

Blog entry by Massimo Boninsegni currently at <http://expbook.wordpress.com/>

Dear former graduate student,

It was great to hear from you. You were in such a hurry to leave, after defending your PhD dissertation, that I hardly had even the time to take you to dinner to celebrate. I sort of understand, though. I myself, after finishing my doctorate, was eager to move on to the next stage, which, just like it is for you, was a postdoctoral appointment.

I am pleased to learn that you are getting adjusted to your new place, that you have found an apartment, that you had a productive first meeting with your postdoctoral advisor (PA), have met your fellow postdocs and most of the graduate students, and that you are ready to start new and exciting research. And of course, the fact that you are making a great deal more money is a welcome development as well.

From your letter, I gather that you are excited but also worried about what lies ahead. I know, the first impact is intimidating; even though it is over fifteen years ago, I remember vividly what it felt like. Much like you, I went from the quiet and nurturing atmosphere of a second-tier university, to the competitive and humbling environment of a prominent research institution. The "group" went overnight from consisting of a PhD advisor and three graduate students, to including fifteen or more people of different seniority (graduate students, postdocs, faculty, visiting professors). All of a sudden, it felt as if everyone around was smarter, had published more, done better work and knew more than me. Well, you better get used to that; that feeling never goes away, as long as one is ~~in research~~ alive.

And you know what ? It's probably a good thing. It keeps us on our toes, and makes us want to learn more. Complacency and self-assuredness do not a good scientist make, despite what the prevalent attitude in our field may suggest.

I was struck by some of your questions: "What exactly is a postdoc supposed to do ?", "Should I work on my own projects, or simply do what my PA tells me to do ?", "How will I know that things are going well for me ?" ... You're right, I guess we never really did have a conversation about all of this, in the commotion of the past six months, when all that mattered was wrapping up your work and finishing your dissertation.

It is temporary

You know how you told me recently that, even though you have spent five years here, you feel as though you barely know the city and its surroundings, which you have hardly explored, as you have always been focused like a laser beam on your graduate studies and research ? This remains true at the postdoctoral level; even more so, in fact. Now more than ever, you need to stay *focused*.

OK, now, don't get me wrong. You know me. We have talked about this before, many times. I

am **not** telling you not to have a life, not to take time off, not to have fun like every normal person (especially at your age). I am simply telling you: *your postdoc is a **starting point**, **not** one of arrival.* And yes, *you still have to prove yourself.*

I know, it is unfair. You feel as though, with the completion of your doctorate, you have put a major undertaking behind you, and richly deserve to take a "mental holiday" from worrying about your future. But, see, the future is right around the corner. Let me give you an idea of your time table:

Twelve months from now you will, in all likelihood, be sending out applications; for a second postdoc, for tenure-track faculty positions, for industry jobs. It is important that your CV feature, at that time, something more than it does now (even though it looks pretty good now). One major piece of work, a significant research accomplishment resulting from your postdoctoral work will convey a clear sense of intellectual growth, and justify an enthusiastic letter of support from your PA (without any new result, not even the most glowing recommendation will be taken seriously). It is also important that that research undertaking *not* be seen as a mere spinoff of your doctoral work; it has to be something *new* for you, where you can demonstrate your ability to switch to a new subject, and keep doing good work independently, without anyone holding your hand. By now you know how long it takes to get started on a new project, and carry it to fruition. You do the math...

Yes, I *know*, your postdoc seems like a great position, one in which you could happily settle for the next umpteen years, if it only were possible. Alas, it is **not possible**. It is a (*short*) **term** appointment. Before you even know it, you'll be off to a new position. You should **not** take your postdoc as a nine-to-five job. It is an opportunity for you to build the best research credentials you can. It is up to **you** to make the most of it. Remember, having landed a postdoc *does not* mean that a permanent job (of *any* kind) is waiting for you down the road. Unfortunately, things do not work that way. There is absolutely **no** guarantee; the academic and industrial job markets are *extremely* competitive.

Publish or perish ?

Many are telling you that it's all about publishing. There is some truth to that, in that low productivity is usually looked upon unfavorably. No publication after 12-15 months in your postdoc, not even a preprint, is not a good thing. You should make sure that that does not happen.

However, above a minimum threshold below which a researcher is regarded as "unproductive", *quality* will trump *quantity* any day. Engaging in the frantic production of scarcely relevant papers is *not* the way to build an impressive research portfolio. Pick *few* projects instead, of higher risk but also of potentially broad impact, and with an ensuing greater reward for you if successful.

How do you balance risk with the need of ensuring a minimal level of productivity ? One way is to set aside some time (something like a quarter or so) to work on a project that is relatively "safe". This may well be related to your doctoral work; perhaps it could be that calculation about which we talked, but which you did not have the time to complete before graduating. How about you do it on your own, now... You are more than capable, and this should give you at least one publication, in case nothing else works out. But you don't need more than one such "backup

project".

How do I pick my "main" project ?

In general, it is a good idea if your main research project is chosen in agreement with your PA. Ideally it will be something in which (s)he has a big stake and a lot of interest. The reason is that, if (s)he is excited about it, (s)he will be promoting your work (and yourself) to the greater community, speaking at conferences or in seminars [0].

However, you should be selective, and exercise good judgment. Simply accepting a project that is a mere continuation of a line of work that has existed in that research group for a long time, predates you and will continue after you are gone, is probably not in your best interest. I recommend picking something that is *new* for both yourself and your PA, where his/her experience and guidance can prove valuable but where there is also room for you to make your own original contribution.

What is expected of me ?

That you be able to *think and work independently*. You need to develop your own ideas and take charge of your research project(s). A postdoc who is just like a beginning graduate student, needs constant help to make simple experimental or computational decisions, input from the PA to decide "what to do next", is a PA's *worst nightmare*. In fact, not only should you *not* expect (much less wish) your PA to be looking over your shoulder all the time to make sure that you are doing the right thing, there is a pretty good chance that *you* will be expected to supervise the work of the PA's graduate students (after all, graduate student supervision is another thing that you have to learn how to do, during your postdoctoral training). Conversely, a successful postdoc is one about whom the PA will be able to say with confidence "this person is ready to start his/her *own* independent research program". In any case, when you eventually get to give your own seminar (i.e., during a job interview), *it will show* whether you have simply followed orders or whether you are truly the driving force behind the work that you are describing. Also, as a graduate student you have focused on your own specific research project, but as a postdoc it is important that you start the process of developing a broad vision of your field of research as a whole. This is why attending seminars and group meetings remains *very* important.

What is the PA going to do for me ?

Other than paying your salary, you mean ?

A PA *might* teach you some new experimental/computational/what-have-you "tricks", but that is *not* going to be their main contribution, nor what you should expect the most out of them (other postdocs or graduate students will probably teach you more of that stuff -- but mostly you'll learn it on your own). A PA will first and foremost help you identify a research project or area, where you will be able to produce significant new results (thereby *making a name for yourself*), taking advantage of the skills and expertise that you have developed in graduate school.

And, the PA will also be your main advocate to the rest of the community; (s)he will be talking about you to colleagues looking for promising young scientists to hire, mentioning your name

for a speaking slot at some prominent conference, making phone calls, making it possible for you to attend meetings where you may speak to future employers, and in general creating opportunities for you to have some "face time" with people who may be interested in hiring you.

How often should I speak to my PA ?

I think a good rule of thumb is to have an individual meeting, say, once a month. The purpose is to assess the status of the various research projects and discuss (in general terms) what should be done next. There will be other occasions (e.g., in the lab, or at group meetings) where you will be able to ask specific questions. You should not be afraid to seek feedback, nor should you have any hesitation sharing with your PA any concerns that you may have regarding your long term career prospects. Doing so too often is probably useless and counter-productive, but three or four times a year is quite appropriate. A PA ought *not* be reluctant to discuss such an all-important aspect.

At the beginning of the last year of your appointment, there should be an open and frank exchange between you and your PA about your future, namely jobs for which you might apply, and strategies to adopt in order to maximize the likelihood of a positive outcome. *It is the job of the PA to initiate that discussion and take the lead.* A PA acting as though that is not his/her problem, or as if that were not an issue, telling the postdoc "oh, well, I don't know about that, why don't you finish your project first and then we'll talk about this..." is a *bad PA, and bad news* for the postdoc. A contingency plan is more than likely needed, in that situation.

Should I beware of getting too cozy with other postdocs ? After all, they are my competitors...

I have heard that contention myself, many a time. I really do not know from where it originates, but it is one the worst pieces of nonsense that circulate in our environment. Your fellow postdocs are a *tremendous* resource; you should not be afraid of sharing your knowledge with them, and at the same time you should try to learn from them as much as possible.

It is true that you will likely be competing for the same jobs, but that remains true in *any* case; there are plenty other postdocs everywhere else in the world who will also be competing with you. Actually, the fact that you all share the same aspirations and dreams will often foster *comradeship* among all of you, rather than jealousy. And you need to take a longer term view of it; these are the people who later on, may hire your own students, review your own articles and grant proposals, invite you to give talks and spend sabbatical years. It is in your best interest to make them your friends.

I do not know if academia is what I want, or if it is the right choice for me, in the long run...

Your postdoc is precisely the time to find that out. Give it your best shot, try to do the best work that you can (hopefully having fun at it), and then decide. But make it *your* decision, do not let others talk you into jumping ship too early, before you even have had a chance of finding out

what it is all about, and whether you like it or not. As a postdoc, you are moving a step closer to what your life would be like as an academic (even though being a postdoc is *not* the same as being a full-fledge professor). That will put you in a better position to assess whether it is the right path for you or not.

If at some point you decide that you would rather do something else in life, do not worry: no sane person will ever hold it against you. Not I, not your PA, nobody else that matters. You are not "disappointing" anyone. It's *your* life; you are in charge. Just make sure, *for your own future happiness*, that whatever decision you make, it is for the *right* reasons (namely, *your own*, not someone else's). Whether or not you enjoy research, and the way it is carried out in academia, is perhaps the most important criterion to determine whether it is for you or not. But there are many other legitimate, valid reasons for opting out of academia and research. There is *no shame* in doing that (nor could there possibly be, given that only a minority of postdocs continue on in research and/or academia [1]).

But that does not mean that you should not give your postdoctoral appointment your best shot. Even if you decide that you want to work in industry eventually, or choose another professional path, your postdoctoral time is *never* wasted. Your research training will prove valuable later on, in ways you cannot even imagine now.

Can I still talk to you for advice ?

Of course ! The fact that I have signed off on your dissertation, as well as the fact that, as normal human beings, we have had our differences and gotten on each other's last nerve, more than once over the past few years, does not mean that I want to forget about you. It is important to me that you *succeed* (**by that I mean**, for you get to *wherever it is that you wish to be*, be that in research, academia, or anywhere else). Even from the most selfish point of view, my own reputation as an academic, as well as my future chances of attracting graduate students, rest on how well my previous advisees do [2]. "Doing well" means, to be happy.

I shall always take pride in supervised students who are happy with what and where they are, especially if they keep in touch and have fond memories of the time spent working with me, deeming it meaningful and rewarding *regardless* of where life has eventually taken them. So, it is in my best interest to keep in touch with you and help you, to the extent that I can. Please keep that always in mind.

Best of luck,

Massimo

Notes

[0] The reason why your PA is invited to give talks instead of you, is that (s)he is better known, because (s)he has been around longer than you have. Resenting the fact that your PA is presenting your work in your place is silly, and misses the point. You are **never** going to be in competition with your PA for the same job. Your PA is the one who can give your work exposure, and more than likely (s)he will do a better job than you presenting it in the appropriate context, if nothing else because (s)he knows the literature more extensively than

you. If your work elicits interest, eventually the community *will* identify you as the reference person and primary investigator.

[1] See, for instance, the [Sigma Xi postdoc survey](#).

[2] I mean this *quite literally*. Most granting agencies in North America evaluate a research proposal also based on the effectiveness of the principal investigator at training Highly Qualified Personnel (HQP); this is typically very broadly defined, to encompass professional outcomes quite removed from academia and research. See [here](#), for instance.