literature from the seminal texts to the present day
- Identification of key recent texts on which your own PhD is based, showing both how these contribute to your thesis and how your thesis is different from them
- Relevant texts and concepts from other disciplines cited
- Organization of all of the cited literature into a coherent, critical structure, showing both that you can make sense of the literature – identifying conceptual relationships and themes, recognizing gaps – and that you understand what is important

Research methods

- Knowledge of the main research methods used in your discipline, including data collection, record-keeping and data analysis
- Knowledge of what constitutes 'evidence' in your discipline, and of what is acceptable as a knowledge claim

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- Detailed knowledge – and competent application – of at least one method
 - Critical analysis of one of the standard methods in your discipline, showing that you understand both its strengths and its limitations

Theory

- Understanding of key theoretical strands and theoretical concepts in your discipline
- Understanding how theory shapes your research question
- Ability to contribute something useful to the theoretical debate in your area

Miscellaneous

- Ability to do all the above yourself, rather than simply doing what your supervisor tells you
- Awareness of where your work fits in relation to the discipline, and what it contributes to the discipline
- Mature overview of the discipline

Necessary skills

Those readers who are familiar with *1066 and All That* will be pleased to know that skills are currently viewed as a Good Thing. This is especially the case with skills which can be described as ‘transferable skills’. You can therefore treat them as a positive asset, to be added to your CV, rather than as another cheerless obligation. Your institutional training course will probably wax eloquent on skills of various sorts – transferable, generic, project-based, discipline-based (though readers with an interest in BDSM may be disappointed to hear that this does not normally involve whips and leather), and doubtless many others. Transferable skills are particularly favoured by The System because they are allegedly usable in areas other than just academia. They include (depending on whose versions you receive) writing, public speaking and coping with prejudice.

We will pay The System the graceful academic compliment of treating this ground as so thoroughly covered that it does not need to be covered again by us; the rest of this section describes skills which may not be included on your institution’s training programme.

Tact and diplomacy

As a PhD student, you need to accept that you are not exactly at the top of the academic pecking order; as a new PhD student, you are also the new

kid on the block. There is therefore a time for being right and a time for using the quiet word that gets you what you want. PhD students tend to do a lot of complaining about how The System treats them (often with some justice on their side), but tend to forget that they are in a system which dates back to the Dark Ages, and which has learnt a thing or two about dealing with complaints. An important skill is to learn when to let something pass and when to stand up (tactfully and politely, but firmly) for an issue. Otherwise, you are likely to find yourself winning the battles and losing the war. For instance, you will probably have complaints about the shortcomings of the library; PhD students almost everywhere have complaints about the library, usually ill-founded, so if you get stroppy about this issue, you are unlikely to get a huge amount of sympathy. ('The library doesn't have many books on my area of interest' usually translates into: 'I haven't learnt yet that I should be reading journal articles at this stage' – not the strongest position for winning an argument.) A second example: you may have grave reservations about the quality of the research methods training course that your institution puts on for PhD students. Bear in mind that PhD training courses are still in their early days, and that a tactless confrontation with the professor responsible for the course is unlikely to produce the result that you need; some suggestions, phrased in a face-saving manner, are more likely to achieve this. Remember also that most PhD students know what they *want*, not what they *need*; there is sometimes an enormous difference between the two. This leads on to another important skill.

Having the right cup of coffee

Probably the most important research tool you will encounter is the cup of coffee. Successful students know this; unsuccessful ones tend to wonder why we're wasting time with jokes, and then wonder why the world is so unfair to them. Knowledge is power; rare knowledge is greater power. The best way of finding out what you really need to know is usually to have a cup of coffee with the right person, and to ask their advice (tactfully and diplomatically). Who is the right person? Someone with the knowledge, which for most situations means someone who is not another PhD student – if they're still a student, then no matter how helpful and friendly they are, you can't be sure whether their advice is sincere and right, or sincere and mistaken, since they haven't yet got successfully through a PhD. There are a lot of folk myths in circulation among PhD students. Fellow students are a good source of social support, and of help with tasks like blind judging for data analysis, or with babysitting; they're not a good source of advice about what your thesis should look like, or where to find the equipment you need for your next bit of fieldwork. The right person is someone who has a successful track record in the relevant topic – for instance, supervisors whose students usually have happy endings, chief technicians with a reputation for producing the right bit of kit out of a cupboard when all hope seemed gone, librarians who have

helped your friends to find obscure but essential references. Show them due appreciation and treat their advice as confidential unless they specify otherwise. The most useful knowledge is often the sort that people will not want to be quoted on – for instance, hints about good or bad people to ask for help.

Asking the right research question

Once you learn this skill, life becomes very different. We have an entire section on this elsewhere because it's so important; we mention it here because it's well worth mentioning twice.

Academic writing

Writing is indeed a transferable skill; you can transfer academic writing skills from one academic setting to another, and you can transfer business writing skills from one business setting to another. It is quite possible that there are areas where you can even transfer academic writing skills appropriately to industry or vice versa.

Table 1 Ten top tips for research students

Read, read, read	Seasoned researchers typically have an evolving 'reference set' of around 100–50 papers which forms the core of the relevant literature in their specialty, and with which they are conversant. Students need to read enough to form an initial reference set.
Write, write, write	<ul style="list-style-type: none"> • Writing is a skill that requires practice: the more you write, the easier it gets • You should aim to write up as you go; this will both make it easier at the end (when you rewrite it all) and give you something to show people who are interested in your work • Don't throw writing away; date it and store it in an 'out-takes' file; that material can be useful • Revising is often easier than writing new
Keep an annotated bibliography	This is the single most powerful research tool you can give yourself. It should be a personal tool, including all the usual bibliographic information, the date when you read the paper and notes on what <i>you</i> found interesting/seminal/infuriating/etc. about it.
Form an 'informal committee'	Try to find a small set of reliable, interested people who are willing to read for you, comment on ideas, bring literature to your attention, introduce you to other researchers and so on. They may be specialists who can provide expertise on which you can draw, or generalists who ask tough questions.

Expose your work	Make your work public in technical reports, research seminars and conference papers. The best way to get information is to share information; if people understand what your ideas are, they can respond to them. Making your work public exposes you to questions and criticism early (when it can do you some good), helps you to 'network' and gather leads and gives you practice articulating your reasoning.
So what? Learn to ask the other questions	Students often get a result and forget to take the next step. 'Look, I got a correlation!' 'So what?' Learn to go beyond your initial question, learn to invert the question in order to expose other perspectives and learn to look for alternative explanations.
Never hide from your supervisor	'Hiding' is a pathological behaviour in which most research students indulge at some point. Communicating with your supervisor is a prerequisite to getting the most out of your supervisor.
Always make backups (and keep a set off-site)	More than one student has had to start writing from scratch or to repeat empirical work because he or she neglected this most basic of disciplines.
Read at least one completed dissertation cover to cover	Reading something that has 'passed' is an excellent way to reflect on dissertation structure, content, and style – and on 'what it takes'.
A doctorate is pass/fail	Part of the process is learning when 'enough is enough'.

Terminology: a brief digression

There are various types of research degree; what they have in common is that they involve research by the student as a core component. This is different from a taught degree where there may be a research project (for instance, an MSc project), but where this research project is only one component among many on the course.

Strictly speaking, a research degree involves a thesis, which is the argument that you propose as a result of your research. Again strictly speaking, the dissertation is the written document which describes your thesis. In common usage, the dissertation is often referred to as 'the thesis'. It's worth knowing about the distinction in case you have a particularly pedantic external examiner – it helps you get off to a better start.

Instrumental and expressive behaviour

In fairy tales, you sometimes encounter a magic book. This is usually a book which appears once, in time of need, and which contains the information

needed to solve the crisis at the heart of the tale; when the hero or heroine returns afterwards to look for further wisdom, the book has vanished from the place where it was left, never to be seen again. In the tales, finding the book is something which happens once in a lifetime, when you most need it.

Real life isn't quite like that. As we can testify from personal experience, the book can appear more than once in a lifetime, and not always at the immediate point of need. On the first occasion, the book was an anthology of writings about new religious movements, which appeared at the time to be very interesting, but of no immediate relevance to anything that the author was doing. On the second occasion, the book was an extremely good encyclopaedia of psychology, which provided the key information needed for a successful large funding bid. The author neglected to note the full bibliographic reference for either book, and no amount of detailed searching of the relevant libraries (both on the shelves and in the online and printed catalogues) subsequently produced anything quite like those books. These experiences are (a) one of the reasons why we go on at such length about the need for proper bibliographic references for everything you read, and (b) the principal reason for the lack of a proper bibliographic reference for the concepts of instrumental and expressive behaviour which are discussed in this section. If you'd like to track down the original article, it's a chapter describing the de Leonist political movement in the United States, in an edited anthology of writings about new religious movements, which was in the University of Nottingham library sometime between 1986 and 1992 and, yes, we would be very grateful for the full reference if anyone happens to encounter the book somewhere on its travels . . .

The author of the said chapter was a sociologist who was studying the de Leonists. Some of their behaviour made little sense to him – for instance, they once spent a lot of time putting up posters around the city advertising a talk which had already happened. Eventually he realized that they were engaging in what he called expressive, rather than instrumental, behaviour. Instrumental behaviour consists of actions leading towards a stated goal; for instance, the goal of learning to drive a car might involve the instrumental behaviours of booking driving lessons, buying a copy of the *Highway Code* etc. Measured against this criterion, the de Leonists' behaviour appeared senseless. Expressive behaviour, on the other hand, consists of actions demonstrating to other people what sort of person you are; for instance, sitting in the front of a lecture theatre and taking copious notes in a very visible manner to show that you take your studies very seriously. Against this criterion, the de Leonists' behaviour made a lot more sense; much of it was intended to demonstrate group loyalty, and was intended for other members of the group to see. Sticking up large numbers of posters publicizing an event which had already happened could therefore be a good way of demonstrating that you were a committed member of the group and, in consequence, of increasing your standing within the group.

Instrumental behaviour and expressive behaviour are both important. In our experience, students are normally good at some types of instrumental behaviour and woefully bad at the sensible sorts of expressive behaviour, usually because nobody has explained to them which signals they need to send out.

An example of this is the use of bibliographic referencing. At an instrumental level this is important, because inadequate referencing can lead to your being unable to relocate a key text which you read earlier; it is also important for other people who might want to follow up one of your points, or to check one of your assertions (external examiners for PhDs, for instance, often want to do this . . .) At an expressive level, good referencing is also important: it sends out signals saying that you take core academic values seriously, that you are familiar with the core craft skills, that you are thorough and professional, and so forth.

More often, however, students engage in expressive behaviours which send out signals such as 'look how hard I'm trying' – for instance, spending all day every day in the library, regardless of whether what they are reading is particularly useful or not. The usual sequence of events is that the supervisor sooner or later notices that the student is not making any progress, and points this out; the student reacts by even more expressive behaviour sending out the same signal; the supervisor notices continuing lack of progress; and so on, until an ending occurs which is usually unhappy. What students in this situation need to realize is that the problem is not how hard they are trying, but what they are omitting to do. One large part of this book is about the instrumental skills which are needed to do a good PhD, and another large part is about the signals of skilled professionalism which you need to send out via the right sort of expressive behaviour. (There is also yet another large part which is about identifying the wrong sorts of expressive behaviour, and about what to do to rectify them.)