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Managing a Research Group

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You worked hard to get your Ph.D.; you went through a few postdoc positions around the world; and now your life's ambition is fulfilled at last: You get to start or develop your own research group. Are you ready? Sure, you are a seasoned scientist, but how good are you at managing other researchers?

A few months ago, I was asked to address Ph.D. students on the topic of persuasion. To illustrate my points, I chose instances of "persuading your Ph.D. advisor" (for example, to let you attend a specific conference). Little did I anticipate how much my examples would resonate with my attendees: After the session, the line of them waiting to ask me additional questions was much longer than usual, and their questions were really excuses to complain about their advisors. Clearly, they thought they had found a sympathetic ear at last, and they so much needed to pour their heart out; some of them were in tears.

Ph.D. advisors and group leaders in general often seem to be "public enemy number one" for young researchers, and they sure get their share of lighthearted

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criticism in Jorge Cham's *PhD Comics* (www.phdcomics.com). Of course, the perception is biased: We hear or remember the malcontents much more than those who are satisfied with their

authority figures. No doubt group leaders feel misunderstood and have grievances of their own about their grad students and postdocs. Still, they are the ones in charge, and they have nothing to gain from a dysfunctional group.

Admittedly, managing a research group is tricky. Though Ph.D. criteria vary from university to university, the general sense is that Ph.D. candidates must prove their ability to conduct research, if not alone, at least of their own initiative: Ph.D. programs selectively breed individuals who like nothing better than to do things their own way. How do you manage a group of those—especially when you are one of them yourself? No wonder many group leaders gravitate toward the extremes: the absentee advisor, expecting his or

her students to figure out everything on their own, and the micromanager, breathing down their necks.

To make matters worse, group leaders in academia are usually selected for their research achievements, not their leadership abilities, unlike their counterparts in the business world. They may not have any natural talent and are unlikely to have been trained for the job, so they tend to reproduce what their own group leaders have done to them—an observation that holds for university teaching, too: Those who prepare our young ones for a career have never been formally prepared for their own. As a result, bad practices propagate by replication, just like viruses.

Assessing your approach

When you do not have the benefit of training, the first step toward self-improvement is probably self-assessment. If you have been leading a group for a while, systematically question what you are doing and how you are doing it. When in doubt, get feedback from your group members. And if you are just facing the prospect of becoming a group leader, think about how your group leaders have managed you, but do so from your perspective as a group member. What did they do that you found useful? What do you wish they would have done differently? Why?

In your self-assessment, focus on purposes and strategies, not on procedures. Make a list of all you would like to accomplish as a leader of a research group, such as to secure funding, to buy equipment, to attract great people, and to obtain visibility through publications. As always with this kind of exercise, cluster and prioritize the purposes you have thus identified.

Then think of the most effective ways to reach your purposes with the means at your disposal. Surely you are overwhelmed with administrative and other duties already. How can you do the best job with the time you have? Be ready to challenge even the most entrenched practices. For example, do you actually need to hold a group meeting every

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Monday morning? What are you trying to achieve with it? Are there alternative ways to get there?

Striking a balance

When one is managing young researchers, perhaps the biggest challenge is striking a balance between maximizing the group's scientific production, in quantity or quality, and fostering the individual development of group members. If you are too keen on getting a paper accepted, for example, you might be tempted to rewrite large parts of a student's imperfect manuscript. Unfortunately, this student is unlikely to learn much from having his or her work redrafted and will even be frustrated by it. Students will learn more if you can identify what is suboptimal in the manuscript and explain why (ideally in a face-to-face discussion), and then let them attempt the rewriting themselves—but, no, the final paper may not be as you dreamed it.

Striking a balance applies to decision-making, too. If your leadership style is participative, you probably work hard to reach a consensus on decisions, but you may have experienced the process as slow and the decisions as unsatisfactory. In contrast, if you are more of an authoritarian, you likely prefer to decide everything yourself; however, your group members may resent never being involved. A compromise may be

to encourage everyone's input in a group discussion (the diverging phase), and then decide yourself on the basis of this discussion (the converging phase). Whatever you do, make sure that the rules of the game are clear: Lack of clarity about a process is even worse than unpopular (but clear) rules.

Nurturing your group

Managing a group of young researchers, in other words, is not unlike parenting—another job for which very few of us have been prepared. At times, you may have little availability, leaving your children to figure things out on their own. In contrast, when you want something done fast and well (cooking a meal, painting a room, assisting a younger sibling, etc.) and you have firm ideas about how it should be done, you may prefer to do it yourself. After all, you are busy enough as it is and you don't need another mess. Still, to learn and grow, your children need opportunities. They need guidance and supervision—not too much (leave place for discovery and initiative) and not too little (make sure they learn efficiently and safely). As for decisions, you may well know better what is good for them, but you might still listen to them—truly listen—before deciding. Similarly, you may insist that they obey the rules, yet allow them to challenge these rules.

Like parents with their children, like teachers with their students, like consultants with their clients, group leaders should help young researchers along on the path to independence. It may seem harsh, but any form of education should—in a sense—aim at putting us out of the job (at least with those particular individuals; there will be other students, other clients, etc.). If you are managing a research group, are you doing everything you can so that your group members can soon become group leaders of their own? ▲

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