

Networking on the Network: A Guide to Professional Skills for PhD Students

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This is the version of 20 March 2002. Please send me any comments that might improve future versions, particularly if you have tried putting my advice into practice.

56000 words.

"Networking on the Network" includes good advice accumulated from dozens of people over many years, and I want to get it into the hands of every PhD student in the world. If you could help me out with this goal, I would much appreciate it.

An earlier version is available in PDF format here:

<http://dlis.gseis.ucla.edu/people/pagre/network.pdf>

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SECTION 1. Introduction

Several million people employ electronic mail for some significant portion of their professional communications. Yet in my experience few people have figured out how to use the net productively. A great deal of effort is going into technical means for finding information on the net, but hardly anybody has been helping newcomers figure out where the net fits in the larger picture of their own careers. These notes are a first attempt to fill that gap, building on the most successful practices I've observed in my twenty years on the net. I will focus on the use of electronic communication in research communities, but the underlying principles will be applicable to many other communities as well.

Some cautions. Everyone's life is different, cultures and disciplines have their own conventions, and it's all just my opinion anyway. Don't interpret my advice as absolute rules of etiquette or morality, but rather as a resource in figuring out your own personal way of getting around in your particular professional world.

[Section 2](#) introduces the rationale behind professional networking and explains why it is not just "politics". [Section 3](#) provides a simple six-step model of the networking process without reference to electronic media. [Section 4](#) introduces the use of electronic media for building a professional identity, with particular attention to some common mistakes. [Section 5](#) then revisits the six steps of networking and explains how electronic media can (and cannot) assist with them. It also explains how to network when you cannot raise the funds to travel adequately. [Section 6](#) considers several advanced topics: noticing emerging themes in your area, using consultation to organize things, ensuring that you get proper credit for your contributions, learning to engage professionally with people from different disciplinary and cultural backgrounds, and deciding where to publish your work. [Section 7](#) describes the relationship between your professional network and your dissertation. Both of them pertain to the process of knitting yourself and your work into a set of professional relationships. [Section 8](#) reveals the mysteries of academic language. [Section 9](#) explains how to get an academic job, building on the networking you've done and on the concepts that underlie networking. [Section 10](#) assumes that you have established yourself in the research community and introduces the topic of advising others. [Section 11](#) presents a more advanced theory of networking, including the process by which research fields become institutionalized. [Section 12](#) then examines the moral issues that the process can raise. [An appendix](#) provides an annotated bibliography of books and articles on the topic of professional networking.

SECTION 2. Networking: What and Why

The first thing to realize is that Internet-world is part of reality. The people you correspond with on the network are real people with lives and careers and habits and feelings of their own. Things you say on the net can make you friends or enemies, famous or notorious, included or ostracized. You need to take the electronic part of your life seriously. In particular, you need to think about and consciously choose how you wish to use the network. Regard electronic mail as part of a larger ecology of communication media and genres -- telephone conversations, archival journals and newsletters, professional meetings, paper mail, voice mail, chatting in the hallway, lectures and colloquia, job interviews, visits to other research sites, and so forth -- each with its own attributes and strengths. The relationships among media will probably change and new genres will probably emerge as the technologies evolve, but make sure that you don't harbor the all-too-common fantasy that someday we will live our lives entirely through electronic channels. It's not true.

One might engage in many forms of communication on the net -- one-to-one electronic correspondence, network discussion groups, Web publishing, and so forth. And these interactions might be employed as part of a wide variety of professional activities: sharing raw data, arguing about technical standards, collaborating on research projects, chasing down references, commenting on drafts of papers, editing journals, planning meetings and trips, and so on. Underlying all of these disparate activities, though, is the activity of building and maintaining professional relationships.

Electronic communication is wasted unless we use it to seek out, cultivate, and nurture relationships with other human beings. Unfortunately the existing mechanisms for electronic interactions, by reducing people to abstract codes (like "c2nxq@loco.blort.com"), make it difficult to keep this deeper dimension of interaction in mind. Still, there's no escaping it: if you aren't consciously building relationships, you're probably getting lost.

At the most fundamental level, then, most of my advice has nothing intrinsically to do with electronic communication at all. My real topic is not (technological) networks but (professional) networking. Therefore I'll discuss networking in a general way before describing how electronic mail can accelerate it.

In the past, the only ways to learn networking -- not just being part of a social network, but having the skills for systematically seeking out and becoming acquainted with new people in the service of professional goals -- were to be born to a socially well-connected family or to apprentice yourself to a master of the art. And even though the term "networking" became fashionable during the 1980's, it is only recently that really useful books on the subject have begun to appear. (Some of these are listed in the appendix.) Many people resist the idea of networking because they associate it with "playing the career game", "knowing the right people", "kissing up to the powerful", "cynicism", or "politics", or because networking supposedly takes time away from "getting real work done". Some people grew up being told the dangerous half-truth that "if you do good work then you will be rewarded", as if rewards magically appear whether anybody knows about your good work or not. Others are allergic to the Machiavellian overtones of "How to Win Friends and Influence People". Indeed, people will accuse you of all sorts of terrible things if you admit to having worked-out ideas about networking. Many people, watching the real networking experts in action, assume that they must know some dark, inaccessible secrets that make it all easy (they don't). This is all terribly unfortunate, not least because it helps to stratify the world of research: networking is about community, not hierarchy, and people who don't learn to network are less likely to succeed.

The truth is that the world is made of people. People out of communities are like fish out of water or plants out of soil. Research of all kinds depends critically on intensive and continually evolving communication among people engaged in related projects. Networking cannot substitute for good research, but good research cannot substitute for networking either. You can't get a job or a grant or any recognition for your accomplishments unless you keep up to date with the people in your community. Establishing professional relationships with particular people and involving yourself in particular professional communities will change you: not only will you internalize a variety of interesting points of view, but you will become more comfortable in your writing and speaking because you will be engaged in an ongoing conversation with people you know. And if no community is waiting for you, you will have to go out and build one -- one person at a time. This "overhead" can be a nuisance at first, but none of it is terribly difficult once you get some practice and really convince yourself that you cannot sustain your professional life without devoting about a day per week to it.

SECTION 3. The Basic Steps

Here, then, are some of the fundamentals of professional networking. They will sound cumbersome and abstract. You'll be able to skip some of the steps as you get established in your field (or if, unlike most of us, you can charm rooms full of strangers in twenty minutes), but if you're starting from zero then the process really is this complicated.

(1) Know your goals.

Getting tenure? Being invited to conferences overseas? Filling your life with intelligent conversation? Developing leadership skills? Supporting worthwhile initiatives on exciting topics? Getting and keeping the resources to do the work you choose without artificial constraints? Clear goals will help

you maintain focus. And, in planning your research career, know what you care about. Don't follow fashion. Don't imagine that the world compels you to work on certain topics or talk a certain way. First things first: once you can explain what you care about, then you can build a community of people who also care about that. That's what networking is for.

(2) Identify some relevant people.

Awful as it sounds, "relevance" here is reckoned in functional terms: given how your particular professional world operates, with whom do you have a mutual interest in making contact? In the world of research, mutual interest is almost always defined through the content of your research: you wish to contact people whose research bears some important relationship to your own. Your network will thus consist, more or less, of the people whose work you cite, at least the ones who are still alive. And when you cite someone's work, you should form the intention of adding him or her to your network. But how do you identify these people? Most of the methods are wholly mundane: asking people with good networks, chance mentions of people in conversation, and the habitual scanning of bibliographies, abstracts, and conference proceedings. Get used to these mundane practices before you explore anything fancier.

Here is a way to think about it. Let us say that your research involves ethnographic study of grade-school teachers' strategies for including computers in their lessons. While you must certainly identify any other people who conduct research on that exact same topic, you should also cast your net more widely. Start by chopping your research interest into pieces; the pieces might be "ethnographic research in classrooms", "research on teachers adopting computers", "strategies for including computers in lessons", "ethnographic research on people adopting computers", "grade-school teachers' work strategies", "new technology in schools", and so on. Take those pieces to the library and locate the existing literature in each area. This will feel strange at first: if you've only worked with ethnographers, then the non-ethnographic work on your topic will seem foreign; if you've only worked with education people, then the work of business people or sociologists will seem foreign; and if you've only worked with people who study teachers' strategies, then the work on students' strategies will seem foreign. The vocabulary and research agendas may well be different, and it may take some effort to figure out what constitutes good research in a different literature. But find the relevant literature anyway, photocopy it, read it, get your head around its issues and worldview, highlight salient passages, take notes, write full citations in your notebook, and look particularly for the authors whose work you respect and whose values you share.

If this seems like a lot of work, think of it as shopping: the library is a giant department store, and you are shopping for professional colleagues. Accumulate a "long list" of potential colleagues. Study their work and learn from it. Figure out what elements your work has in common with theirs. Then practice explaining your research in a way that puts those elements in the foreground and the other elements in the background. The general formula is "I'm interested in [elements you have in common with the person you're talking to], and to this end I'm studying [elements that you don't have in common with them]". For example, "I'm interested in how teachers adopt computers, and to this end I'm conducting an ethnographic study of some grade-school teachers' strategies for including computers in their lessons", or "I'm doing ethnographic research on people adopting computers, and my fieldwork concerns grade-school teachers ...". Now you are ready to build a community for yourself that includes relevant people from several different research areas. These people will be like spokes in a wheel, of which you are the hub.

I am taking a strong stand here about the nature of networking, so let me explain the point another way. Many students ask themselves, "which network should I join?", and they worry that they will make the wrong choice. After all, your social network defines your career in a profound way, and if you choose an unfriendly network then you can make your life miserable. But this is the wrong way to think about it. You are not choosing which network to join; rather, you are creating a new network of your own. Your network is made out of individuals -- the individuals whose research and outlook are related to your own. These individuals' own networks will overlap to some extent, but they will

not be identical. Most of them will attend several different conferences, publish in several different journals, and so on. You should do the same. Don't spread yourself too thin by trying to cultivate everyone who could possibly be relevant. But don't confine yourself to existing boundaries either.

(3) Court these people individually.

The right way to do this is not entirely obvious. Unless you are already well known in the person's field, you should NOT simply approach them and say, "hey, I hear you're interested in ...". The reason for this is profound, viz, whereas ordinary social life calls on you to simply be yourself, professional life calls on you to construct and maintain a complex professional persona that is composed largely of your research, writing, and professional activities.

Therefore, in approaching possible professional contacts, you should let your research articles be your emissaries. (If you haven't written anything yet, let your networking wait until you have. Unpublished articles, conference papers, and research reports are all okay. In writing your first articles, you will want to lean heavily on your local system of advisors, mentors, and peers; the skills involved in this process are a subject for another time.)

Here is the procedure: (a) choose someone you wish to approach and read their work with some care; (b) make sure that your article cites their work in some substantial way (in addition to all your other citations); (c) mail the person a copy of your article; and (d) include a low-key, one-page cover letter that says something intelligent about their work. If your work and theirs could be seen to overlap, include a concise statement of the relationship you see between them. The tone of this letter counts. Project ordinary, calm self-confidence. Refrain from praising or fawning or self-deprecation or cuteness or making a big deal out of it -- you're not subordinating yourself to this person; you're just passing along your paper. Don't sound like you're presupposing or demanding that you'll get a response. Try a formula such as, "If you should happen to have any comments, I would be most interested to hear them". A good final sentiment for your letter is, "Will you be at such-and-such conference?".

Don't drop dead if you don't get a response right away. Anybody who isn't egotistical will appreciate your taking the trouble to write them. Most people are thrilled to learn that someone understands what they're saying. If they don't reply, that's regrettable but it just means they're busy. The deep principle is that network-building takes time. It's a long-term investment. You have to get your name out there. Keep taking the actions that I am describing, and trust that your community will come together when it needs to. The lack of an immediate response does not mean that nothing was accomplished, and you should not read any meaning into it.

In some countries, custom places great emphasis on "being introduced" to someone. That is, if you wish to meet with person X, you must first convince a professional peer of X, let us say Y, to formally introduce you at some professional gathering, or at least write you some kind of letter of introduction. While this procedure is harmless enough in itself as a substitute for the kind of letter I described above (provided that you have written a relevant paper along the lines I also described above), I think it is most unfortunate when customs actually *require* introductions. The effect is to reproduce social inequalities by making it difficult for anybody new to break into the existing circle of professional contacts. The procedure I advocate may sound embarrassingly American, but it is also relatively egalitarian.

A few comments about the paper itself.

Make sure you include full contact information on the front page. That includes your mailing address, phone number, e-mail address, and home page URL. Be sure to mark the paper as a "draft" unless it has been formally published, and put a date on it to distinguish different versions.

Double-check all of your quotations from other people's work. It is remarkably easy to get them

wrong.

Write a good abstract. A bad abstract just announces a question ("topic X is important and I will say something about it"), but a good abstract also answers the question by clearly stating the substance of your new idea or discovery. You may resist putting the bottom line of your paper right there in the abstract; it feels like you're making the paper redundant. But don't worry; it only feels that way because you know how the conclusion is arrived at.

Do not use citations as a form of flattery. This sort of thing fools nobody. Instead, think of a research paper as a kind of open letter, with the people you cite included among its addressees. The research literature is a conversation, and your paper is a way of starting new conversations with people in your area. When in doubt, get advice.

(4) Meet this person face-to-face at a professional meeting.

Research people normally go to great lengths to attend conferences and other professional meetings, and computer networks are unlikely to change this. So submit papers to conferences. Once you're at a conference, by all means attend the talks that interest you. But spend most of your time tracking particular people down and talking to them. If your target is scheduled to speak, attend the talk, take notes, brainstorm low-key questions and conversation topics, and then introduce yourself as the crowd is breaking up, or in the break or reception time afterward. The person's talk will provide conversation topics, and most people are more relaxed after their talk is over anyway. You shouldn't introduce yourself out of the blue by saying, "I wrote you a letter, remember?", but you can gently refresh their memory a moment or two into the discussion. Unless you really know what you're doing, you should keep the conversation to safe, professional topics. Ask questions about their work that you genuinely want answered. Ask them about the people they work with. Figure out who you know (that is, professionally) in common. Say things like, "I hear that your school has started a new such-and-such program; is that something you were involved in?", or "So-and-so from your group joined our faculty recently; nice person, interesting work". If other people, projects, or laboratories come up in the conversation, say whatever positive things you honestly have to say about them -- avoid criticism and negativity.

The most important project, once the discussion turns to matters of professional and intellectual substance, is the articulation of shared values, for example, "we both believe in using research to change the world", or "we both believe in using both qualitative and quantitative methods judiciously, without any a priori bias against either". Shared values make for stronger professional bonds than shared ideas or shared interests alone. Don't rush into this, but do keep the conversation focused on the concrete professional topics that will provide raw materials for it. On the other hand, if the conversation doesn't seem to be going anywhere, that's not your fault. Don't force it. Don't set enormous expectations for a single conversation. It's a long-term process. Just say "nice chatting with you" in a pleasant way and let it go. If the interaction went well, you can end the conversation by saying, "do you have a business card?" in a mildly enthusiastic way (assuming you have one yourself); if they don't have a card then shrug and let it go. If the interaction leaves you feeling bad, go get some fresh air, acknowledge the feelings, and be nice to yourself. Talk it out with someone if you need to. Then carry on.

If the person you wish to approach is significantly more powerful than you then the prospect of conversing with him or her will probably make you uneasy. That's okay. Concentrate on meeting people who intimidate you less and your courage will grow. Your single most important audience is actually not the power-holders of your field anyway, but rather the best people of your own professional cohort, especially other graduate students and others who are a few years further along than you. These people share your situation and will usually be happy to talk to you.

Notwithstanding all of this strategy, you should give respectful attention to anybody who approaches you, no matter how junior or marginal they might be. If you find yourself talking to someone who is

aggressive or confused, have compassion. It's up to you which relationships to pursue in depth, but everyone you meet shapes your reputation. You should conduct your professional activities ethically - and not just within the bounds of a legalistic interpretation of ethical principles, but with an active and creative solicitude for the well-being of the individuals and communities around you. You don't have to be shy or let people walk on you, and there's nothing wrong with being first in line if you've earned it. But if you get ahead at the expense of others then it will catch up with you -- in your heart if not immediately in your paycheck.

(5) Exchange drafts.

Having made initial contacts with people, I'm afraid that the next step depends on the hierarchy. If someone is much more senior than you, your goal is simply to get on their radar screen -- one chat per year is plenty. (That's mostly because they already have a full network and have begun to reckon relevance differently from you.) If someone you have met is more or less equal to you in the hierarchy, and if they still strike you as relevant, worthwhile, and trustworthy, it will probably be time to exchange pre-publication drafts of new articles. Again, keep it low-key: pass along a draft that you're ready to circulate and invite "any comments you might have". (Make sure you've run your draft through a spelling checker first.)

Upon receiving such a draft yourself, take the trouble to write out a set of comments on it. Make sure your comments are intelligent, thoughtful, constructive, and useful. And legible. Good comments include "so-and-so's work might be relevant here because ...", "I can imagine a so-and-so arguing that you're wrong here because ...", "I didn't understand what you meant by such-and-such; do you mean X, or Y, or what?", "a possible counterexample here is ...", "another question that might be interesting to discuss here is ...", "you could take this analysis even further by talking about ...", "this point could probably use more explanation because ...", "I found the transition here to be jarring", "would it be correct to say that you're arguing that ...?".

If you are uncomfortable writing critical comments, frame them with positive comments ("this is obviously an important topic and you've made some valuable observations"), develop a lexicon of hedges ("I'm not clear on ...", "maybe"), emphasize what's possible instead of what's wrong ("maybe you can build on this by ...", "perhaps you can further clarify this by ..."), own your feelings and judgements ("my sense is that ...", "I had trouble with ...", "I couldn't figure out whether you meant X or Y", "I'm worried about the assumption that ...", "I think I disagree with this argument because ..."), emphasize the audience ("I'm concerned that this particular audience will perceive this as ...", "I think these readers might interpret you as saying ..."), turn shortcomings into opportunities ("a topic for future research here might be ..."), and keep to specifics ("how does this step follow?" as opposed to "woolly and vague"). These rhetorical devices may seem baroque at first; their purpose is to let you express yourself honestly without fear of giving offense. Indeed, once you get used to these devices you may realize that you've spent your whole professional life saying what you think you're supposed to say instead of asking yourself what you really think and feel. The point, of course, is not to use the precise words I'm offering, but rather to find words that work for you while serving the same general purpose.

Most of your comments will respond to local issues in the author's paper. When you get done with these local comments, but while the issues are still fresh in your mind, it's good to take a step back. Ask yourself, "what is the really outstanding paper that's in here trying to get out?". Then explain to the author what this really outstanding paper is like, without of course implying that the paper isn't already really outstanding. On a more mundane level, you might take a moment to think of relevant references that the author hasn't cited.

When you get someone else's comments on your draft, you should take them seriously without regarding them as nonnegotiable demands. When they suggest that you change something, distinguish clearly in your mind between the problem the commenter was having and the solution they suggested. If they saw a problem (grammar, logic, fogginess, etc) then a problem probably does exist and you

should probably fix it in some way. But their particular solution might not be the best one, and you should not feel bound to adopt it. In fact, the most common error in using such comments is to follow them superficially, making the changes that entail the least possible effort, without honestly asking yourself what the underlying problem (if any) might be. For example, it will sometimes be clear that the reader misunderstood something you wrote. Their misconstrual will usually be offensively absurd, and you may feel frustrated. The solution to this problem is not to send the commenter a message to set them straight, but rather to figure out how a reasonable person, operating from a particular background of assumptions, might misconstrue what you wrote in that way -- and revise accordingly. When you're revising a paper based on such comments, try to formulate particular rules or themes or slogans to define an agenda for improving your writing. Identifying such an agenda will make you more aware of potential problems in the future, as well as motivating you to take some action about them, for example by rereading Strunk and White's "Elements of Style" or Claire Kehrwald Cook's fabulous and little-known copyediting book "Line by Line" one more time.

The ritual of meeting people and exchanging drafts is tremendously important. It's a shame, therefore, that nobody ever seems to teach you how it's done. When in doubt, ask for help. And if somebody comments a draft for you, thank them, include them in the paper's acknowledgements, and be willing to reciprocate. (You don't need to make an explicit offer of reciprocation, though, any more than you need to express your willingness to pass the salt -- it's understood.) Doing so will cement a long-term professional relationship -- a new member of your network. What is more, having thoughtfully reflected on others' comments on your work will help you to internalize their voices. That way, their voices will keep on talking to you during later projects. You will be smarter as a result, and you will have a clearer and more realistic sense of who your audience is and how they will react to your writing.

(6) Follow up.

Keep coming up with simple ways to be useful to the people in your network. A few times a year is plenty. Pass things along to them. Mention their work to other people. Plug them in your talks. Include them in things. Get your department or laboratory to invite them to speak. Put them up when they come to town. Write reviews of their books. And invent other helpful things to do. None of this is mandatory, of course, but it helps. And I can't repeat this often enough: keep it low-key. Never, ever pressure anybody into anything. Don't say "please" or "I know you must be very busy", which can sound like emotional manipulation. Don't heap so much unsolicited help on someone that they feel crowded or obligated. Don't complain. Don't approach the whole business as a matter of supplication and begging, but rather as ordinary cooperation among equals. Likewise, make sure you're exchanging these favors out of courtesy and respect, and not as phony politicking -- everyone hates that stuff. Build relationships with personal friends outside of work so you won't be unconsciously trying to get professional contacts to play roles in your personal life (for example, the role of sounding board for your troubles). If you don't hear from someone for a while, let it ride. If you feel yourself getting obsessive about the process, go talk it out with someone you regard as wise.

This step-by-step procedure is obviously oversimplified and rigid. And it omits many topics, such as the claims that effective networking makes on numerous other activities: teaching, giving talks, mixing at receptions, formulating research results, working with people at your home institution, and so forth. Nonetheless, some basic points about the networking process should be clear enough:

- * It takes time -- you have to be patient and let it happen.
- * It focuses on particular individuals and particular relationships.
- * It produces bonds of reciprocal obligation through the exchange of favors.
- * It calls for a significant but manageable up-front investment.

- * It requires you to cultivate a realistic awareness of power.
- * It involves a variety of communication media.
- * It forces you to develop communication skills in each of these media.

None of this is etched in stone. You should keep reflecting on your professional life as you go along, continually trying to come up with a better way of explaining it to yourself. No doubt I've left out some important dimensions of the process. When you figure them out, please let me know.

SECTION 4. Electronic Media: Some Cautions

Having surveyed the basics of networking and professional relationships, it's time to consider the role that electronic communication can play. The most important thing is to employ electronic media consciously and deliberately as part of a larger strategy for your career. It's okay to use the net in other parts of your life: hunting for people to correspond with, organizing political movements, joining discussions about sex and child-rearing, and so forth. But so long as you have your professional hat on, every message you exchange on the network should be part of the process of finding, building, and maintaining professional relationships. I cannot emphasize this strongly enough, because electronic mail seems to provide endless temptations to the contrary. I succumb to these temptations all the time, and I always regret it. They include:

*** The temptation to react.**

Most on-line discussion groups consist largely of people reacting to things they've seen, acting on impulse without thinking through their own agenda in the situation. (One kind of reacting is called "flaming", but many other kinds of reacting are equally insidious.) E-mail encourages this kind of reactive behavior by making it easy to respond to a discussion with only a few rapid keystrokes. Keep your cool. The more impulsive you are, the more you're using the network to find friends as opposed to colleagues, and the greater your unmet needs for affirmation and attention, the more you will be led into reaction. One slip-up will not bring your career to a halt, but you should definitely be aware of the phenomenon.

If someone abuses you in an e-mail discussion, hang back. Unless you're really sure that you've gotten the anger out of your system, go sleep on it overnight. Talk it out with someone. Decide whether you should respond at all. If you do respond, go ahead and reveal your anger ("I felt angry when I read your message"), but then take care to paraphrase your interpretation ("I took you to be accusing me of trampling on your area of expertise"), admit the (usually very real) possibility of misinterpretation ("Perhaps I wasn't clear, or perhaps I've misinterpreted your response"), outline the facts as you see them ("My understanding is that ..."), and politely invite a response ("I'd greatly appreciate hearing your perspective. Thank you."). Part of you may be howling for revenge the whole time you're typing this stuff, and the howling will be all the louder because you're sitting alone in a room with just a computer terminal to inhibit you. But definitely resist the howling and you'll be surprised how often you can rescue a bad situation. Few people in net-land are really as awful as all that.

*** The temptation to treat people like machines.**

One seeming consequence of the intangibility of e-mail is that basic politeness often erodes. I find it takes real work to remind myself that the person behind the e-mail message is an actual human being and not, say, another name to add to my network. You can help keep network interactions on a human level by taking special care about the basics of politeness. If you send someone a message, address them by name. And if somebody on the net helps you out (for example by providing some information in response to a query on a discussion group), say "Thank you" and perhaps give a brief

account of how their help was helpful. If their message to you was detailed, for example, point out that you noticed this by saying "Thank you for your detailed message".

More generally, practice coming up with positive, non-obvious things to say about people and their actions. It's harder than coming up with negative things to say, of course, but it makes you much more perceptive, articulate, and diplomatic. It also helps you to offer criticism, since people find criticism much more useful when you put it the context of positive observations. For example, someone I know once pointed out to me that I always try to make things fun. I had never realized this before, but it's true, and his incredibly astute observation really changed my own awareness of myself, as well as giving me a sense of proportion against which to weigh the equally astute criticisms that he also had to offer. A positive observation, by the way, isn't just a compliment. Most compliments are generic (smart, pretty, nice, responsible, blah blah blah) but positive observations are much more specific to that individual. They're much less obvious and much more valuable, and they don't have the same faintly manipulative feeling as ritual praise.

*** The temptation to pretense.**

Electronic communication affords the illusion of semi-anonymity: since people only know you by what you type, you may tend to lose the inhibitions that normally keep you from pronouncing on matters that you are not really informed about. The chatty informality of most e-mail discussion groups, which is certainly capable of being a force for good in the world, nonetheless also tends to wear down these inhibitions. Besides, everyone else is doing it. But pretending to know things is just as bad an idea on e-mail as it is face-to-face. Phrases like "I think I recall that ..." and "I'm not a lawyer but ..." are red flags -- indications that you're probably about to do more harm than good. Keep focused on your own unique professional contributions and let the random chatter slide.

Beware: many people revile this injunction against pretense, based on a false conception of community and a misguided fear of elitism. I am certainly not promoting the reign of experts here; I am simply applying to electronic communication the everyday injunction to know what you're talking about.

*** The temptation to paranoia.**

Along with your own near-anonymity goes the frequent difficulty of knowing who exactly is receiving your discussion-group messages. As a result, you may just listen in, terrified to say anything for fear that you will be dumped on by powerful experts -- an experience sometimes stigmatized (or even celebrated, as if it expressed some kind of power) as "lurking". This phenomenon is not exclusive to e-mail, of course (much hype to the contrary), but it is real. The solution is to focus on the careful, step-by-step process of approaching individuals, leaving group participation until you feel more comfortable -- which you will, eventually. Don't feel pressured to participate before you are ready.

*** The temptation to get overwhelmed.**

It's easy to sign up for everything that sounds interesting, or to pursue dozens of people in every direction, only to find yourself swamped with messages to read and favors to return. If you're getting more than about twenty messages a day, or if you hear yourself saying "it's all I can do just to delete all the messages that fill up my mailbox", then perhaps you should review your goals and adjust your mailing list subscriptions accordingly. If you're on a high-volume list, investigate whether it has a "digest" option that packages the messages for each day or week into one big message.

*** The temptation to get addicted.**

Addiction means getting overwhelmed on purpose. Few people take e-mail addiction seriously, but it is a genuine addiction and it can be a self-destructive waste of time. Ask yourself: Can I just decide to

give it a rest for a few days? Am I reading all this e-mail because I get some identifiable value out of it, or am I doing it to distract myself from my feelings? Do I use other things to distract myself from my feelings -- drugs, sex, food, alcohol, television, work? If you start thinking that any of the answers to these questions might be "yes", go find a twelve-step recovery group in your community (Alcoholics Anonymous or the many other programs that have been modeled on it) -- or maybe start one on the net.

Getting help doesn't mean you're crazy; quite the contrary, it means you're one of the saner people around. And taking care of yourself doesn't make you selfish; quite the contrary, it is a prerequisite to being any genuine use to anyone else.

*** The temptation to waste time.**

Exploring the net is a tremendous way to avoid writing your thesis. Random exploration will rarely yield network information resources that are actually useful to your real career goals. Useful information is always bound up with useful people. Therefore, your explorations of the network will most usefully be guided by your goals and structured by the search for people to add to your network.

If you really do care about on-line information resources, develop a good relationship with a librarian. Librarians are almost uniformly wonderful people who enjoy helping you find things, whether on the net or elsewhere. (If you're shy about asking people to do things for you, instead tell them what you're trying to accomplish and ask them for advice about how to do it yourself and for suggestions about who might be able to help you.)

*** The temptation to blame e-mail for your problems.**

If you're a beginner with electronic communication, you will probably have a few mishaps at some point: getting put down by somebody, acting on an impulse that you later regret, accidentally sending a message to the wrong person, violating the obscure protocols of professional communication, getting overwhelmed with marginally worthwhile messages, finding yourself trapped in long, complicated correspondences, or whatever. When this happens, you might be moved to blame the medium; you'll find yourself saying that e-mail is dangerous or worthless or overwhelming. But ask yourself: do similar things happen in group meetings or conferences or over the telephone or in paper mail? E-mail has its shortcomings to be sure, but it's just a tool like any other. You'll have to learn how to use it, what to use it for, and when not to use it.

Of course, a few mistakes won't kill you. And it's just as bad to go to the opposite extreme and become a compulsive machine for scoring points and making connections. What matters is understanding whatever you're doing within the bigger picture of your life and career.

SECTION 5. The Role of E-Mail

So, assuming you've been duly admonished against these temptations, what *are* the most constructive uses of electronic communication? Let's review the six-step networking process I outlined above and look for opportunities to use electronic mail to ease the various steps:

(1) Know your goals.

Electronic mail can't help you much here. Indeed, you'll need to make sure that your goals are not defined narrowly in terms of electronic mail. Once you've begun corresponding with people you consider wise, you can begin to seek advice from them. Asking for advice is an art in itself, and other things being equal it's best done face-to-face, but once you know someone fairly well on a face-to-

face basis you can move some of the discussion to e-mail.

(2) Identify some relevant people.

The most fundamental way of finding people online is to help them find you. This starts with your home page. Your home page is a projection of your professional persona -- a way for people to know who you are as a member of the profession. If you have had a past life in a professional field, then you instinctively understand the point: your fate depends on how people perceive you, and so it matters what image of yourself you project. Your home page should include four things:

- * complete contact information (paper mail and e-mail addresses, work phone and fax numbers, that sort of thing),
- * links to organizations you are associated with (your department, laboratory, project, professional associations, events that you are involved in organizing, classes you teach, etc),
- * full citations to all of the publications you want people to know about (these should ideally be linked to complete text for all of those publications), and
- * links to other Web-based facilities that you maintain, for example a page of links to resources that are relevant to your research topic.

It is especially important to put your publications on your Web site. This can be difficult, given that publishers generally ask you to sign over your copyrights. But even when this happens, you can still amend the copyright form with a marginal phrase like "I retain the right to post the paper on my Web site". The publisher may grouch at you or say no, but it's worth a try -- vastly more people will read your work online than in the dusty pages of a journal. The best situation is when you publish in a journal (or conference proceedings) that is itself online. In that case you can link from your home page to the official version of the publication, and the official version of the publication can include a link back to your home page. In general, the more you spread around links to your home page, e.g., by always including it in your bio when you write magazine articles and the like, and by including it in all of your messages to discussion groups and the like, the more it will help you to connect with others.

Unless you know what you're doing, I do not recommend including personal information on your professional Web page. If you do want to maintain a personal home page for your friends and family, or if you want to post your baby pictures and jokes and links to TV show fan pages, get an ISP account and create a completely separate home page for that purpose. I also do not recommend putting goofy stuff on your professional home page. It needn't be dour and pompous, but it should not be frivolous either. Humor is okay, but professional humor. It's a fine line.

Having made yourself visible on the Web, you can also use the Web to search for people whose work is relevant to your own. Web searching certainly does not replace library work. But the library and Web sort the world in very different ways, and you can accomplish a great deal by moving back and forth between them. Look for specialized online resources that are specific to your field, directories of research project in your field that people might have built on the Web, and the home pages of relevant university departments and other research institutions. Hunt through them, and notice how badly designed most people's home pages are for your purposes. When you do find useful materials, such as online research papers, be sure to capture URL's and citations for future reference. You might even consider creating your own Web page with links to those resources, thus saving both yourself and other people the trouble of searching for them again.

You can also use online discussion groups to find people, but you should do so cautiously. If someone in a discussion impresses you, don't approach them right away. (It's obviously okay to answer routine functional requests on the order of, "does anyone know ...?", provided you simply answer the request

and leave the networking for later.) Instead, head back to the library catalog and periodical indexes (which are probably on-line anyway), look the person up, read a sample of what they've written (especially any books they might have published -- at least skim them), and proceed with the next step. Then use standard Web search tools to locate this person's home page, which might include some citations or even complete papers. Only if you cannot find any relevant publications should you consider sending the person a concise note saying, "what you said about XXX is interesting to me because of YYY; if you have an article on the subject ready to distribute then I'd much appreciate a copy".

Or, having listened in on a discussion group for a while and observed its customs and conventions, you might consider contributing something yourself. Don't just react or chat. Instead, write a really intelligent, self-respecting, unshowy, low-key, less-than-one-page message that makes a single, clearly stated point about a topic that's relevant to both their interests and your own, preferably but not necessarily as a contribution to an ongoing discussion. Since your message might be read by people all over the world, avoid any slang or jokes which might not travel well. Sit on this message overnight to make sure you're not just reacting to something or repeating a familiar point that happens to make people in your community feel good. If you're feeling uneasy or compulsive about it then just throw it out and wait for another day, or get comments from someone whose judgement you trust.

Having thus refined your message, contribute it to the discussion group and see what happens. If nothing happens, don't be too concerned. Part of having a public voice is that your audience isn't always directly visible; you won't always get the same kind of immediate feedback that you get in a one-to-one, face-to-face interaction. So resist the urge to agitate until you get a visible response. If your message happens to start a discussion then listen respectfully, constructively acknowledge all halfway worthwhile responses, and be sure you're not just reacting to things. This process might flush out some people worth adding to your network. Or it might not. In any case it will get your name out and will, with remarkable efficiency, establish your reputation as an intelligent and thoughtful person. Remember: don't bother doing any of this until you've written up some work and are ready to actually start building your network.

One thing that does not work, in my experience, is broadcasting a message to half the world saying, "I'm looking for people who are working on such-and-such", or "I've written papers about X and anyone would be welcome to read them". I don't know why exactly, but such broadcasts either don't reach the most worthwhile people, or the most worthwhile people are too busy to answer them. Whenever possible, then, approach people as individuals. What you *can* do is to send messages individually to small numbers of people saying, "Can I ask your help? I'm trying to locate people who are working on such-and-such. I've tried the obvious sources in journals and indexes, but without much luck. Any leads you can offer would be much appreciated." Only do this if you have a specific purpose in mind for finding such people, such as organizing a workshop or other professional activity.

(3) Court these people individually.

In the old days, the article and letter you sent to approach someone were both printed on paper. Should you use electronic mail instead? I actually recommend using paper. At least you shouldn't use electronic media just because they're modern. For one thing, paper is much easier to flip through quickly or to read on the subway. It's also much easier to write comments on. Use your judgement. If you do decide to employ electronic mail for this purpose, use just as much care as you would on paper. Remember that first impressions count. And don't try to use e-mail for the get-to-know-you type of chatting that should logically follow at this point. Instead ...

(4) Meet this person face-to-face.

I believe, notwithstanding all the talk about "virtual reality" and "electronic communities", that electronic communication does not make face-to-face interaction obsolete. Instead, as I said at the outset, you should think of e-mail and face-to-face interaction as part of a larger ecology of

communication media, each with its own role to play. In particular, I honestly believe that you do not really have a professional relationship with someone until you have spoken with them face-to-face at length, preferably in a relaxed setting over a social beverage. Call me old-fashioned, but make sure that any aversion you might have to face-to-face interaction isn't based on inertia or fear. Inertia and fear are normal feelings, but they have to be worked through and faced.

Having said that, the availability of e-mail will nonetheless bring subtle changes to the ecology of communication in your field. This is particularly true with regard to the telephone, whose uses change considerably in e-mail-intensive communities -- so much so, in fact, that many people nearly stop using the phone altogether (or never learn how) and try to use e-mail for unsuitable purposes like asking discussion groups for information that could have been gotten more easily through resources listed in the front of the phone book. (It's amazing what you can accomplish over the telephone once you learn how. And long-distance really is not that expensive unless you're planning to settle in for a long chat, which you usually are not.) But the role of face-to-face interaction will change as well, particularly since many kinds of routine work can be conducted almost as easily at a distance electronically as in formal meetings face-to-face. Electronic communication might even allow face-to-face interaction to shift its balance from its practical to its ritual functions. In any case, the general lesson is to pay attention to the relationships among media so you can use the right tool for each job.

One more note: when you go to a professional meeting, take a minute to flip through your e-mail correspondence and make a list (ideally on paper) of all the people you've "met" on-line who might attend the conference. Right before the meeting begins, recite all of the names out loud to yourself so they'll be on the tip of your tongue. Few things are more embarrassing than drawing a blank when someone at a conference approaches you and tries to pick up a conversation begun on e-mail.

(5) Exchange drafts.

Once again, you should decide whether to use paper or electronic mail to exchange comments on drafts of articles. I recommend using electronic mail. Read the paper once with a red pen, marking small items and writing two-word marginal comments -- just enough to remind you of your thoughts an hour later. Having marked the superficial problems, you may need to read the draft again with more weighty questions in mind. Again, simple comments in the margin will suffice. Then, right away, before your thoughts fade, sit down at a computer and type in a long e-mail message with all of the thoughts that your two-word comments call back to mind. Just keep typing until you run out of red markings to explicate. You will be amazed at how much useful material you can generate in a short time. Once you are finished, toss the author's draft in the recycling bin. The author will miss out on some of your detailed copyediting, but you don't want to take the risk that the author will misunderstand the cryptic comments you wrote in the margin. If you do decide to paper-mail the marked-up draft to the author, put your name and phone number on it so they can keep track of whose comments were whose.

Notice the complex interactions between paper and electronic forms of communication. You may find different practices more convenient; the point is to be aware that you have a choice. I even know people who tape-record their comments on a paper while they're reading it and then send the author the tape. Keep your real goals in mind and be creative.

(6) Follow up.

This is one area where e-mail makes a qualitative difference. Once you've established a professional relationship with someone, e-mail provides a convenient way to maintain a steady, low-key background of useful two-way interactions. You might wish to forward things to people (abstracts, interesting messages, conference announcements, press releases, book reviews, whatever) depending on their interests. Or you might wish to recommend their papers (in a low-key way, with a concise summary and a complete citation, and only if you really mean it) to e-mail discussion groups. Don't overdo it, and pay attention to whether the gesture is being reciprocated.

After a (long) while you might consider building an electronic mailing list of people who share your interests and would like to get interesting stuff forwarded to them routinely -- including, of course, your own abstracts and shorter papers. Never add anybody to such a list (or any list) without asking them, and never pressure them or make a big deal out of it. (And make it a real mailing list, run on an automatic server that lets people subscribe and unsubscribe automatically, rather than a long list of addresses that you send a message to. If you do have to send mail to a large number of people at once, be sure to put their addresses in a Bcc: field, not in the To: field where everyone will have to look at them.)

E-mail is also obviously useful for a wide variety of other purposes, for example scheduling and organizing professional events. Make sure that some purpose is actually being served; don't engage in professional e-mail correspondence simply for the sake of it.

And don't do any of this stuff with someone unless you've gone through the previous five steps and established a real, functioning relationship with them. Finally, double-check that you're keeping track of the difference between a professional relationship and a personal relationship. A good test is, would I call this person up on a Friday night and suggest going to a movie? Even then, give any such transition in the relationship a little time to sink in before you start to rely on it.

SECTION 6. Building a Professional Identity

So far I have been talking about networking at the one-to-one level. That's where it starts. But the research community is a public place, and as you become established in your field, publishing in journals and speaking at conferences, you will also develop an identity. This section describes some of the basics of building such an identity. I call it a professional identity because its workings are governed by the tacit rules of the research profession, some of which are specific to the research community and others of which apply to most other professions as well.

Socializing at conferences

Sooner or later (hopefully sooner), you will start attending research conferences in your field. Sections 3 and 5 have already discussed the techniques for approaching someone at a conference that you have already written to. This section offers more suggestions for getting the most from a conference.

First, however, for those who weren't born knowing these things, let me explain what a conference is. Almost any professional field will have one or more annual meetings, typically three or four days in length, sponsored either by a professional association or by an organization created specifically to host that particular conference. Most such meetings are held in a different city each year, although some smaller meetings are held in specific appealing places (e.g., Hawaii in January). In recent years many conferences have started gesturing toward globalization by (for example) rotating between the United States and Europe. Most conferences, especially larger ones, are held in expensive downtown convention hotels, for the simple reason that such hotels are the only places where large numbers of out-of-towners can sleep. At first it might seem like a scam that everyone in your field gets to travel to a different interesting city every year for a conference. You'll stop thinking that way, though, once you have been to a few dozen conferences and gotten sick of traveling. People's home institutions are spread out, they have to meet somewhere, and so they might as well meet someplace reasonably nice, hopefully with good airline connections. They'll be spending most of their time in homogenized airports and hotels anyway, so it's not like a trip to a resort.

The fundamental purpose of professional conferences is networking. Everyone in your field has a professional network, just like you. They built their networks the same way you are, and they attend conferences to keep their networks in working order. In the old days, before the Internet, conferences

were also occasions when committees would meet, for example to edit journals or plan future conferences. That does still happen to a degree, but e-mail and the Web have moved most such logistical matters online, leaving the more ceremonial functions to face-to-face conference interactions. Conferences are also occasions to publicize your work, although as should now be clear that function can hardly be dissociated from networking, and they are places for the job market. Some conferences have evolved rituals for interviewing job candidates in hotel rooms; others simply provide hunting grounds for advanced graduate students to network with senior scholars whose departments are likely to be hiring. For all of these reasons, you should attend conferences, and take them seriously as professional occasions, as soon as you have research that's ready to report.

Although each field has its own practices, as a broad generalization conferences accept papers in two different ways: either you submit your paper (or perhaps an abstract) as an individual, or else you join a coherent "panel" of papers that are submitted to the conference as a group. In either case the program committee somehow decides which papers get accepted. You should find out which practices obtain at the conferences you hope to attend, and plan accordingly. If the conference only accepts panel proposals, it would not be excessively presumptuous of you to start organizing a panel yourself. You might discover that the people you approach are already putting panels together, in which case they might (or might not) include you in their planning. This process can get a little bit clumsy, but don't worry about it.

If the conference takes individual paper submissions, then you should seek detailed advice about the politics of the process. For example, some conferences require you to provide a few keywords on the title page so that the program committee can route your paper to the most suitable referees. Obviously you want to include the keywords that get your paper routed to the referees who are most likely to appreciate your work's virtues, and only your faculty advisors can tell you what those keywords are likely to be. (You should find out whether the conference is formally refereed, meaning that the program committee recruits people to actually write comments on each paper, accepting some and rejecting others. Formally refereed conference papers are more valuable in career terms than papers that were handled more informally.) Papers that are accepted individually will usually then be grouped into panels by the program committee, so that the program will list your paper alongside a few other people's, and responsibility for convening the panel will be assigned to a panel chair, most likely a regular conference attendee whom the program committee has drafted for the job.

Some conferences distinguish between papers and posters. A paper is something that you stand up and present in front of an audience, at a set time, with a microphone and perhaps some audio-visual aids. Posters, on the other hand, are grouped into one big room. You'll be given a bulletin board of a set size, and you'll be asked to prepare a poster that can be tacked up on the board. Conference attendees will be able to browse through the posters, and certain times will be advertised when poster authors are asked to be available alongside their posters to chat with passers-by. A poster is a lower-status form of presentation than a talk, but no stigma attaches to it, and you shouldn't be embarrassed to prepare a poster. Once you get over the feeling that you're a salesperson waiting on customers in a shop, it can be a more relaxed way to talk to people individually than the crush after a panel is over. If you do prepare a poster, do take the time to do it right, with appealing and legible graphics.

Conferences cost money. Most conferences have discounted student rates, which you might even be able to afford. Many conferences offer free registration for students who are willing to engage in menial jobs such as staffing the registration desk, and you should go ahead and accept such deals unless it offends your pride. There might be a Web page for students looking for other students to share hotel rooms with, or perhaps you can establish such a page yourself. If you are getting ready to go on the job market then you should guilt-trip your thesis advisor into paying your airfare to the conference, or at least make sure to write travel money into the relevant grant proposal well ahead of time.

Alright, here is the promised advice for socializing at conferences, partly adapted from notes by Dan Ryan.

Many conferences are preceded by smaller one- or two-day workshops; these events will usually provide a more focused and comfortable occasion for mixing with people than the larger conference. It is much easier to approach someone at random during such an event, something that tends to work poorly in a crowded conference setting.

Stay in the main conference hotel if at all possible; when you check in, locate the fitness center, if any, and the nearest good breakfast place. Study the conference schedule to determine which talks you'll be attending, and find out in advance where the meeting rooms are. You'll be happier if you don't look lost. Go find the room where you will be speaking and check it out. Find a moment when nobody is using the room, stand at the speaker's podium, and get used to the energy.

Once the event gets rolling, act like a host. Introduce people to one another, include them in things, and notice when they are feeling bad or being oppressed. Hunt for the person who is chairing the panel that you are speaking on.

When your talk comes, keep it simple. Practice your talk several times in realistic conditions before traveling to the conference, so you can be confident of doing well when the time comes.

If you aren't accustomed to speaking with a microphone, take a moment to do it right. If the room has an audio technician, ask if you can get a cordless lapel mike, which is much less constraining than a mike that is mounted on a podium. Refuse to use a headset or a hand-held mike, which are only for experienced performers. If you must use a podium mike, you can avoid looking like a fool by stopping briefly to familiarize yourself with its on-off button. If you are the first speaker in a session to use the mike, check the sound level ("can you hear me?") before you launch into your talk. If you are seated at a table with the mike on a stand in front of you, resist the temptation to press your mouth right up against it. You don't want the mike directly in front of your mouth, since the wind from your sibilants (s-sounds) will make a roaring sound in the speakers. Sound travels in all directions, not just straight out of your mouth, so put the microphone just below your mouth. That will also help people to see your face. If you have problems with the microphone, don't be shy about stopping to get help. It happens all the time.

The chair of your session should tell you in advance how long to speak for. If not then ask. Try to finish on time. But if your talk runs more than a minute over your allotted time, suppress the overwhelming urge to race through the rest of it at 100mph. Don't be one of those people who says "in conclusion" but just keeps on talking. Instead, just give up. Shrug and say, "oops, well, I've gone over time so I'll just stop here; I have the full paper here if anyone wants it", and then briefly remind everyone what your bottom-line conclusion is. Everyone will be impressed at your poise.

After all the panel members' talks are over, a question period typically follows, with audience members specifying which speakers their questions are addressed to. Don't worry if you aren't asked any questions; questioners are often drawn to the most provocative comments, and provocation doesn't imply quality. If you are asked a question, resist the temptation to launch into a long speech that explains all of your intricate thinking from the beginning. If the question has a short, conclusory answer (such as "yes" or "no"), say the short answer first. Having said the short answer, you might find that the long answer becomes shorter as well.

When your panel is over, hang around for a few minutes in case anybody wants to chat. Bring business cards to exchange (but, as the speaker, don't offer anyone a card unless they offer a card to you). Affect a calm, low-key demeanor and ask them, with genuine interest, "are you working in this area as well?". When you're done, go get some fresh air.

Relax. Take care of yourself. Breathe. Drink water. Buy a book. Don't drink coffee. Don't eat junk food. Rarely pass up an opportunity to go out with a group to eat. If you run out of things to do, go figure out who the smartest people at the conference are, especially the more human and less established ones, so you can start promoting their work.

If you have a laptop computer, consider typing in a straightforward narrative account of the ideas presented at the conference; after the conference is done, you can help others by editing this narrative for clarity and sending it to a mailing list of people in your field. This is a low-effort way to help the community and get your name out.

Start imagining yourself into the role of conference organizer by consciously noting aspects of the conference that are especially well- or poorly-organized. (And send your notes to me so I can include them here.)

Some technically advanced conferences have created Web-based systems for helping attendees connect with each other and schedule their time before the meeting even begins; advocate that such a system be built for any conference that you might be involved in organizing.

The most basic skill for attending conferences is talking to other researchers about your work. They will ask you, "What do you work on?", and you need to be able to answer this question any time, to anyone, at any length. This is amazingly hard, and you may end up kicking yourself at your stammering non-answers. That's fine; it's part of the process. You should rehearse answers to this question before attending conferences. Your local research group may not be helpful; since they already know what you're working and share all of your assumptions, you rarely need to explain yourself at a basic level to them. A good test is whether you can explain your research topic to an artist (unless your field is art, in which case you need to explain it to a mechanical engineer). Explaining it to your family is good, too. Try practicing ten-second explanations, one-minute explanations, five-minute explanations, and so on, up to a full-length talk.

The hardest part, however, is tailoring your explanation to your audience, and this is an area where you should invest sustained, structured effort. Do you remember when you were in the library, identifying researchers whose work was related to yours in various directions? This is similar. Try to avoid explaining your work to a complete stranger. Instead, get them to talk first. And while they are talking, work to identify specific elements that your respective research interests share in common. (By the way, the phrase "I am interested in ..." actually means "I am conducting research on ...".) Perhaps you both employ qualitative research methods. Perhaps you are both doing comparative work. Perhaps you both have a political agenda, even if maybe not the same one. Perhaps you are both studying the history of a certain region, or a certain century, or a certain industry, even if other elements of your research topics are different. Perhaps you are both aiming your work at industrial applications. With practice, you will begin to spot the commonalities at a greater distance.

Once you have identified the commonalities between your two projects, fashion an explanation of your own project that puts the common elements in the foreground, and leaves the other elements in the background. For example, if you are using economic theories to study the Mongolians, and the other person is using cultural theories to study the Mongolians, put the Mongolians in the foreground; tell them what sources of evidence you're using, what particular people and places you're looking at, and so on, and then mention along the way that you're using some economic ideas to look at those things. On the other hand, if you are using economic theories to study the Mongolians, and the other person is using economic theories to study the Japanese, put the economic theories in the foreground. Explain what theoretical authors you are drawing on, what methods you are using, what big economic questions you're hoping to help answer, and so on, and then mention along the way that your case study happens to be drawn from the Mongolians.

This strategy of foregrounding shared elements might seem weird at first; it might even seem manipulative or phony, as if there were one single authentic answer to the question "What are you working on?" and all the other answers are artificial. But that's not how it works. The answers that you construct for people from unfamiliar backgrounds will certainly feel unfamiliar. But if they are honest representations of your work then they are good, informative, relationship-building answers. Once you get some practice consciously constructing explanations of your work for many sorts of people, you will begin adjusting your explanations automatically, and the sense of weirdness and

fakeness will dissipate.

If you have a hard time traveling to face-to-face meetings

The Internet helps people at far-flung or ill-funded universities to keep their hand in the research world. Here are some guidelines:

- * Follow the basic six-step outline I described above, more or less omitting the steps that involve face-to-face contact. This is better than trying to undertake those steps using e-mail, since e-mail really is not very good at some things.
- * Correspond. Spend lots of time writing intelligent, thoughtful letters to people about their manuscripts and papers, along the lines I've described.
- * Translate. If the major language of your country is not English, but you are corresponding with authors who *do* write in English, consider translating short papers that provide introductions to their work. This is a good way to build professional relationships, as well as bridges between different intellectual cultures.
- * Publish. And then make it a priority to get reprints into the hands of people who might be interested in them. If postage is a problem, make a postscript file (or preferably several different formats, since not everyone can translate postscript) available on a Web site or ftp server.
- * Join the conversation. You might be isolated geographically, but you don't have to isolate yourself intellectually. Make sure that your letters and papers are part of a conversation. That is, formulate your professional papers as responses to the existing literature, and to particular contributors to that literature, and make clear the nature of your debts to those authors and the nature of your own contribution. If you're not clear how this is done, use existing papers as a model.
- * Relentlessly promote your own work. Mention your ideas and publications in messages to appropriate electronic discussion groups. But always keep it low-key. No fanfare, no hype, no big claims. Cultivate an attitude of quiet, confident intelligence, and then consciously and carefully project that image.
- * Make yourself useful. When you read something you genuinely respect, send a brief review and recommendation to the appropriate discussion groups. Pass along useful items you encounter on the net. Invent some useful network facility, if only an annotated bibliography or guide to resources.
- * Be systematic. Once you've gotten accustomed to the whole process of networking, take a few days out to search all available resources, both on the network and on paper, and make list of all of the people you want to approach using the six-step process and all of the e-mail discussion groups you want to publicize your work on. Then slowly and systematically, over several months or a year, approach them all. The process takes lots of time, but it does work.
- * Keep trying to raise travel funds. The professional contacts you develop on the net ought to be able to help with this, since the world is full of international travel grants and exchange programs that are relatively easy to set up once you have willing parties on both ends. But wait until you have a fairly strong relationship going before you try this.
- * Make your travel count. Don't spend your hard-earned money on travel unless you're going someplace where you can meet with several people you already "know", if only through e-mail correspondence and the networking process explained above. Unless you're an unusually sociable or charismatic person, don't attend a conference in the abstract hope that you'll meet someone useful there.

* Share your experience. Help build the electronic networking community by getting involved in Local Civic Networks and the like. Reach out to people in your area whose interests in computer networks might be different from yours, and do some community-building among them. Reflect on how your relatively marginal position in the world's research system conditions your work and your life. Write down your experiences and advice for the benefit of others.

Publication and credit

Another dimension of the institutional structuring of professional relationships pertains to credit. If you do something new, you ought to get credit for it. Credit resembles money in the sense that you can "buy" certain things with it -- for example further research funding. (Credit for this observation, for instance, belongs to Bruno Latour and Steve Woolgar in their book, "Laboratory Life".) Credit can also be understood as an informal type of intellectual property. A research paper resembles a patent application, which is always drawn as widely as possible, consistent with the actual accomplishments of the work and being careful not to trample any prior art. But credit differs from money and property in other ways. The most important of these is that nobody is keeping an objective ledger of who gets credit for what; it's much more an evolving consensus that only becomes formalized years after the fact. Many people get neurotic about credit and invest tremendous effort trying to manipulate others into giving them the credit they think they're due. But the actual keys to getting due credit for your work are simple. The first is to publish promptly. When you do something good, write about it and get it out there. And the second is to do your networking. I have already explained one reason why writing helps with networking -- it gives you something to talk about. A second reason is that if you talk about your work without having circulated it in written form then you will be (perhaps justifiably) paranoid that someone else will (perhaps innocently) publicize your idea before you and therefore get the credit for it. Don't get yourself into this demoralizing rut. And understand where the danger comes from: when two people are doing research in the same area, their relationship is inevitably structured by a tension between a natural alliance (helping one another, organizing things together, jointly publicizing the shared area of research) and natural competition (over credit for new ideas). This tension will be much easier to manage if you continually put sane amounts of effort into both your writing and your networking.

When you do publish your work, where should you publish it? Two errors are common. One error is to choose your publication venues reactively by simply publishing in the places where someone in your network happens to invite you to publish -- for example, in a book that this person might be editing. While accepting such invitations might actually be a good idea, don't let invitations drive your publication strategy. Instead, talk to people who are knowledgeable, hit the library, map out all of the potentially relevant publications, and make conscious decisions. This leads me to the second common error, which is to get obsessed with publishing in the "good places". Lots of people get preoccupied with ranking journals, so that publication turns into a zero-sum status game. This is most unfortunate. It is much better, in my view, to think about publication choices in terms of professional relationships. A journal is not just a badge of rank. Much more importantly, it is a gathering-place for a particular community of people, namely the professionals in that field who read it. When you publish in a particular journal, you are doing two things: (1) you are representing yourself as being relevant to such-and-such a research community, and (2) you are introducing yourself to that community and inviting them to get to know you. So instead of asking, "where is the high-prestige place to publish", ask "who would I like to associate with professionally?". That makes the decision much easier. If you don't know what sorts of people read a given journal, you can always ask. Most likely you will get different answers from different people, according to their own relationships to that journal's readership, but that's alright. Just decide who you believe and carry on.

Intellectual leadership

The steps for making contact with people that I've been describing obviously do not exhaust the social skills that are necessary to get along in the professional world of research. But they do provide a necessary foundation -- the basic strokes of the professional combustion engine. Having gotten your

network going in this way, the obvious question is what to do with it. Well, maybe you do nothing with it. Having people to talk to about your research might be plenty. But if you'd like to do good in your field, or do well in it, or both, you'll want to try organizing something: a workshop, a journal issue, an e-mail discussion list, an approach to a funding agency, or whatever. This is not the place for an encyclopedic account of such activities, but perhaps it will help if I introduce two of the more important concepts around them: the "emerging theme" and "consultation".

Most everyone regards the notion of an "emerging theme" as hype, and no doubt I will be thought cynical for explaining it, but it's tremendously important anyway. Research, of course, is about new things -- and not just individual new results or ideas, but whole new fields of research and whole new ways of doing research in a given area. New ways of doing research rarely spring full-blown from any individual's head. Rather, somebody who has been keeping up with many different research projects starts to notice a trend. Perhaps it's a previously unnoticed analogy among various new concepts; perhaps it's a metaphor that makes sense out of a range of seemingly unrelated results; perhaps it's a pattern that appears to underlie the work of several different groups; perhaps it's a method from another field that several groups have been importing into their own field and have independently found useful or necessary; or perhaps it is a widely shared dissatisfaction with the old intellectual frameworks that is now starting to take form as a new framework. If you want examples, simply look at the titles and introductions to any edited book, any special issue of a journal, or any workshop. Fame and fortune justly attach to the people who notice such things, put names on them, and gather together the people whose research appears to fall within them. These people are the shamans; their role is not to create something out of nothing, but to help the community become conscious of new understandings that have been taking form below the surface. Such people have four qualities: (1) their own research is an instance of the patterns they are noticing (unfortunately, this is usually a prerequisite to being taken seriously in the role of pattern-seeker), (2) they care enough to actually think about other people's research (this quality is in short supply, thus creating abundant opportunities for those who possess it), (3) they communicate intensively enough with other people to actually keep up-to-date with them (this is where e-mail helps), and (4) they are smart enough to notice the patterns in the first place (this is sometimes the least important factor). You can work wonders if you cultivate these qualities.

As a practical matter, you'll work these wonders through consultation. Research people, especially in academia, generally insist on being consulted beforehand on any matter that affects them. Consultation is the fundamental protocol of all academic life -- both within institutions and within disciplines. So, for example, if you have noticed a hot new theme emerging from the research in your area, you should not immediately announce a workshop or a mailing list on the topic and expect people to flock to it. (In general, never try to organize a group activity just because you think, in an abstract way, that it would be a nice idea. It doesn't work that way.) Instead, you should decide who the affected parties are and communicate with them. One way to get started on this is to write a (short or long) survey paper that describes the pattern you see emerging, puts a name on it, sketches in a sympathetic way how various projects (your own and others') seem to fit within it, explains what can be learned by looking at things this way, extracts a set of axioms or principles or methods or organizing concepts, and outlines some suggested lines of future research. Another approach is simply to write a paper that explains your own research in terms of the emerging pattern and then, as a secondary matter, explains how the other projects fit in. And a third approach is to attempt to organize a workshop or other small-scale professional meeting around the theme you've begun to articulate.

To do this, write a draft announcement for the meeting that explains its unifying concept -- the "emerging theme". Clearly label it as a draft. Then -- and this is consultation -- send this draft *individually* to each of the ten people whose participation in the meeting is crucial. Include a cover letter/message soliciting their perspectives and their guidance. (The phrase "I'd like to ask your advice" causes miracles the world over.) Ask them if they think the time would be ripe for such a meeting, and ask them if you have articulated the emerging theme in the best way. Do not present anything as a *fait accompli*. When you get responses back from these people, take the responses seriously. Modify your draft to take them all into account. Rewrite it from scratch if necessary. Get

lots of advice and really listen to it (even if you don't follow it). You will probably fail at this process once or twice before you succeed, but more importantly you'll learn what it's like to internalize other people's opinions -- the basic mechanism of socialization into a community. And remember that consultation, like most things, works much better if you have gone through the six network-building steps I've described above, at least with a majority of the people involved.

This whole consultation process probably sounds like a lot of work. Many people even regard it as a thankless sort of "dues" that they must pay to their field. This is not so. Engaging in consultation is a powerful act. It changes your whole way of seeing the world. You learn to notice the conditions that make action possible, and you become able to internalize others' thinking without giving them power over you. As a result, a whole landscape of possibilities will become visible before you -- one that most people never see. It is a good idea, therefore, to organize professional activities in your field. It does require a lot of initiative, but it does not necessarily require a vast amount of work. The key is to delegate. If you are willing to lead -- that is, to take the initiative to define, consult, oversee, subdivide, and keep track -- then lots of people will be willing to take responsibility for one piece of the larger whole. If this *doesn't* happen -- that is, if you *can't* get people to commit to narrowly defined jobs -- then that's a sign that you have misjudged how much energy really exists around the theme you have identified. Either rework that theme through another round of consultation or simply abandon the whole project and write down the lessons you've learned from it. Don't force something to happen if it just won't. Lots of good ideas will never happen; your job is to find the ones that *can* happen. When a new theme does emerge to organize the research of a community, often someone will complain that they had articulated that theme themselves some years before. Usually, however, that person had not done the hard work of talking to everyone, internalizing their perspectives, and building consensus around a particular formulation of the theme. That is what I am encouraging you to do.

Having identified an emerging theme and organized a meeting of the community around it, the next step might be to edit a book. You may not think of yourself as the sort of person who does book deals with publishers, but it's not that hard. Here is a simple method. Identify a senior member of the emerging community who is decent and well-connected, with whom you have decent rapport and who would be regarded as an honest broker by everyone involved. Approach that person and say this:

I'm thinking it be might time for an edited book about this emerging theme. Here's a rough draft of a proposal for the book. Likely chapter contributors would be A, B, C, D, and E. I'd like to propose that we edit the book together. If you can help with the diplomacy of recruiting the authors then I will do all of the logistics.

Don't use those exact words; hopefully you'll know this person well enough by now to find words that are comfortable for you. In any case, you have just signed up for a lot of work: iterating drafts of the proposal through consultation with the most important authors, dealing with the publisher and copyeditor, keeping track of all the manuscripts, sending reminders, cajoling people to offer comments on one another's draft chapters, drafting an introduction to the volume, writing your own chapter, preparing the index, managing your heavily overcommitted coeditor, and fighting the half-dozen fires that will certainly erupt along the way. It's work, but it's worthwhile. If you go through this cycle even once then you will truly understand how the world around you works. You will also have a book on your vita. Of course, you won't know how to do much of the work you've signed up for. How, for example, do you find a publisher? Asking advice from the people in your network is part of the process. If you take the initiative, and if your emerging theme has enough energy behind it, then people will be happy to help.

That being said, here is some more advice for would-be book editors. You should organize the project in a loose way, for the simple reason that one or more of your chapter contributors may flake out on you. Everyone from the publisher to the people who review your book for academic journals will insist that you should organize the book so that all of the chapters fit together to make a coherent whole, and this is a good ideal to the extent that it is practical. Don't try to organize an edited book

unless you do honestly think that the chapters will work together. But make sure that the book will still work if one or more of the chapters fails to materialize. Realize, too, that some people can't write, or can't make deadlines. One reason to build your network is that you can find out ahead of time which potential authors are good to work with in these ways, and which ones will cause you a lot of headaches for very little payoff. When you discuss the project with a publisher (or, more precisely, an acquisitions editor who works for a publisher), keep in mind that publishers only eat when they sell books. As a result, they always have a mental calculator going in their heads that tells them how many of your book they can sell. You can't trick these people, so have an honest conversation with them about how the book works as a business proposition. Who would buy it? Publishers are generally unenthusiastic about edited books these days, in part because they are less likely to be reviewed by large-circulation magazines and journals, much less newspapers. So you have to make a clear case that your project has a lot of social energy behind it, and that the topic you have identified is right on the verge of exploding into a major intellectual movement of the sort that sells books. Most academics find it hard to think in business terms about their publishing projects, so swallow your pride and let the publisher instruct you in the matter. Maybe a project or two will fail before you learn to see the world through the publisher's eyes.

When you do build your professional network and identify your first emerging theme, a voice in your head may tell you something like, "well, if you thought of it then it must be obvious; surely you are the last to know". And since the task of initiating activities such as the ones I've described can look like a steep mountain when you're doing it for the first time, you might be tempted to assume that it's not worth the trouble. You'll think, surely someone else will beat me to it. When you hear these voices in your head, pay close attention to them. They don't want you to succeed professionally. Why? Are they trying to protect you from the pain of failure? Or do they just think that you've been destined to fail since they day you were born? The fact is, if you've built your professional network, and if someone in that network already has activities under way around the emerging theme that you have identified, then you are likely to have heard about it already. Of course, as you progress with your organizing you might learn about other activities that are related to yours in one way or another. In rare cases an existing activity will render yours redundant. It happens. But much more often, the existing activities will be off at an angle from yours. In that case, you will want to have a friendly conversation with the people who are organizing them. Perhaps you will decide to join forces, or perhaps you will articulate the way in which your respective activities are complementary. (You will find that "complementary" is a very useful word.) You can then decide whether and how to redesign your activity to bring out more clearly its unique contribution.

Those, then, are some of the rudiments of intellectual leadership. (I will return to the subject later on.) Many people don't want to be leaders because they associate leadership with abuses of power. It's true, many leaders do abuse power, and if you lead then you will acquire power that you will be tempted to abuse. But real leadership does not require you to manipulate people, and a community of well-informed and confident people cannot be manipulated. So even if you can't imagine yourself as a leader, I hope that you will organize something, just once, so you'll understand how it works. Focus on articulating shared values and you'll be fine.

Recognizing difference

These concepts, I hope, further illuminate the complex structure of professional relationships within the institutions of research. As with any social system, the point is not that some infinite power imposes this structure on us from the outside, but rather that we recreate the structure ourselves every time we interact with another person. And these numerous local accomplishments are all the more remarkable given that, structures and systems notwithstanding, people really are different from one another. If you are carrying around an overly rigid view of institutions and their workings (say, for example, the view you probably got from your experiences of undergraduate education) then you might not even notice the real and rewarding work of exploring the differences between yourself and your professional acquaintances. The skills of recognizing human difference -- not in the abstract, but concretely, within particular interactions and particular relationships -- are growing more important as

research communities in all fields lose their national and cultural boundaries.

A common mistake is (usually unconsciously) to use networking skills to seek out people who seem identical to you, either by ignoring the differences, putting easy labels on the differences, or blowing the differences out of all proportion. This might have worked alright when research worlds were heavily segregated by gender, culture, discipline, research "school", and everything else, but it doesn't work now. Just about everyone is being forced, for example, to reflect on different national traditions' remarkably different ideas about the relationship between theory and evidence. And we are likewise learning to develop professional relationships with people who don't already speak the same disciplinary language that we do -- it no longer suffices to detect potential allies simply because they talk the same way. Nobody yet knows how the practices of professional networking might evolve under the pressure of these increasingly prevalent types of professional difference. My sense, though, is that e-mail is poorly suited for the initial stages of establishing a shared context for discussion between people with different cultural or disciplinary backgrounds. If this is true then my emphasis on careful mixing of electronic and face-to-face communication takes on new importance.

A problem that often arises when talking with someone from a different intellectual tradition involves "results". What counts as a "result" in your field? A theorem? A policy prescription? An experimental outcome? A newly theorized concept? As you start talking to people, you will be surprised to discover just how diverse the various fields' conceptions of a "result" can be. People who have been socialized into a given school of thought will habitually search anything they read for the specific type of "result" that they are accustomed to. Even neighboring subfields of the same intellectual tendency within the supposedly same field can fail to communicate because they are trying to discover incompatible types of "results" in one another's work. This failure of communication can be calamitous. Each side may perceive the other to be doing poor work -- or, literally, no work at all. They may even accuse one another of *hiding* their conclusions. Emotions may become strong, and serious conflict may result. In many cases the conflict will be ongoing, and (sub)fields may have developed elaborate and nasty stereotypes of one another. These stereotypes can be hard to puncture because they are expressed in the metatheoretical shorthand that each field has developed for its own discussions. The neighboring (sub)field, for example, may be said to have "no ideas", where the word "idea" has acquired a complex history of unarticulated baggage that automatically rules out anything that does not fit that particular group's ways of working and talking. Or, to take another example at random, qualitative fieldwork methods might be disparaged as "anecdotes that don't really prove anything" -- not a good way to think if you're going to start a professional relationship with an anthropologist! Needless to say, you'll want to anticipate this problem and defuse it before it damages anyone's reputation or messes up a potential relationship. This may require you to overcome your own disciplinary socialization, which has almost included a lot of taken-for-granted invidious distinctions that mark certain "others" as intellectual barbarians.

Getting a public voice

Although the institutions of research tend to focus your attention on the other researchers in your field, your research interests probably have a broader importance to society. (I realize that some parts of mathematics can't be explained to a general audience. But that's the exception.) As you develop your professional voice, I hope you will also consider developing a public voice, that is, a voice that normal people outside your research community can understand. This includes speaking to community groups, writing for newspapers and magazines, being interviewed by the media, testifying in legislative hearings, circulating commentaries to a broad audience on the Internet, or simply being able to discuss your field with normal people in social situations.

Some of these situations are relatively tractable. For example, if you announce a discovery and a science reporter asks you to explain it, you will probably be able to find plain language for it. That situation is relatively easy because it's your own personal research topic. You've promised that you'll make it interesting, a professional reporter has decided that you'll succeed, and you give more or less the same speech that you give to people informally at conferences. Even easier is when someone else

makes a discovery and you are asked to comment on it. You say, yes that person is a serious researcher, and yes that discovery sure sounds important, though of course much more work will be required before we are sure.

Or perhaps you want to start a sideline of popularizing work in your field. Unless you are a real popularization prodigy you wouldn't want to make popularization into your major line of work, because that is an entirely different and exceedingly competitive profession that requires extreme amounts of networking in entirely different worlds from your own. But writing popular works as a sideline can be lucrative, personally satisfying, and a public service, if not necessarily in that order. Stephen Jay Gould's monthly magazine columns about biology, which have been collected into a long series of successful books, are perhaps the prototype.

If you want to write these sorts of popular works, you face several sorts of challenges. One is that all of your academic colleagues believe that it's their job to help you get tenure, and so they will all discourage you from writing such works until that happens. I know of one department, an extreme case I'll admit, that actually put in writing a policy that non-academic publications will be counted against a candidate for tenure. But if you write easily, I personally see no problem of spending a day a month, as Gould does, writing that sort of thing, and if you publish enough refereed journal articles that only the crazies will hold it against you.

A second challenge is that wide-circulation newspapers and magazines prefer to publish work by people they know. The solution to this problem is actually easy: start an Internet mailing list and Web site to circulate your popular work. Your circulation will be low at first, but your work probably won't be very good at first either, so that's okay. As your work gets better, people will pass it around and your circulation will go up. If your work is good then it will definitely get circulated to the editors who should be publishing it. Part of their job is to look for new talent.

A final challenge for the popularizer is simply coming up with a steady stream of topics to write about. You can probably come up with a few topics just from your own research, but if you want to write regularly then you will need to cultivate the right sort of intellectual life. Popularization is really for people whose reading and thinking is not confined strictly to the latest research reports by their micro-specialized peers, but who naturally spend a reasonable percentage of their reading and thinking time ranging more widely into the deeper meanings of the field. If this kind of breadth comes naturally to you, or if you take the trouble to cultivate it, then it's particularly important that a wider audience get the benefit of your effort. The writing will come hard at first. But as you start writing regularly, something good will happen: you will find yourself spontaneously rehearsing phrases that relate the ideas to the world of a normal reader, and before long you will establish a kind of pipeline back and forth between the professional world where you present your research papers and the public world where normal curious people are concerned about the things that normal curious people are concerned about. Columns will take form almost spontaneously in your head, and you will write them down. So don't be disheartened by the difficulty of getting the process started. It will get easier.

What's really hard is when you are called upon to address yourself to different issues than the ones that organize discussion in your field. Any sphere of debate, whether scholarly or political or anything else, has an "issue agenda" (also called its "problem set"): the questions that are consensually considered to be on the table right now, and that everyone is expected to address themselves to. The people in your field probably have a consensus about which issues are important right now, and you have probably learned how to talk in a way that addresses those issues. Problems arise when the broader public, or more accurately the pundits and politicians in the media, have a different issue agenda. A reporter will call you on the phone, perhaps having gotten your name from your university's PR office as an expert in a certain field, and will expect you to address the issue that happens to define public discourse. You will find to your surprise that you aren't able to speak to that issue, for the simple reason that your day-to-day professional life has rarely required you to do so. You might select from your repertoire whatever standard spiel falls in the general vicinity of the reporter's question, only to be told, politely or not, that you're heading off at some weird academic

angle to (what the reporter regards as) the real issue.

The solution to this problem is, first, to understand it, and second, practice. You simply have to figure out what the issue agenda is and come up with something to say. As a voice in the public sphere, you will be expected to have a "message": a single line that responds in some way to the issue agenda and that epitomizes the larger collection of things that you have to say. (My own "message", in case you happen to care, is that radically improved information technology is causing the ground rules of every institution in society to be renegotiated.) You should also be prepared to answer some standard questions, most particularly what implications your argument has for public policy. This would seem like an obvious question, since that's what the sphere of public debate is all about. But unless your research area is directly related to public policy, your professional training has taught you how to address research agendas, not public policy agendas. So give the question some thought and rehearse some answers before you get caught flat-footed.

It helps if you understand how the public sphere works in practice. Political philosophers often have an idealized picture of the public sphere in which citizens get together and engage in deliberation, or in which public intellectuals spin an elite sort of public philosophy. This idealized picture is almost entirely false. In reality, the public sphere is itself a sprawling professional network with its own meetings, gossip, rivalries, and the rest of it. At the center are journalists, by which I mean not just day-to-day working reporters but a broader class of professional writers who make their careers largely by building extensive networks within the field area they report on. Many of these figures go on to become semi-intellectuals in their own right, for example by publishing serious books or starting institutes. Also at the center are foundations, many of which specifically intend to shape public debate by building networks and publishing reports that are designed for maximum coverage in the media. Some foundations regard themselves as nonpartisan, and spend their money flying people to resorts to debate the issues of the day. Others are aggressively lean and mean think tanks that exist to argue the positions of their funders. If any money is at stake then the players will also include lobbyists and other professional advocates.

Scholarly researchers such as yourself are definitely part of this picture, and do get invited to the talking shops where the real work gets done. As you establish a public voice in your area, you may get swept into this world. You will develop a network outside your research field, and you will have to decide how much time and effort you want to invest cultivating it and pushing your own public agenda through it. Understand that this is not the research community whose rules I have been explaining. Even though most of the people are decent and serious, it is a different world that runs on its own rails. They don't use formal peer review, methodology is often weak, sophistry is widespread, sound bites are important, and the essence of the game is shaping the evolving issue agenda. Because everyone is assumed to have a public persona, you won't be sending people your publications unless someone asks for them. On another level, though, the similarities to the research world are strong: you succeed by building networks, the glue that holds relationships together is the values that you share with people, and the way you get things done is by articulating emerging issues within the collective thinking of that particular network.

Last comment. Although normal rules of etiquette will largely suffice for your dealings with the world of public debate, it will help to keep in mind that people in the non-profit sector (meaning, outside of universities and corporations) who are funded by foundations have a very fragile existence. If networking is important for your career, it is ten times more important for these people. The way they feed their families is by defining an issue, building consensus with the relevant foundation people, and finally being invited to write a short grant proposal that gets them the money. This is a long-drawn-out process, and it requires continual upkeep. When you are dealing with such people, therefore, you should take special care not to be seen as encroaching on their issue-territory. Being an academic, you may not feel like you are competing with them. But they don't know that. So even a stray comment about how you're interested in a certain topic, or wrote a comment on a certain subject, can be misinterpreted as announcing an attack on their foundation funding. Your life is easier than theirs.

A final point

Before you get too comfortable with the relatively advanced skills I have described in this section, I hope you will take a moment and remember what it was like not having a clue about professional networking. Fix this memory firmly into your mind, and bring it back any time you're working around junior people. Cut them some slack, explain to them what's going on, and hand them a copy of "Networking on the Network".

SECTION 7. Networking and Your Dissertation

As a graduate student preparing for a career in research, you have two jobs: (1) do some good research, and (2) build a community around your research topic. These two jobs may seem to conflict with one another, given that research is generally a solitary activity (or something you do with the local gang in your lab) whereas networking is a social activity, something you largely do away from home. The demands of your thesis committee may seem so immediate and crushing that you let your community-building slide. Or your thesis advisor may be locked into the old patriarchal view that you will succeed professionally because of your thesis committee's contacts and not because of your own effort. I want to offer another view: you are in charge of your career, and the best way that you can *take* charge of your career is to build a community around your research.

What is the role of your dissertation in this? After all, many people are mystified that graduate schools expect their students to spend years preparing an enormous document that will get stuck on a library shelf where maybe five people will ever read it. (Speaking of which, you should be one of the five: go to the library and look at the structure and language of some dissertations, just so your goal will be concrete in your mind.) I do realize that many people go on to chop their dissertations into journal articles or revise them into books, and in some fields one prepares a dissertation by publishing several articles and then binding them together. I have no problem with any of this; in fact I think that the word "dissertation" should be replaced by the word "book". Nonetheless, a narrow focus on publication misses most of the point of writing a dissertation.

Here is the profound fact: when you produce a dissertation, the most important thing you produce is yourself -- that is, yourself as a new member of the research profession generally, and of a particular research community. Becoming a new member of a research community is not simply a matter of doing some research, nor is it simply a matter of getting a publication accepted by a journal. It's much deeper than that: becoming a member of a research community means weaving yourself into a web of relationships and a dialogue. Remember all of that work you did in the library to identify people whose research was related to yours? Those people are going to become your professional colleagues. You are accountable to them: you have to give them credit for their work, and the institutions of research will turn to them when it's time to evaluate your work. You are going to be engaged in a conversation with them: the papers you write will be, among other things, responses to what the people before you have written. As you read those people's work, and then later as you converse with them, their voices will take up residence in your head, and your voice will take up residence in their heads.

Establishing this very complex set of relationships to this enormous cast of characters is not easy. It takes time and practice. And that is what your dissertation is for. Your dissertation should of course report important original research. But just as importantly, it should represent in great depth how that research is related to all of the relevant research that other people have done. It will represent those relationships in obvious ways through your citations and reviews of related literature. But it will represent them in a hundred more subtle ways as well. Certain words will have acquired specialized meanings and connotations, for example through their association with particular authors and their views, and by using those words in certain ways you will define yourself in relation to others who have used them (or not used them). People whose intellectual background and assumptions differ

from yours will probably misinterpret many passages from your first draft, and one purpose of getting comments and making revisions is to anticipate those misinterpretations and search for language that will convey your meaning to all the diverse sorts of people who will hopefully be reading it.

In short, you are rehearsing a professional voice. This is hard work, and many people who are developing a new professional voice will feel that they are being torn apart by the huge variety of seemingly incompatible demands that come from every side. After all, you will be joining a research community in which people disagree with each other, in which people have read things that you couldn't possibly have time to read, in which everybody holds assumptions that they have not articulated fully, and in which some people are hard to get along with. And yet you are supposed to talk in some way that takes this whole buzzing confusion into account while simultaneously expressing what *you* want to say, in the way that *you* want to say it. It can be done, because innumerable people have done it. It takes time, and iterations and revisions, and feedback from professional colleagues. Reading and rereading those colleagues' written work is a good way to anticipate their thinking, but it does not substitute for personal contact. So make those contacts. And as you build your community, and as you take seriously the comments you get on drafts, your voice will evolve. You will no longer have the sense of being pulled apart. You will be able to identify the emerging themes that knit your work into the community, and that start to make the community seem unitary. Your ability to articulate those emerging themes is a sure sign that your project is part of a community, and that your audience will understand what you are talking about. It means that you have established a deep underground continuity between your own project and the projects of your professional colleagues. It also means that your project will be noticed, and that it will not fall through the cracks. This is the goal. Along the way to this goal, you will of course make a couple of mistakes. You will say some dumb things. You will get a bit of criticism. But that's life. When the bad stuff happens, make mid-course corrections and carry on. Everyone else has been there too.

It helps if you understand the structural reasons why graduate school can be so difficult. In passing through graduate school and joining the research community, you are making a transition from one social identity to another, and from one professional persona to another. In a sense you are becoming a new person. But you face an irreducible chicken-and-egg problem: you can't do research without being a member of a research community, and you can't be a member of a research community without doing research. This chicken-and-egg problem is typically at its worst in the middle phase of graduate school, after you finish your required coursework but before you narrow down a dissertation topic. During that middle period, the whole world can seem chaotic. All of your candidate topics will seem impossibly gigantic. It might feel like you are pretending to do research rather than really doing it. You might be seized by paranoia about people who will persecute you publicly as soon as you try to present your work. You might be seized by the delusion that someone else has already done your project. These are common feelings; understand that they result from the structural situation you are in, and not from your own personal failings or (necessarily) the failings of other people around you.

Once you understand the structural chicken-and-egg problem, you can set a strategy for overcoming it. Start by looking for ways to watch the professional world in action. Ask your advisor for suggestions. You might sit in on a program committee meeting, serve as a referee for conference or journal papers, coauthor a survey paper, host some visiting speakers, have coffee with a visiting fellow in your department, or volunteer to help with the logistics of a conference. These tasks require labor, of course, some of it mundane. But they will also help you become comfortable with the rhythms and styles of your new professional community.

More fundamentally, though, you will overcome your chicken-and-egg problem through iteration: starting small and then working back and forth between the chicken side (defining your topic, rehearsing your voice) and the egg side (building your network, getting feedback). That's why you should start building your network just as soon as you have a conference paper to present, but no sooner. You needn't pursue a hundred network contacts on the basis of that first small paper, and you probably shouldn't. Contact a few especially promising individuals, just to get some practice. Then work up to more ambitious public presentations of your work and more ambitious levels of

socializing. If you follow this plan then your dissertation, once it is finally done, will be your masterpiece: your proof to yourself and others that you finally have a professional voice, and that you are finally knitted into the professional network that you want to join.

Here is another way to understand it. Many beginning scholars experience a conflict between their own personal interests and the demands that the institution places on them. They feel that the politics of their department or discipline prevent them from pursuing the ideas that they care about, or that funding imperatives push them toward boring research topics that are geared to someone else's agenda, or even that the research world in general is cynical and filled with self-interested poseurs. I'm not here to tell you that the research world is a thoroughly beautiful place. It's a human place, with all of the virtues and vices that come with that. What you have to understand, and you have to trust me about this, is that most of the bad feelings that I have described are simply consequences of the structural process that you are passing through. If you really do your homework, and if you really do your networking, and if you really take the trouble to study and internalize the ideas and voices of the researchers in your field whose work you respect, and if you really get out there and become involved in the activities of your profession, then eventually that inner sense of a conflict between yourself and your environment will dissipate. The great thing about the research world is that you get to choose your environment, which consists in large measure of the members of your network. Of course, this also means choosing the topics you work on, the language you speak, the values you embrace, the dialogue you participate in, and so on. You choose the whole package. You make it. You build it.

And as you do so, you and your environment will become aligned. Internalizing all of those other people's voices will change you. The changes will happen almost automatically, and for the most part you won't even realize that it's happening. You may not even remember the time when you felt that your research interests were incompatible with the professional environment around you. Of course, you will not be completely free, the way you'd be if you had a million dollars. You will still have to build networks, write grant proposals, and so on. But you will be woven into the institutional structures that make all these things possible, so that doing them will be the most natural thing in the world. That is what your dissertation is for. In fact, your dissertation is, in a paradoxical way, a time of great freedom. It is the moment when you choose *where* in the great sprawling fabric of the research community you are going to weave yourself. So take the time to read widely, reflect deeply, talk to lots of people, and choose the topic that will propel you into the life you want, rather than the life that someone else might stand ready to choose for you.

This understanding of the dissertation suggests strategies for dealing with several common problems that arise with dissertations. I will describe three of them, in the beginning, middle, and end of the process.

Beginning. Graduate students who are writing thesis proposals often try to bite off too much -- their proposals describe a life's work, not a couple of years' worth. Paring down the initial proposal to a manageable size can often be a dispiriting process; it feels as though you are surrendering your ambitions and ideals, step by step, until you have compromised everything that was valuable about your original vision. I have seen this many times. The underlying problem is a misunderstanding of the way that research is evaluated. People will evaluate your research partly for what you have accomplished: which theorem you've proved, which ancient city you've discovered, which grammatical patterns you've explained, or whatever. You do need to accomplish something, of course. But more fundamentally, people will look at the methods by which you did it. They will ask not only "what did s/he do?" but "what direction does s/he point?". If you prove a big theorem by means of a tortured calculation that provides no useful guidance for proving other theorems then you won't get a lot of reward for it. Your ideas and methods should generalize. They should map a previously unsuspected territory for research. This matters in job-hunting terms, since your prospective colleagues will want to know whether you have a practicable research program laid out. So when you write your dissertation proposal, don't assign yourself an infinite task. Instead, ask yourself what fragment of that task would make a relatively self-contained project, and would also provide a clear illustration of the more general project that you see ahead of you. Present your thesis study as an

example, a case study, an illustration, of the more general theme that you have identified, and take care to draw out and explain the generality of that theme.

Middle. In writing a dissertation, and especially when writing a talk about the dissertation research, one often encounters points that need to be stuck in the introduction or conclusion. Terms need to be defined, methodology needs to be explained, objections need to be anticipated, patterns need to be identified, distinctions need to be made, and unanswered questions need to be acknowledged and posed as problems for future work. Of course, everyone tries to assign these points to a suitable place when preparing an outline. But many students find that the points just keep coming, as if a volcano were continually erupting in the middle of the thesis, causing a disorderly mass of troublesome junk to flow out toward the edges. The sheer mass of this junk can be overwhelming, and it can seem as though the whole thesis is going to turn into a hypertrophied introduction and (to a lesser extent) conclusion, with the actual substance of the work left as an afterthought. You should plan for this process, and realize that it is crucial for the formation of your professional voice. What's happening, believe it or not, is that your mind is reorganizing itself. You are integrating all of the many voices that will lay claim to your topic, and you are sorting out a conceptual framework for your research program that addresses all of those many voices in a coherent way. You may not think that you are engaging with other people's voices, since the depths of thesis-writing are a very personal, even isolating process. But if you are at the point of writing a thesis then you have already done a great deal of reading, and so you are familiar with established patterns of thinking on many subjects. Those are the voices that you are integrating at this point of the process.

End. Writing a dissertation is like living at the bottom of the ocean: the project itself is so large, and the process of imposing intellectual order on the project and on the thesis itself is so enormous, that you become accustomed to a kind of total immersion that is unusual in other areas of life. This is mostly a good thing, or at least inevitable. A dissertation is a big accomplishment, and if you can finish your dissertation then everyone knows that you can do research on your own. Nonetheless, students often get into trouble as they resurface from the bottom of the dissertation ocean -- a kind of intellectual bends that can be painful and confusing if you don't understand it. When you are living down there amidst the infinite details of your dissertation project, you can forget that everyone else isn't living down there with you. As a result, you can lose your ability to explain your project to other people. You will begin your explanations at the fourth or fifth step of the argument, leaving out all of the premises that explain what the project really is, why it is important, what all the worlds mean, and how the whole thing fits into something that your audience can relate to. You may never have learned to explain your project to anyone outside your research group, and as a result you may find yourself confronted with basic questions that you can't answer. A well-run research group helps dissertation authors to return to the surface of the ocean in a controlled way by offering them constructive advice about the sorts of questions they will get in the outside world. But even the best research group cannot predict these questions in the necessary detail. This is one more reason why it is important to keep building your network, even as you deal with the pressure of writing and deadlines.

My conception of your dissertation as an occasion for professional web-weaving may sound different from most other people's. But I think that my conception is the right one. A much more common approach is to keep your head down, staying in the lab and the library until your dissertation is done, and only then making contacts with others in your field. In my opinion this is a terrible strategy. It works only if your dissertation advisor is doing all of your networking for you, and only if your dissertation advisor is capable of anticipating and telling you about all of the reactions that everyone in the relevant world is going to have to your work. Making yourself dependent on your advisor in that way might actually suffice, but it is not something to count on. Unless you have already joined the research community, which you haven't, you cannot yet be certain that your advisor is sufficiently talented at networking and communicating. By all means develop a good relationship with your advisor, but use that relationship to help you build your own community. If you don't have a community then you can't be confident that anybody will understand your work, or that anybody will care about it. And without that confidence, you will probably not be able to get a job.

SECTION 8. Academic Language

A new graduate student, you face a whole series of institutional problems that are hard to explain to someone who hasn't already mastered the workings of the institution. One problem is endemic to human life in general, namely that you're always entering conversations in the middle. You show up someplace -- a new job, perhaps -- and the people there already have a conversation going on. They probably have quite a few running conversations, and they have probably accumulated a big network of shared background assumptions. Many words have probably acquired specialized local meanings whether the people are aware of it or not. Meanings will have been shaped by long-past events (what anthropologists call "critical incidents") and political fault-lines that nobody ever needs to mention. Even an innocent word choice can place you on one side of a conflict or another. These phenomena need not be spectacular or pathological, but they are certainly universal, and they can seriously confuse a newcomer.

One way to understand academic language is that this entering-a-conversation-in-the-middle effect is amplified about twenty times relative to any normal setting. That's because academics are paid to say things that are new, which is very hard, so that they are continually torquing their language -- usually for good reasons, but of course not always. As a result, you can be forgiven if you feel like you are walking around in a linguistic minefield. What is more, the language that you will encounter in academic settings is a kind of capital. That is, the ability to use the language is a valuable commodity. Talking a specialized academic language is what one gets paid to do, or at least it's a precondition of what one gets paid to do, which is hopefully to say something, and so it is understandable if you feel obligated to learn the languages you hear.

As a teacher, I find these things frustrating. I encounter students who feel compelled to learn the latest fashionable jargon whether it serves them or not. Usually I demur. My first question is always: what do you care about? Once we answer that basic question, we can go looking for suitable conversations to join. But graduate students are not stupid, to the contrary, and if Foucauldian vocabulary is valuable capital then they can spot that fact a mile away. They are intimidated by the job market, and they intend to get the capital they will need to get a job. I don't mean to overgeneralize. Everyone is different. Still, I often find myself saying, no, you really don't have to learn to talk that way unless you intend to join a conversation in which everyone else talks that way. But that's not how it seems when you're new and you have to graduate in five years and you don't yet have a differentiated sense of the terrain. Who's really right?

As an example of the train-wrecks that these phenomena can cause, let us consider the famous problem of importing French philosophy to the United States. The French think very highly of philosophy, and they have an exceedingly centralized and hierarchical meritocratic system for identifying and training the best philosophical talent. Even though they take their philosophical training system for granted and even harp on its defects, it nonetheless works very well. True, most of the really famous French philosophers are consigned to the margins of the system. (See Pierre Bourdieu's entertaining preface to the English edition of his "Homo Academicus".) But they exist, which is more than we can say for the other systems. What this means is that French philosophers assume an audience that is widely read and deeply sophisticated, and that will know and recognize all of the precursors of their ideas.

This system may sound bad to American ears, but it works: it enables these authors to get a great deal of intellectual leverage from the background of knowledge that they share with their readers. It is the kind of pressure-cooker that, as Randall Collins suggests in his stupendous book *The Sociology of Philosophies: A Global Theory of Intellectual Change* (Harvard University Press, 1998), is required for any great philosophy to get done. It is the ongoing-conversation effect multiplied by fifty instead of twenty, and its decline is probably why (so far as anyone can tell) no great philosophy is being written right now. To get an idea of what I mean, have a look at Mark C. Taylor, ed, *Deconstruction*

in Context: Literature and Philosophy (University of Chicago Press, 1986). It is a scholarly sourcebook of the precursors of Derrida's method of deconstruction, and it is a revelation. Derrida suddenly seems not like something from another planet but like an incremental advance beyond a whole series of people like Levinas, Bataille, and Blanchot. Now, serious specialized scholars in the United States certainly understand this. But it takes real work to become that serious, and most people, not having been brought up in the French system, will never have the time.

Now pick up some French philosophical texts and move them to another country, such as the United States. It is a notorious fact that some American scholars have copied the style of a Foucault in a superficial way, and now we're in a position to understand why this causes so much trouble. Academic discourse only works if it's part of a dialogue. In France, philosophical dialogue works because everyone knows the background. Individual authors can develop highly personal writing styles without disrupting the conversation. Some of those writing styles have more of a point than others, and I've chosen Foucault as my example because his own style (prior to the relatively plain language of his last few books) was much less motivated than that of the others. When Americans copy these styles, disaster often results because the conversation is broken. Readers in the American context generally cannot see the language as part of a densely organized dialogue, so the whole thing locks up. The dialogue loses its dynamic, forward-moving quality, and everyone falls into a kind of intellectual autism, a black hole from which nothing can emerge.

This is not to say that Foucault, for example, has had no beneficial impact on American scholarship. Scholars who employ the ideas without copying the style often have useful things to say. An example would be John and Jean Comaroff's multiple-volume anthropological history of the Tswana in northern South Africa, "Of Revelation and Revolution" (University of Chicago Press, 1991 and 1997). Their research is influenced by Foucault, but you wouldn't know it to read their prose, which is somewhat mannered to be sure but for their own reasons and not because they are copying anybody. Instead of falling into a solipsistic vortex of writing style, they have engaged with the ideas and digested them into their own thinking, along with everything else that they have engaged with, which is a lot.

There is one final reason why people in academia, including graduate students, often feel compelled to acquire specialized languages that are not necessarily suited to their own projects: academic languages exhibit network effects. Just as people around the world invest in learning and speaking English because so many other people already speak English, likewise the theoretical vocabulary of a particular author can become the de facto standard of conversation in a certain field. And in case you think this is just an artefact of the fashion-ridden humanities, you should know that mathematics is one of the fields where it happens most furiously. A mathematician who invents a new formalism (what they call "machinery") will be forgotten unless other mathematicians use that formalism to prove theorems of their own. Often a variety of formalisms are available that do generally the same kind of work, one way or another. Each mathematician has an incentive (not necessarily overriding, especially when the choice of machinery makes a major difference in the results one can obtain, but still significant) to use the same machinery that everyone else is using, precisely for purposes of compatibility. In this way the development of mathematics is path-dependent, with some well-promoted or centrally-networked authors defining the basis of subsequent development in their fields, while other authors retire in obscurity. I don't mean to disparage the mathematicians' culture, which is perfectly nice. It's not about anyone's human qualities. Network effects happen whether people are elbowing one another or not.

The same thing is true in many other fields. Once Foucault becomes the vocabulary of choice for talking about the social construction of the body, for example, people will use Foucault-speak for that purpose even though some other author's vocabulary might be better-suited to a particular purpose. And just as newcomers to a field of mathematics frequently sledgehammer a problem with machinery that is too general to reveal its inner logic, likewise newcomers to social theory will use five-star Foucauldian jargon to say things that could be said using the admirably plain language of John Commons or Anselm Strauss. Outsiders will mistake this for academic empty-headedness, and that's

sometimes what it is. But at least as often it's more complicated. And the humanities and social sciences get a disproportionately bad reputation for doing it because outsiders haven't the slightest clue what the mathematicians are saying, whereas they think they have a clue what the others are saying.

So that's what happens. As a graduate student, you are walking into the middle of a complicated set of dynamics that nobody ever explains. It's little wonder, then, if you feel compelled to master arbitrary codes that your career seems to depend on. It's that structural situation that I am interested in, not the properties of graduate students themselves.

Because you are not yet in a position to see the inner logic of professional community, you may find yourself wanting to fasten onto formal aspects of the process: politicking your thesis committee, passing exams, mastering jargons, and so on. You can't ignore that stuff, but you can get it into proportion by focusing your attention on the communities you want to join. Needlessly esoteric academic languages can give you the wrong idea: they portray research as a matter of becoming someone else, rather than becoming a professional version of yourself. They make it seem like becoming a research means acquiring someone else's voice, rather than developing your own. And they exaggerate the degree to which success in research depends on making yourself accountable to other people's agendas, rather than actively seeking out a community of interlocutors whose agendas can be brought into productive dialogue with your own.

The institutions of research are hardly perfect. But I think that their imperfections would be best alleviated not by blowing them up and placing them under the power of some extraneous authority, but rather by systematically teaching graduate students the things that I am saying here. Owning and applying a powerful model of the institutional dynamics around you is where sanity begins, and it is the best way to dissuade people from the misguided strategies that reproduce institutional pathologies rather than dissolving them.

SECTION 9. How to Get a Job

Networks and job-hunting

The world is full of books about getting a job, and most of them are preoccupied with the formal aspects of the process: learning about job openings, filling out the paperwork, giving a job talk, and that sort of thing. Those formal aspects are important, but you will completely misunderstand them unless you understand the substance of the process: relationships and community-building. Get used to a deep intuition: the right way to get a job is to build a network. Once you build a network, formal things like jobs just happen. A network is not only a list of people you happen to know, like points that you score in a video game. A network is a circuit through which things flow: ideas, energy, dialogue, information, favors, and so on. Being in dialogue with the people in your network means that you have identified values that you share with them, so that you say "we" and "us". You have chosen the members of your network precisely *because* of the values that you share in common, and you have taken the trouble to identify those shared values and to get a running conversation started that is founded on them. And in the process you have changed: you have drawn out and articulated parts of yourself that may not have had any words before. It's still you, but it's a version of you that is defined in part by its relationships to other people. If you have chosen those other people badly then you will be unhappy with your new self. But if you have done your homework and chosen wisely then you will be thrilled to death.

And this is where jobs come from. Among the good things that flow in professional networks are things related to jobs: the official public information about job openings, the inside scoop about job openings, the informal invitations that enable you to meet people before you have to deal with the formalities of job openings, the postdoctoral fellowships that keep you going until you identify the job

openings you really want, and so on. If you have really built your network, then it will seem like the most natural thing in the world for this good stuff to flow into your mailbox every day. It takes time and effort to build a network, but this is the payoff. Having a member of your network on the hiring committee makes a big difference. The effort that you've invested in articulating shared values will help that person to articulate to the rest of the committee what the job should be about. The effort that you've invested in communicating your work will help that person to explain you to everyone else. The effort that you've invested in commencing a dialogue with that person will be the first installment on your effort in commencing a dialogue with everyone else in the department. But don't think of it as, "if I get to know this person then maybe I will get this job". That's fake and it doesn't work. Get to know people because you respect them -- because you have some shared interests and values that you want to develop. Then just believe that good things will flow from that, someday, somehow.

Many people refuse to believe all of this. They look at me like I am stupid and they say, "but the job market sucks" or "but it all comes down to power" or "but I'm marginalized because I'm this or that". People who believe such things are setting themselves up to fail; they are rehearsing their excuse. Yes, the job market is real; yes, power is real; yes, discrimination is real. But if you believe that those gigantic abstractions are the fundamental and immutable reality of the world, then you will make that belief true in your own life. In encouraging you to work from a more positive set of beliefs, I am not saying that your failure to get a job, if that's what ends up happening, is your own fault. But I *am* saying that your lack of a job *is* your fault if it's something that you chose, and if you go around saying, "such-and-such gigantic abstraction means that I'll never be able to get a job", then you are choosing not to get a job. Here is the truth: no matter how bad the job market is, no matter how bad the power deal is, no matter how much discrimination there is, the thing to do about the problem is to follow my advice and build yourself a professional network. Lots of people out there share your values, including people whose lives and backgrounds are otherwise completely different from yours. You need to find those people and establish relationships with them.

Job announcements

Now that I've gotten my lectures out of the way, how do you get a job? Let's assume that you have been building your network, and that you have been presenting papers at conferences, and that you have been making your work available on the Web, and that you have engaged in other activities that make you and your work visible in your field. Let's assume, in other words, that you have done the first 90% of the work. The last 10% of the work is the formal part, and it starts with the job advertisement. Given that you know so many people and hear so much useful information by e-mail, you probably know about most of the jobs before they are advertised. But you won't know about all of them, so join professional societies and study their job-posting bulletin boards, which might be published in the society's newsletter. Or look in a publication such as the *Chronicle of Higher Education* that publishes large numbers of job ads. (The *Chronicle* works as a business matter because affirmative action laws require universities to publicize jobs widely. This is good.) It is a good idea to study these ads a year before you go on the market, just to get a sense of them.

When you do read the ads, you will find that most of them are written in Martian: the people seem to want someone whose skills come from a completely different disciplinary background from yours. This is not a cause for panic. One reason to build a professional network is that you will learn to speak different languages. When speaking with a person who speaks Martian, try to explain yourself in Martian as well as you honestly can. Of course you won't really be speaking fluent Martian, but you'll be meeting your interlocutor halfway. (The secret to speaking Martian, by the way, is not to use a lot of Martian words that you don't identify with. Instead, articulate in plain language, on an intuitive, everyday level, the key insights of the Martian worldview, and then frame your ideas in relation to that. You'll be speaking Martian without the jargon, and the Martians will like it.) Having thus built a network that includes people whose language is different from yours, you will be less shocked when it's finally time to go on the job market. You'll have come up with ways to explain yourself and your work in Martian, and you will know how to apply for a job ad on Mars. Of course, you will have to decide whether you *want* to work on Mars, but the time to decide that is after you have a sheaf of job

offers in your hand.

Which jobs should you apply for? All of them. Having impossibly many interviews or offers is an easy problem to solve. Your real choice is how much effort to put into applying for each of the available jobs. It is possible to expend a huge effort applying for a job, and so you need a sense of priorities. If you have built a network then it should be easy to figure out what your priorities are. Most likely the jobs you most want will be in the departments where you already know people. Find out about those jobs far enough in advance that you can buy your friend a social beverage, say the magic words, "can I ask your advice?", and ask about the real deal with the job. Should I apply? How do the politics work? Is there a strong consensus about the definition of the job, or are there factions, or is it genuinely open? Which members of the department will I most need to connect with? What else should I know? What should I emphasize in writing the cover letter on my applications? Are you on the search committee? Who else is on it? Don't bother asking your friend about internal candidates for the job, however, since you can't do anything about them and you'll just waste time with obsession and gossip. Remember that your friend just has one point of view. Your friend might be misinformed or preoccupied with some minor grievance, or may simply not be perceptive. Ultimately you have to use your judgement about what to believe.

You can learn more details about the available jobs in other ways. Your friends and thesis committee members have their own networks, and can pass along reputations and other useful information. You should certainly look at the department's Web site. Get a list of the faculty, figure out which ones are closest intellectually to yourself, and hit the library. Individual faculty may have their own home pages, but online materials are less important than published books and articles.

Applying

Now it is time to apply. I will explain how to apply for a faculty position at a research university because that is what I know, but I expect that the broad outlines of my explanation will apply elsewhere. Some positions require application forms, but most job ads will simply specify what you should send: a cover letter, a vita, publications, recommendations, and that sort of thing. If the ad specifies a deadline, you should certainly try to make the deadline. But even if the deadline has gone by, apply anyway or at least ask whether applications are still being accepted. They want the best candidate they can get, so they will probably not insist on formalities.

The most important part of your application is your cover letter. If nobody has explained the purpose of the cover letter, by all means ask. The customs vary, so I cannot give detailed instructions. The general idea, however, is that you write a formal letter, two or three pages, to the chair of the department's search committee. (If the job ad does not provide this person's name, call the department office and ask for it.) Start by saying that you are writing to apply for the job that was advertised in such-and-such a venue. State precisely what job you're applying for (e.g., "the assistant professor position in the Department of Veterinary Dentistry at the University of the Witwatersrand", being careful to spell everything correctly and extra careful that you don't mistakenly mention the name of another school that you happen to be applying to). If you have discussed the job with any members of the department, say so. If the job ad specifies formal requirements for the job (e.g., having a PhD), then be certain to state that you satisfy the requirements (assuming that you do). Then tell your story. Expect to throw this letter out and rewrite it at least three or four times. Really. Don't get lazy and just send out the first draft because it seems good enough. Assume that your first couple of drafts stink and need fundamental rethinking. Get feedback from your committee members and close professional friends.

Your goal in this letter, as in the entire process, is to articulate a clear case for the fit between yourself and the department where you are applying. The raw materials for this story are the research that you have done, the larger-scale research agenda that your dissertation was part of, the kind of job you are looking for, the attributes of the department that make it a good place for you to pursue your research agenda, your teaching experience and specific details of your commitment to teaching, and the

particular individuals in the department whose work is related to your own. It needs to be the best honest version of your story; don't spin or exaggerate anything, because it's wrong and you'll get caught. When applying to your top five choices, strategize each letter pretty much from scratch; then draw on the best pieces of those letters as you prepare a more generic letter that you can vary slightly for the other places. When applying to research-oriented universities, emphasize research but also discuss teaching; when applying to teaching-oriented schools, emphasize both and then expand on the real-world challenges and opportunities that graduating students in your field will face -- and how your specific background and skills make you the right choice for a department that wants to take the lead in this new environment. Emphasize the future as well as the past. Your letter must be extremely well-written. The prose should be clear and vigorous without being bombastic or arrogant, calm and polite without being obsequious or weak. Get rid of commonplaces, cliches, empty formulas, shallow fashion-following, fake boasting, and emotional manipulation. Moderate the jargon. Get to the point. Get a good writer to copyedit it for you. Format it in a professional-looking way. And print the final version on good paper. Your letter should be your best representation of yourself and your plans for your career.

Many people find this letter difficult because they are caught up in a mental state of being desperate for a job. "I'll take anything!", they are thinking, and so they feel driven to write a letter that conforms to (their fantasies about) what the people want, rather than a letter that genuinely tries to articulate the two-way fit between themselves and the department that they are applying to. For example, if the job ad specifies that the applicant should be able to teach topic X, these desperate people might tell some twisted story about how they can teach X, even when it's not true. This is not a good idea. Of course you are not going to present a unilateral, take-it-or-leave-it kind of deal to the people. Rather, you are going to draw on your experience of talking to different people in your network. All this time you have been coming up with lots of different honest ways of explaining yourself, and in your cover letter you should explain yourself in the honest way that is the closest fit to the people who are reading your letter. Maybe it will not feel like a precise fit, but it's better to be honest and confident and persuasive than to make something up. If you really believe what you are saying, then that will come through in your letter. You don't know whether the specifications in the job ad are set in stone. For all you know, they wrote that ad without thinking very hard about it, and in fact the job is still basically undefined. When you come along, sounding much more interesting and up-to-date than their boring ad, they will want you rather than the hundred clones who conformed to the boring expectations they had set up. This is the truth: if there's no honest story about you that fits precisely with the specifications in the ad, then your best strategy is to tell the honest story about yourself that fits best, even if it doesn't fit perfectly, and then let it go. If it's going to happen then it will happen.

In applying for a job, you may find yourself preparing a vita for the first time. A vita is the research world's equivalent of a resume. It starts with your name and contact information, and then it details your educational history, publications, teaching experience, and other professional involvements. A vita differs from a resume in an important way: whereas resumes in the corporate world are filled with puffed-up language that hypes the individual's past job experience, a vita is more like a database entry -- just the facts. You are going to explain your background and future plans in your letter, not in your vita. The format of a vita is not especially standardized, but you can look at your thesis advisor's vita and model yours on that. In any event, make it neat and professional. And do not include items that aren't related to your public, professional persona, for example information on your personal life (e.g., family or hobbies), personal references (as opposed to researchers who can write about your professional work), seminar or class papers (as opposed to conference and journal papers), or technical reports in which you are not primary or second author.

Applications for research and teaching jobs also require letters of recommendation from established researchers who know your work. Practices differ; in most cases your recommenders will send their letters direct to the department that you're applying to, but some schools want you to arrange for letters at the time you apply, where others prefer to be given recommenders names so they can solicit letters only from candidates who they are considering seriously. If the job ad does not explain what they want, go ahead and ask your recommenders to send the letters. Asking someone to write a letter

for you is a serious matter. The ideal letter-writer has two properties: (a) knows you and your work (and in a positive way), and (b) is known to the people who will be reading the letter (and in a positive way). If your field is relatively fragmented, or if you have not been doing your networking, then these two properties might trade off. Most departments will want roughly four recommendation letters for an entry-level job. (For high-level full-professor jobs, as many as twelve letters might be required.) Line up your letter-writers a few months before you send in your job applications.

When it does come time for your letter-writers to write their letters, you should try to make their lives easier. First of all, you should tell them precisely whom they should send the letter to (as with your application letter, this should ideally be the chair of the search committee), and the deadline, and the complete address. (This seems obvious, but when the time comes you will have a million things to do. I'm tell you so you don't get sloppy.) Also make sure that they have an up-to-date stack of your papers (including the ones you wrote for their courses), chapters from your thesis, your vita, and other raw material. I also recommend that you offer them a set of bullet points that they can draw on -- for example, a concise statement of the intellectual accomplishments of your thesis, the topic of the research that you're planning post-thesis, your teaching history, and the activities that illustrate your potential for intellectual leadership. Don't try to evaluate your work; just provide them with the factual basis that they'll need to supply their own evaluations. If they don't want the bullets then don't push it.

Practices for writing the letters themselves are fairly personal and vary a great deal. Don't worry about what the letters contain; you will probably never see them (at least those are the rules), and you probably can't do anything about them anyway. But to provide some kind of intuition, let me explain how I write such letters myself -- it's the method that I learned from the guy who supervised my master's thesis. First of all, I definitely ask for a set of bullets from students, and I am struck that I must often ask two or three times until I get the bullets I need. Many students, even very good ones, haven't rehearsed their voices enough to be able to explain their own intellectual accomplishments. This is not good. Once I do get the necessary bullets, I come up with everything positive that I can honestly say about the person. This is where the bullet points come in: I use them to provide evidence for my positive statements, and I use them to help me think of more honestly positive things to say. This method makes letter-writing more convenient from a moral perspective, since I don't have to struggle with my conscience about providing negative evaluations. I try to organize each letter around a single headline -- the single most important of the candidate's positive attribute -- while trying to make sure that I cover everything positive that I can come up with. If a student has weaknesses, I simply don't mention them, figuring that a letter that makes no mention of the student's ideas, hard work, personality, or whatever will speak as loudly as one that says bad things on those topics. The people who read the letters, all of whom write such letters all the time, will see what I am doing, and they will interpret accordingly.

I will admit that some people have more sophisticated approaches to letters than I do; they have reverse-engineered the bureaucratic processes in their heads, and they design their letters based on a finely-detailed understanding of the bureaucratic process, including the precise questions that the people who read the letter are going to be asking themselves. (I explain this further in section 11.) I don't have that kind of savoir-faire.

Once you do apply for a job, you may also find that your network contacts will volunteer to put in an informal good word for you. This usually means that they will send a simple e-mail message to their friend in the department where you're applying, saying "this person is smart and I think would make a good match for your department". There is nothing wrong with offering to send these back-channel messages, and you should normally accept. The main exception is if you do not trust either the sincerity or the judgement of the person doing the offering.

Interviews

Next you will be invited to job interviews. If you apply for lots of jobs, including jobs that you don't

really want, then you will get lots of practice at job interviews. This is good. So don't turn down job interviews at marginal places unless you really are overwhelmed with better interviews. When you go for a job interview, attitude is important. Do not think of the interview as primarily a way to get a job. That short-term approach will make you act desperate. Instead, look at the interview as an opportunity to establish or deepen long-term professional relationships with the people in the department. You need to be thrilled to meet everyone and find out what they care about. Some of the people will be in completely different research areas from you, but even they will turn out to be connected to you in unexpected ways. Be open to that and think long-term.

The fundamental principle of an interview for a research-related job is that you need to be able to establish a point of commonality with everyone you meet. Remember how I said that a professional network is based on the articulation of shared values? This is similar, except that you have to do it on your feet. One more reason to develop your network is the practice that it will give you at articulating points of commonality with people, and this is where that skill will be most handy. In the old days, a job interview meant establishing this sort of connection with complete strangers -- believe it or not, it was often hard to obtain a simple list of the department faculty. Now we have the Web, and most job candidates show up for interviews having memorized the faculty and their research interests. You should too. But realize that the real work is going to be done interactionally: you will meet with the people, you will converse with them, and the main product of each conversation should be one very clear reason to believe that you and that person will have something to talk about in the future.

More concretely, job interviews usually come in three parts: the public presentation, individual conversations, and socializing. At a research-oriented institution, the public presentation is simply a well-practiced research talk, methodologically airtight, organized around a single visionary argument, and aimed at a broad nonspecialist audience. Practice this talk until you can be fascinating in your sleep. You might be terrified, in which case you will be especially happy that you practiced your talk. Don't get lazy and prepare it at the last minute. This is your whole career we're talking about.

The question period after your talk is especially important. You will probably get some of the standard questions that challenge you to fill in seeming holes in the argument, and your history of networking with diverse people and internalizing their perceptions of your work will help you deliver the crisp, non-defensive answers that the audience needs. But you may also encounter questions that seem completely random. You will find yourself answering a question that appears to have nothing to do with your talk, as if the questioner were too lazy to understand your talk and were instead asking you to address some personal hobby-horse. When this happens, it helps if you understand what's really going on. You are not being abused, and the questioner is not self-absorbed. Instead, the questioner wants to know if the two of you share any potential conversation topics. The real form of the question is, "I'm interested in this, so tell me how your talk relates to that". If you draw a blank, adopt a faintly quizzical but basically delighted tone and say, "that's interesting; tell me more". Then look for a point of connection in the response. Your goal in answering questions, and in all of your interactions with the people, is *not* to show how smart you are -- your written work and your talk have taken care of that -- but to show that you are an interesting person to converse with. Blasting people with the fire-hose of your overbearing brilliance is not the right approach at this point. What you're looking for is a point of contact, just a single way to make a connection between your interests and those of the questioner. You needn't pretend to understand things that you don't understand, and you needn't chase down every implication of every question. Just open up a single topic that builds a bridge between your interests and theirs.

A job interview typically also includes one-on-one conversations with faculty and students. These conversations are usually less stringent than in the corporate world, but you should certainly have strong answers ready for the standard interview questions: "Why do you want to work here?", "What do you have to offer?", "What are your research plans?", "What is your teaching philosophy?", and so on. (To get a sense of how hard-core corporate interviewing works, see Martin Yate, "Hiring the Best: A Manager's Guide to Effective Interviewing". To learn how to answer the questions, see Martin Yate, "Knock 'em Dead".) For the most part, though, your goal in these conversations is the same as

with the questioners after your talks: come away from each conversation with a point of intellectual contact between the two of you. It helps if you have a guess about this point of contact going in, and this is where your homework helps. You have more flexibility in these conversations because they need not be focused narrowly on your research projects. They can include the person's background, cultural and political aspects of the department, the students, and other things that you want to know about. Sometimes the interviewer will have an agenda that they want to cover, in which case you should go along with that, at least at first. But otherwise you should gently take control of the conversation. Find opportunities to tell relevant information about your career, your work with students, and so on. Do not conceive of this stuff as advertising. Do not strain to say flattering things about yourself, as if you were reciting the selling points of a product. Instead, focus on finding something professionally in common -- one thing -- between yourself and your interviewer.

When I say "take control", I don't mean that you should dominate the conversation by talking a lot. Instead, alternate between telling facts about your professional life that might provide points of contact and asking questions that are likely to elicit the kinds of raw material you need to identify the commonalities you're looking for. This may seem daunting at first, especially if you are talking with someone whose work seems completely unrelated to yours. But if you just get started, and get practice at it, then you will find it a lot easier. Because your interviewers will talk to one another, you should not repeat the same information to everyone. Instead, consciously try to have a different conversation with each person. For example, with at least a couple of your interviewers you should display knowledge of, or at least a sincere curiosity about, the department's curriculum. A good way to start that conversation is to ask how course assignments work. Also make sure you tell someone your research agenda for the next several years. They don't know whether your brilliant dissertation was your own work, or whether you simply transcribed the ideas of your advisor. So frame your future work in a way that builds on the accomplishments of your dissertation while clearly moving into new territory. This will be hard because you're probably still in the depths of the dissertation. So take time out to think about this before you arrive. Try to convey a concrete sense that you can set up a pipeline that produces refereed journal articles as its output.

During the interview, you should not talk about topics that are better postponed until you get an offer. This includes salary and benefits, and it especially includes topics such as course reductions for research that may make you look less than completely thrilled about your teaching responsibilities. See the discussion of negotiation below for more details about that phase of the process.

The final component of the interview is socializing. This might take the form of a reception, or of a meal with some number of the faculty and students. The socializing is really just socializing. So tone down the intellectual intensity and socialize. It's still a test, of course, but it's a test of whether you can tone down the intensity. Use common sense. Do not drink alcohol. Do not talk about deep personal things. Do not assume that everybody is your close and trustworthy friend, just because they are being friendly and polite. Do not say anything bad about anyone. Do not get wild and crazy like it's a party. Do not try to engage in politics, because you won't be any good at it. Just socialize. Get people to talk about themselves. If you have kids, then by all means ask the people about their kids. Find out about daycare and rent and culture if that's what you need to know. If you want to cause a little trouble, ask innocently about the history of the department and watch what happens.

A common mistake during a job interview is to focus your attention on the faculty and ignore everyone else. You need to listen to the students. Are they smart? Mature? Demoralized? Excited about their work? Engaged in a rebellion? Just punching the clock until they get their credential? What are their complaints? What agendas do they bring to the hiring process? Are you only hearing from the activists and complainers, or are you hearing representative views? Try to talk with a group of students without any faculty present. Very often the most vocal segment of students, who may or may not represent a majority, have definite ideas about what sort of faculty are needed -- basically, faculty who can teach the things that they want to learn and that the current faculty can't teach. If you can teach those things then by all means get conversation going on that topic. If not then elicit a broader range of issues and concerns to discover whether that particular topic is the only important

one. In addition, graduate students will often have elaborate views about the politics of their department. You can listen to these views as anthropological data, but in practice students' political analyses are wildly uneven in quality; some are very astute -- these are smart people, after all -- but in other cases they just don't have enough information to develop informed ideas. So listen to them, but don't automatically believe or act on what you hear from them.

Big picture

Those are the mechanics; now back to the big picture. Being a job candidate is inherently strange. In one sense it is flattering: all of these interesting and busy people are focusing their attention on you and your work. It is an important way to get feedback and thus build your professional voice. It is an important way to get a sense of proportion about the professional world. To really understand it, look at it from the point of view of the people who are interviewing you. By far the most valuable commodity that any academic department possesses is job slots. Things like money and office space (which is the second most valuable commodity) are relatively fixed, or else they are in the control of deans and provosts. But who gets hired is almost totally under the control of the faculty, and it is absolutely fundamental to the future workings of the department. It stands to reason that people might fight about it, or that they will be looking for allies or compromises or least worst alternatives. All of this political action will be going on under the surface, and you will be oblivious to most of it. Of course, if you have a friend in the department then you will have learned some of it. But most of it will be too complicated or subtle or taboo for anyone to explain to you.

So here is the paradox: while you are in town for your interview, you are the most important person in the whole world, and yet you cannot know just *how* you are important. It's like being an anthropologist: you sail ashore on an island somewhere, with maybe a couple of names of contacts and a year spent studying the language from tapes. You really don't know the culture that well, and yet suddenly there you are. You are fascinating to them, and they are fascinating to you, but the substance of this fascination is hazy. You are *meaningful* to them -- that is, the culture and politics of the place has assigned you a meaning -- but you don't know what your meaning is. You might be seen as a savior, or an invader, or as a source of cargo from the First World, or as so-and-so's candidate, or as a snooty person from the Big School on the east coast. Most likely different people will perceive you differently, and their perceptions will be shaped by their relationships to one another. That's why it will be helpful if your friend in the department can identify the swing votes -- people who aren't necessarily against you, but who need persuading if you are going to have any chance. On the whole, however, the good news is that nobody will expect you to understand the culture and politics. Don't go around saying things that could trample on land mines and you'll be fine. Listen both intellectually and intuitively to the people as they talk. Get them to talk about their history of relations with one another. When they tell you something about that history, listen to their vocabulary and use their words to ask them more questions. Smile and nod and don't get drawn into topics that you don't know anything about. Go ahead and express your own concerns, e.g., "from what you're saying, should I worry that maybe I, given my background as such-and-such and my interest in such-and-such, will be treated as a outsider and not a full member of the group?". That works fine. What won't work is expressing opinions about this strange culture, when you just washed up on the shore this morning.

Here is another way to think about the politics of the academic job interview. Think about the faculty members in the department where you are interviewing, and arrange them along a spectrum. At one end are the people whose research interests are closest to yours, and at the other end are the people whose research interests are furthest away from yours. As a broad generalization, faculty want to hire people whose interests are closer to their own. And the faculty decide who to hire by majority vote. These facts define your task. With the faculty whose interests are closest to yours, your job is to develop a deep bond of professional solidarity. Once they hire you, they may not be able to hire any more friends for a long time, so they need to be persuaded that you will be a good collaborator. With the people whose interests are furthest from yours, your job is simply not to get them mad at you. Find a single point of contact with them, establish friendly relations, and leave it at that. The most crucial people are the ones in the middle -- the faculty whose research areas are somewhat related to

yours. These are the swing votes, and you must win them over. Read their work. Ask your contacts what they care about. Then, when you're on the airplane, think deeply about the values and directions that you share with each of them, and develop a sense that you are intellectually on the same team. Of course, in the end people will vote for you because you are the best candidate for the job; no amount of politicking will change that, and your basic approach to the interview should not be political. Even so, the best way to help people appreciate the quality of your work is to converse with them in their own language.

Negotiating

The point of all this, of course, is to get job offers. Know that you do not have a legally binding job offer until you have a paper letter in your hand that offers you the job and states the title, salary, and starting date. Do not tell anybody that you have a job, do not reject any options elsewhere, and do not resign from the job that you currently have until you have this letter in your hand.

The official job offer letter, however, is the end-point of a fairly complicated process whose details vary a lot depending on the field and on the personalities of the people involved. The first and most momentous step is that the department votes to recommend you for the job. When this happens you will receive an informal message from someone in the department, and there will be much rejoicing. This is *not* a legally binding job offer. When you receive this message, the correct answer is not "yes" but rather "it's a great honor that you want to offer me the job, thank you; let's explore the details". This is called negotiation, and the results of the negotiation will go into the job offer. Negotiating a job offer is a serious matter. The intuition is that you will rarely have as much power as you do right now. Use it, because once you are hired you can be ordered to teach courses you don't want to teach, serve on committees that you don't want to serve on, conduct your research in lab space that you don't like, and so forth. So long as your negotiations with the department remain open, you will have their undivided attention. Be polite. Be business-like. And be prompt, because if you turn down the job then they will want to offer it to someone else. But do take the opportunity to think carefully and get yourself the best offer you can.

Prepare for the negotiation by talking to the three or four members of the department with whom you established the best rapport, hopefully including the most politically astute. Call them on the phone and say, "you're probably aware that the department wants to offer me this job, and I'm hoping to continue our conversation a little bit; is this a good moment?". They've interviewed you; now it's your turn to interview them. Be polite and low-key. Don't be arrogant. Don't get caught digging up dirt, and don't grill anyone like a police detective. Don't waste their time. Stick to the point. But do get your questions answered. If you have practical questions about things like housing costs and community life, ask them -- one of the norms of collegiality is that colleagues help one another out with this sort of practical information. Ask semi-directive questions about the topics that concern you. "What should I know?" "How does tenure work there?" "What is the tenure rate? Can you tell me about cases where people didn't get tenure?" "What is the culture like?" "How does everyone get along?" "What sorts of things have other new faculty negotiated for?" Then listen to what they say and don't say, and how real they sound.

When negotiating the details of a job offer, you should understand what flexibility the department does and does not have. A department in a private university will probably have some flexibility about salary. The key intuition is that you will only get the salary that someone else is willing to offer you. So if you have other offers (and they'll know if you have other offers) then you can explore the issue. A public university will probably have little flexibility about salary. (On the other hand, salaries at public universities are matters of public record, and are sometimes available on the Web if you look hard.) The only common way for an entry-level faculty member in a public university to negotiate about salary is to consider getting hired at one notch in the promotion scale above the bottom. So ask the question, "how does the promotion ladder work there?". Oftentimes they will have Assistant Professor I, II, III, and IV, or whatever. So maybe you want to be Assistant Professor II instead of I. But then maybe you don't, because an Assistant Professor II might come up for tenure a couple of

years earlier than an Assistant Professor I, and you probably want to delay your tenure case as long as possible so that you can amass a publication record. So salary is probably not a major negotiation issue. If you do want to negotiate salary, the gist of the problem is for you and your prospective chair to formulate arguments that will persuade the dean, whose decision it is. If nothing else, this is good practice: once you start work, you will spend a lot of your time working with your colleagues to formulate arguments that will persuade the dean.

As to the other issues, distinguish in your mind between items that cost money and items that do not cost money but that make the chair's life harder. As far as the money is concerned, you should figure that the chair has a "pot" of somewhere less than \$10,000 to spend on extras for you during your first year. (That's for a research university. I don't know about industry or more teaching-centered schools. The amount also depends a lot on the field. Scientists need a lot of capital to work, but entry-level historians aren't in a position to negotiate for much of anything.) So you are effectively deciding how to allocate that money. First find out what comes with the offer for free. That might sound like, "I assume the offer comes with basics like an office with a computer in it". This is a smart thing to say, because you don't want your computer to trade off against other items. Do the same with technical support for your computer, and then do it with library access and moving expenses. Then figure out what else you want for your first year, such as a laboratory space, a lighter teaching load while you get your research started, or an assistant. You might also get someone on your thesis committee to explain the concept of "summer salary" to you. You need to get a research program started, and you should ask the chair for whatever you will need to hit the ground running. Much of your first year will be spent writing grant proposals, and you need the resources up-front that will let you start doing research and win the research grants you will need. It is in the department's interest for you to succeed in this, but the department will not necessarily know what your needs are. So figure them out and negotiate for them. As an entry level faculty member you should not invest your ego in getting a huge amount of stuff from the negotiation. Just find the optimum trade-off.

Your other area of negotiation does not cost money, but it does make the chair's life harder. I'm talking about teaching and committee assignments. Much of the chair's job is to fit together a whole batch of puzzle pieces so that courses get taught and committee work gets done, among other things, and you are a puzzle piece. You want to get assigned to teach courses that you will be good at teaching. You also want to be confident that you will be assigned the same course for several years, so that the massive effort of preparing the course will be amortized, and so that you can focus more on research in the crucial few years after you get your research program under way. So try to negotiate at least some of your first year's courses. This may not be possible at all if it violates local customs, but you can ask. Consider being assigned to teach a graduate seminar in your research area, ideally toward the end of your first year, so that you can recruit graduate students to your projects. You should also negotiate your first-year committee assignments. Some departments kill their junior faculty's careers by assigning them difficult administrative responsibilities. Find out whether you're dealing with a department that has a history of this. You can't negotiate your courses or committee assignments beyond the first year, but you can at least get yourself positioned. The key intuition for committee work is to define an area of committee work that you really care about, and get assigned to that. That area might not even have a name yet. Avoid the undergraduate and graduate program committees, which involve heavy lifting. Organizing the department seminar is a very good idea. It is usually not a popular job, but it will give you a public role and help with your networking.

One last item. While you're negotiating your job offer(s), you need to ask yourself a hard question: will my dissertation really be done (and that means completely done, printed, signed, and into the library) by the start date of the job? The reason I ask is that not having your dissertation done when you start a new job is a bad idea. For one thing, the job itself might be contingent on your having a PhD. But even if they let you start the job without the dissertation finished, you will probably regret it. You'll tell yourself, "I'll get back to the dissertation once I overcome the enormous blast of work at the beginning of the new job", but then reality will hit. That initial blast of work will never end. And even if it does end, you'll have lost your current immersion in the dissertation, and it'll take you months to get back up to speed. Meanwhile, the tenure clock is ticking, and all the time you've spent

on your dissertation is time that you're not spending on grant proposals, research projects, and refereed journal papers. My point is that you must be realistic about when your dissertation will be done. It has already taken longer than you thought, and the rest of it will take longer than you thought as well. You've got a committee of professors looking for problems with it, you've got trips to the library ahead of you, and you've got details to pin down. It's an issue.

If you do worry that you might not finish the dissertation on time, the job negotiation is the right time to face the problem. You can say this: "Let's talk for a moment about my dissertation. It's coming along very well and I'm pretty confident that it'll be done on time. But if something bad happens and it's not done on July 1st (or whatever the official start date of the job is), what happens?". Your interlocutor's tone of voice will immediately drop into that troubled-and-worried range that you have been trying to avoid during the cheerful interview process, and you will have a scary conversation about rules and contingencies. Don't panic. Remember that these people have just gotten done persuading themselves that you are the best person for the job. They aren't going to blow you off just because you asked the question. But they have students that need teaching, committee work that needs doing, and all the rest of it, and their lives will become measurably harder if you blow it. The best outcome is if you can get an option, written into your offer, to postpone your start date by a semester. Or, if you're especially lucky, they might bring you on as a postdoc for a year with the job offer still in effect afterwards on the condition that you finish the dissertation. Or you might get an ultimatum to finish it or else. In any case you'll know where you stand. You certainly don't want them saying, "There's a chance that the dissertation won't be done", so do emphasize that the conversation is hypothetical. But if things drag on, don't kid yourself about the reality of the situation.

Once you finish negotiating with the department, your job offer will probably need to be approved by the university's internal hierarchy. Actually, these approvals might happen before the negotiation; the point is that the department itself does not have the authority to offer you a job. The hierarchy's approval process does sometimes go wrong: either the so-called Committee on Academic Personnel doesn't think you have enough publications, or they are overloaded with other people's cases, or the department failed to get your file to them on time. This is why you shouldn't abandon any other options until you have an offer letter in your hand. It is also why you should ensure that your department has everything it could possibly need to defend the idea of hiring you: publications, recommendation letters, chapters of your half-finished book, a copy of your book contract with the publisher, teaching evaluations, everything. If you wrote more papers after the interview (and you should have), definitely send them along. Unpublished papers count too, provided they're ready to circulate. And make sure the department has exhaustive and up-to-date contact information for you, in case a bureaucratic emergency arises.

Finally you will get written job offers, hopefully including ones that you want. The really hard part comes when you have more than one. If the offers all arrive at the same time then you are lucky -- you just have to pick one. But if the job offers arrive at different times then you will find yourself under a great deal of pressure. You might get an offer from your fifth-choice department, and they might give you three weeks to decide, and then two weeks along your first-choice department is still dawdling. What do you do? Well, first you communicate with everyone. Tell your first-choice school that you have another offer that comes with time pressure. If they want you then they will speed it up. Even worse is when your fifth-choice job offer is about to time out, and you have no other job offers in hand, but your first choice department says that they can 99% guarantee you a job offer if you can just wait another week. This is a tough one, because if that first-choice job doesn't come through then you're on the street. So what do you do? Well, hopefully you have prepared for this amazingly common situation by having a one-year postdoc or visiting position in your pocket as a fall-back. But let's say you haven't. Then you should try to delay the fifth-choice people another week, and if you can't delay them then you should take their job, figuring that maybe you'll move somewhere else once you become established. Why? Because that so-called 99% guarantee from your first-choice department is probably more like 50%. It's in their interest to delude themselves about how likely they are to offer you a job because they lose nothing if they're wrong.

Conclusion

That, then, is how to get a job. If you are reading this as a new graduate student, it probably sounds completely foreign. "How could I ever do all of that, when right now I'm just focused on the insane reading list I have to study for my qualifying exams?" It's a good question, but the answer is that everything comes in its time. Read this article again when you are writing your first conference paper on your research, and then read it again once a year. You will be impressed with how different it seems from year to year, and how much more sense the institutions will make once you start to become part of them.

SECTION 10. Advising Others

Once you get a job, and probably long before, your status in the community will quietly shift: you'll no longer be the disoriented student at the bottom of the totem pole, and others will be coming to you for advice. That's particularly true if you've been building a network, organizing professional activities, and projecting a sense of purpose in your career. Perhaps you are not yet anyone's official dissertation advisor, but you are an advisor in an informal sense, with a chance to do good and a risk of doing harm. You need to see the situation coming, because being in a position to give advice can evoke strange reactions. If you have any latent tendencies to be an empire-builder, power freak, meddler, or know-it-all, now is when they will come out. It will take a little time before you get comfortable with the role, so in the meantime here are some concepts and rules.

* Figure out whether you are being asked for advice at all. Often people who have troubling situations just want to talk about them, either to sort out the situation emotionally or just to rant. Maybe you're just supposed to sit there and say nothing, which if you're like me will be good for you. It is very common to hallucinate that you are being asked for advice when you are not. Giving unwanted advice is a serious and widespread character defect. It is a good practice, therefore, to ask "do you want advice?" or "are you asking for advice?". Don't make it sound like you are bursting with advice that you can't wait to spill out. If the answer is "no", shrug and say "okay" and be done with it. Regardless of the answer, the situation will be clarified in both of your minds.

* Decide in advance whether you are qualified to give people advice about personal matters, or just about professional matters. Most people are terrible at the former. In either case, be clear in your own mind whether the matter is personal, professional, or a combination of both. People's situations usually have both aspects, especially early in their careers before they have themselves all established and compartmentalized, so you may have to say things like, "well, that's a personal aspect of the situation that I can't really help with".

* Understand the different structural situations that might cause the person to need advice. The hardest and most important case is when the person is just entering into a new institutional setting (such as the early years of graduate school) or else making the transition to a very different location within the institution (such as when starting their first faculty job). In that case, what's really needed is a general orientation to an unfamiliar landscape. You're inside and they're outside, and they're still clueless. Your major obstacle is that you've forgotten what that clueless feeling is like. Try to remember, though, because your job is to provide the person with a way of looking at things. Try to explain, concisely and in plain language, the logic of the world they're entering, so they can see what's going on around them. Another possibility, very different and much easier, is that the person understands the unwritten rules of the institution just fine, and needs advice simply because you know particular facts. Perhaps you are acquainted with particular individuals and can provide advice about dealing with them. Explain what those individuals care about, what concerns they are likely to have, what misperceptions are liable to set them off, what agendas they have going on, and so forth. Yet another possibility is that you're being asked for guidance, either step-by-step instructions or an intuitive sense of proportion, on a specific process that you have been through, such as organizing a

workshop. Figure out what kind of advice you are being asked for, confirm your understanding with the person, and then advise accordingly.

* Realize the limits of your expertise. Learn to say "I don't know" without feeling insecure. Practice phrases like "I'm at the edge of my expertise here, and you might want to talk to X or Y who has done more of this than I have". Learn to detect the feeling inside yourself when you cease knowing what you're talking about and start making things up instead. Notice how good it feels to know what you're talking about, and how good it feels to refrain from making things up.

* Clarify the situation. Make sure you've got the facts before you start issuing directions. The person you're advising may not even be clear as to the nature of the situation, and you may well find yourself turning up important facts that completely change the picture. This is particularly true when you're being asked to help impose order on chaos, as for example when the question is "What should I do with my life?". Understand whether the crucial facts are about the person asking for help, about some public situation such as a bureaucratic process, about third parties, about technical machinery, or whatever. Some situations are clearer than others, and when the situation is unclear you should settle down to extended elicitation of facts. Decide whether you should be asking directive questions (that is, questions that presuppose that you know what the real issue is) or semi-directive questions (that is, questions that are fairly vague and are really aimed at getting the person talking so that you can listen to their language and the way they're talking). An example of a directive question is, "have you registered for the course?"; an example of a semi-directive question is, "how did you decide to take the course?". Sometimes it's useful for the person to wander around exploring different aspects of the situation, and sometimes it's not. It's up to you to discern the difference.

* Find out what's behind the question. People often don't know how to ask their question, or because they don't understand their situation they are asking the wrong question. If a graduate student asks you how to start a journal, for example, you can probably guess that the question is wrong. Even when the question is right, you usually want to know what motivated it. So unless the question is really clear-cut, don't launch into an answer until you have elicited the broader background that motivated it. Maybe your advice will be to ask other questions.

* If the person is having trouble with a decision, find out if they know what they want to do with their life. I've mentioned that "what should I do with my life?" involves imposing order on chaos, and you can hardly believe how true this is until you start talking to people about it. Some people tolerate the chaos perfectly well, and they are happy pursuing what interests them from day to day or year to year. Other people, however, live in a constant state of distress because of it, and those people need help. When people can't decide what to write their term papers about, for example, I find that they are actually uncertain what their life is about. Just ask them: "what do you want to do with your life?". They will probably shrug and giggle. They have no idea. I believe that someone who is living in that kind of chaos is incapable of learning, and so I regularly turn conversations about term paper topics into conversations about career plans. I don't require anyone to make any irreversible commitments, but I do urge them to come up with a tentative plan that they can explore through their term paper. The same principle applies to many other decisions. Now, some people don't want a plan for their lives, and insist on living in state of permanent chaos. That's their right, but it's also my right to tell those people nicely that I don't know how to help them.

* Cultivate your powers of finding things interesting. If you are like most of us, you will need to learn how to distinguish your own interests from other people's. If someone is looking for direction, the worst thing you can do is to foist your own direction on them. Most such foisting is unconscious: you may not intend to manipulate anyone into following your own path rather than theirs, but if you have sewn yourself into the narrow world of your dissertation then you may not even recognize that other paths exist. Get used to the fact that some people want to make money, and that other people are interested in research methodologies that are quite different from your own, and that still other people are much more interested in theory than you are, or much less. Most people couldn't care less about the research literatures that fascinate you, and that's okay. In advising others, you have an opportunity

to expand yourself by searching out and articulating a vision of greatness for someone else's life. You have to start by believing that everyone, including the person you are advising, is capable of making a tremendous contribution to the world. That tremendous contribution is inside them somewhere, it's trying to get out, and if you are advising someone who is looking for direction in your job is to identify that tremendous contribution and get excited about it. Figure out what the person is interested in. Elicit bits and pieces of their interests, then offer various alternative directions that they could pursue, and ask them which alternatives strike a chord. The process is like tuning a radio: you are going to fiddle with the dial until the person's tremendous-contribution-in-the-making comes through loud and clear. Share that person's excitement, and enthusiastically preach the importance of their vision. Their path won't always be easy, and your articulate and persuasive confidence will help keep them on track.

* It's not about you. In offering advice to someone else, you may be tempted to use your own experiences as examples. Don't. Stories about your life will not communicate anything useful. If you have learned any lessons from your experiences, then that's great; you can explore how (and whether) those lessons apply to the particulars of the other person's life. But leave your life out of it. This rule does have one exception, though. Often someone will be distressed because they're going through a crisis that lots of people go through. You can help them feel better by saying, "yeah, I know, I went through that; lots of people do", and leaving it at that -- just a few words.

* Understand which words belong to you, and which belong to the person you're advising. For example, if you are serving as a bureaucratic authority (e.g., an instructor in a course) then it is your job to understand and adjudicate the meanings of the relevant bureaucratic words. On the other hand, if the person is telling you about their life, or about a world that you are not a part of, they will often introduce words that you do not control, and whose full meaning you can probably never know. I'm not just talking about five-syllable jargon words, but ordinary simple words that might or might not carry special connotations for particular people. Don't try to take control of such words. Don't presuppose that you know what they mean, and do not try to impose your own meaning upon them. Nothing kills communication faster. Instead, incorporate those words into questions aimed at eliciting a fuller picture of the situation. For example, if the person says, "I want a meaningful job", you have no idea what "meaningful" means to them. But you can ask a question like, "what would a meaningful job be like?", or "who comes to mind that has a job that's meaningful in the way you'd like?". This can get condescending if you do it wrong, but once you have the concept of not legislating what "meaningful" means you'll figure it out.

* Be a mirror. Make clear what you know and don't know. Check your understanding by repeating it back in your own words and saying, "is that right?". This is called active listening, and it accomplishes many things, such as preventing you from saying dumb things, eliciting any further information you might need, and tactfully showing the person how well they are expressing themselves. Own your perceptions and feelings by saying things like, "my sense is ..." and "I perceive you as being unclear on ...". Emphasize the evidentiary basis of your comments by saying things like, "I hardly know you, so what I'm saying is based only on what you've told me and on the impressions I'm getting here". It may sound like a platitude, but it's not. It makes clear that you do not have a magical ability to read anybody's mind, and that you understand your limitations.

* Be clear whether the situation calls for you to offer specific instructions. Usually it does not. Everyone has their own path, and you probably can't have enough information to know what course is actually best, given the full context of their life. It is important to understand this, because otherwise you are likely to get yourself too committed to the solution that happens to have occurred to you. Some people just want reactions, perspectives, options, issues, and reassurance that they're not crazy. They can figure the rest out for themselves. Other people want detailed instructions. You'll have to figure out who wants what. That said, some people want detailed instructions so they can blame you if the instructions don't work. You'll have to see that problem coming too.

* If you start to suspect a hidden agenda, stop, and don't continue until you have clarified the

situation. Some people want advice so they can blame you if your advice doesn't work. Some people pretend to want advice so they can resist it. Most people with agendas will never admit them, and it probably won't do any good for you to accuse them of anything. But if you determine that your time is not being used in good faith, simply say that you don't know how to help them. And let it go.

* If you find yourself pressuring, manipulating, or arguing, then something has gone wrong. You can state your views, but let go of your desire to control anyone. Other people are responsible for their actions and have to make their own decisions. Trying to control them won't help and will probably cloud their thinking. If their decision affects you then you are not giving advice but negotiating, which is extremely different. If you are actually negotiating then this must be made clear all around. Likewise, you should realize if you have any conflicts of interest, for example when the topic is whether the student ought to be working for you. Sometimes the conflicts are not obvious, and in that case you should obviously disclose them. But if your interests really aren't affected, then realize that and let go of needing to fix the outcome.

* Giving advice is often iterative. You'll offer advice, but your advice will cause other facts and issues to surface, such as the reasons why your advice won't work. That's fine. Just start another round of clarifying the situation. And once you understand that advice is iterative, you'll be more likely to frame your advice in a conditional way, like "okay, how about if you ..., would that work?".

* Talk in usefully medium-sized units. Don't give long speeches. If your advisee is filling up with comments or resistance as you talk then your talking isn't doing any good anyway. If they seem to want to talk, stop talking, because they aren't listening. By the same token, if your head fills up with things to say while the person is talking, make notes. Then just say the one that's most important. It's okay to say "hang on, I need to keep notes to keep track of this". If you can't get around to saying everything that you want to say, you can always follow up with an e-mail letter if necessary. Or you can just forget it. You don't need to present a complete, seamless picture. Just say enough to get the person thinking on their own again, then stop. You can check understanding with something like "is this making any sense?". This is better than "do you understand?", since it puts the blame on you and doesn't presuppose that you *are* making sense. An even better question is, "do I understand?", since that's a more common problem anyway.

* Get to the point. Don't start into a philosophical speech whose connection to the issue at hand is not going to be revealed until it's almost done. If you do have to explain an abstract concept, say so first: "I guess to explain this I have to introduce an abstract concept, okay?" The person you're advising is focused on their problem, and they don't have the attention span for anything whose relation to the problem has not been made clear. Concisely explain your thought processes.

* Don't ask questions unless you want to know the answers. Don't ask "quiz questions" whose answers you already know. Making someone read your mind teaches all the wrong lessons.

* If you find yourself giving the same advice over and over, write it down. This happens a lot when you're dealing with lots of people who are all in basically the same situation, such as students in your class. Most of them will never ask you for advice, even though most of them need it. By writing your advice down, you save everyone's time and spread the benefits of your wisdom to more people. Then keep adding to your emerging how-to every time a new issue comes up. That's where this article came from. Not only that: every time I see a student feeling bad or getting into trouble, I ask myself whether the necessary advice is in this paper, and if it isn't I add another sentence, paragraph, or section.

SECTION 11. Understanding the Research World

I want to assume now that you have built a network, internalized most of the lessons that I have

outlined above, and generally gotten yourself established in your field, and that you now want to understand the dynamics of the research world in a deeper way. Everybody that you work with has been building their own network in more or less the same way that you have been, and the institutions of research create tremendous incentives for everyone to keep on doing so. Beyond that, however, the institutions create new incentives for people who have reached the plateau that you have -- providing yourself with a functioning network -- and who want to move on to higher levels of accomplishment in their field. To understand these higher-level career strategies and their implications, another round of basic concepts will be required. This section lays out these concepts seriatim, and the next section agonizes over their moral consequences.

I should warn you that some of these concepts concern the more dysfunctional aspects of research institutions. My purpose in explaining these concepts is not to demoralize you, but quite the contrary to help you notice them, avoid them, if necessary defend or even cure yourself from them, and ultimately adopt a bemused distance from them as you go about the daily work of positive community-building.

(1) The invisible college

When most people look at the university, they see a physical campus with buildings and people. Even if they went to college themselves, they probably have little understanding of the institutions of research. Accordingly, as you are socialized into those institutions yourself, you will probably acquire a different awareness of them. You will develop a professional network that includes researchers at several universities, and you will learn about the people and activities at those other universities. As a result, you will acquire a mental map of numerous universities and their associated orientations, reputations, and histories. This map will be very real to you, and you may know more about your counterparts in a university on another continent than you know about the people in the building next door to you. The interconnected global research network is largely invisible to outsiders, and for that reason it is called the "invisible college", a term that derives from Diana Crane's book "Invisible Colleges: Diffusion of Knowledge in Scientific Communities" (University of Chicago Press, 1972).

The concept of an invisible college is useful for several reasons. First of all, it helps to explain some of the institutional tensions that universities face: individual researchers generally identify more strongly with their invisible college than they do with the organization that employs them. After all, it is principally the invisible college that evaluates the researcher's work by writing letters and refereeing articles. Universities are always threatening to be pulled apart by these centrifugal forces. Industrial labs, likewise, often have trouble persuading researchers to focus on the issues that affect customers, because the researcher's long-term career success depends on staying current with research agendas in the invisible college.

Invisible colleges also help explain the emerging uses of technology in research. "Collaboratories", for example, are on-line research community environments that cause invisible colleges to become, so to speak, more real. Most invisible colleges already have conferences, journals, and the like. They may even have Web sites and mailing lists. In each case the pressure is toward ever-greater integration of the different research groups within an invisible college. As the collaboratories become more technically feasible, these pressures will become even more intense. Ongoing real-time collaborations between researchers at different sites will become more common, and seminars might even be held at several sites simultaneously over video links. The details will depend on the needs and finances of each field, of course, but the general direction of the pressure toward integration will be largely the same. It is worth wondering, then, whether too much integration can be a bad thing. It is useful for each university to have its own distinctive approach to a field. Diversity is good, and the institution only supports diversity if a new approaches can colonize a small number of universities without excessive pressures to be interlocked with their opposite numbers at other universities. This may be an important issue in the future.

Finally, the concept of an invisible college helps keep you human. You can become so immersed in

your own particular invisible college that you become oblivious to your environment -- the neighborhood where you work. Think, for example, about the other universities in your region. Are they on your map at all? Do you feel bad about that?

(2) Networked individualism

Let us take the concept of an invisible college a step further. Imagine a vast diagram of all the professional networks in the world of research. In this diagram, everyone will be connected to everyone they know. Abstract as it sounds, such a diagram can actually be drawn with reasonable accuracy by following the citations in their published work. The analysis of these citation links is called "bibliometrics", and is a scholarly industry in itself. Throughout this article, I have been painting a picture of the structure of these relationships. When two researchers have become members of one another's professional networks, they maintain a sort of surveillance of one another. They read one another's published work, monitor one another's career progress, hear reports on one another through common acquaintances, update one another in periodic conversations at conferences, and so on. Their relationship has an architecture -- a structure and logic that are dictated largely by the workings of research as an institution.

On one level, the architecture of relationships in the research world has not changed much since the Renaissance. Scholars have always read each other's work, corresponded, traveled to visit one another, cooperated and competed, and so on. So what changes in the world of the Internet, not to mention cellular telephones, cheap air travel, and other technological advances? Those new technologies do not change anything on their own, but they do provide tools that people use to do more of the things that they already want to do. The institutions of research create tremendous incentives to keep in touch with the other members of your professional network, and that's what's happened: people are in much denser and more continuous contact with their professional contacts than ever before. It is only a slight exaggeration to say that we're heading toward a world in which everyone is a constant presence for everyone else. Technologies that are currently under development will propel this trend even further. Digital libraries, for example, will allow everyone to monitor everyone else's publications in real time, and cheap, high-quality video links will make it possible to organize seminars at a distance. While they will not eliminate face-to-face interaction altogether, these technologies will allow researchers to maintain even more continual contact than they do today.

This development is striking, and it counts as a new chapter in the history of the human person. Barry Wellman calls it "networked individualism". Networked individuals (such as yourself) are like air traffic controllers who, by using a video display and audio communications, constantly maintain a mental map of all the planes in their airspace. This effect can be quite tangible when you are reading your daily e-mail, and it can be especially tangible when you are working on a large-scale professional project, like organizing a conference, that requires you to keep track of the status of dozens or hundreds of individuals, or to reach out selectively into the space of individuals in your field to identify the best speakers, authors, referees, or meeting participants for a given purpose. As the world becomes networked, you will have to decide consciously how to manage the blizzard of communications that your network will entail.

(3) The expanding universe

So far I've been making it sound as though all networks are equally good. Start with what you care about, get some research going, and build a professional community for yourself around that research topic. And that is still my advice. Nonetheless, the problem of building a network takes on another dimension when you adopt a longer-term view. If you are entering the research community at the usual age, just out of college or a few years afterward, then you have a whole career ahead of you. To really prosper, and to really be part of something exciting, you want to join a field that is growing -- what I call an "expanding universe". A field that is shrinking is generally an unhappy place to be; at best it spends its time negotiating mergers and acquisitions with other shrinking fields, hoping to maintain the critical mass that is necessary to be a viable political force. People find themselves

fighting over fewer resources, and they have a much harder time attracting new blood. A growing field, by contrast, easily attracts new people. And resources are multiplying, so people don't need to fight one another. Instead they can join together in the collective enterprise of laying claim to the new territory that is opening up.

Smart students have a powerful instinct for expanding universes, and often spot them before the famous people do. How the smart students work this trick is one of the deeper mysteries of the professional world: after all, they are just students, and thus lack the extensive networks that are normally required to see big patterns. Part of the answer is simply that they are young. The way that ideas change is that the people who believed the old ideas die (Planck said this), and in this sense intellectual trends are driven by the interests of the young. This is one reason why it is okay for you to pursue the research that you personally find exciting: despite all of your unique individuality, you are also a product of a place and time, and even before you start networking you can be confident that plenty of other people will develop research interests that are more or less on the same wavelength as yours. You will network with those people, and when the old people die you and your cohort will inherit the world. At the same time, you can frame your topic in a lot of different ways, and it's helpful to frame your topic in a way that other people can relate to. That is part of what I mean by "articulating an emerging theme". In trying to articulate the theme that unifies the research of your peers, and that puts a name on what they find exciting about their research, you will be intuiting -- indeed, creating -- the expanding universe of your generation of researchers.

(4) Positive feedback

You are probably familiar with the general idea. Negative feedback is when forces operate to keep a system in equilibrium, pushing it back toward its nominal value whenever it drifts away. Positive feedback, by contrast, amplifies small disturbances so that they feed upon themselves and become ever greater. Complex real-world situations generally combine kinds of feedback, but it is useful to consider some of the positive feedbacks that promote successful careers. Let us say that you happen to mention topic X in a speech, and a reporter calls you to comment on it. You may not be an absolute authority on X, but if you are the first person to be quoted on X then you need to start studying. Why? Because reporters often decide who to call for quotes by looking in Nexis and seeing who has been quoted in earlier articles. Having been the first to be quoted, you will also be the second, third, and fourth. Soon you will be closely identified with the issue, nobody else will have a chance. The same thing can happen in many other contexts, including speaking engagements, consulting jobs, referrals, and (to a lesser degree) citations. (Of course, once your position has become entrenched in this way, it's not positive feedback any more. It's negative, as institutional forces operate to reinforce the status quo in your favor.)

Another type of positive feedback is learning: if you learn about an activity (such as a certain experimental procedure), then you are more likely to get further chances to engage in the activity, thereby learning some more. Yet another type is networking: if everyone knows that you have a big professional network, then they are more likely to want to meet you, thus increasing the extent of your network. People often stumble into careers because these types of positive feedback get started by accident, and good career strategies always encourage positive feedback. Pick an emerging issue and stake it out as your own: become publicly identified with it, learn the details of it from practical experience, and build professional networks around it. If you pick a good issue then the universe around it will expand, and your career will expand along with it. Picking an emerging issue is like placing a bet; your own intellectual intuition is the best guide to the best issue, but internalizing the views of others through networking is a good way to deepen your intuition.

Positive feedback also applies to departments, universities, and industrial labs. People want to work with the best people in their field, and so whichever organization first gets a critical mass of strong people can hire the best, thus locking in its position over the long term. This fact explains a critical fact about the hiring strategies of deans. As a general matter, it is in the dean's interest to build specific areas of strength that correspond to expanding disciplinary universes. That is, the dean's job is

to build a group of researchers in a field whose prominence and resource base is likely to grow in the coming years. Choosing a research area that represents an expanding universe is obviously a good strategy, because an investment in that area will pay off as the field becomes more prominent. But it is a good strategy for another reason, which is that existing, already-established research areas have already become dominated by other organizations. Those organizations benefit from positive feedback, and so it is little use to compete with them. Instead, the dean seeks to get positive feedback working from scratch in a new area.

(5) Arbitrage

Arbitrage is a concept from finance. An arbitrageur monitors two or more markets, looking for gaps in prices. If apples are selling for \$1 uptown and \$2 downtown, the arbitrageur will swoop in, buy some apples uptown, and sell them downtown. The resulting profit will depend on communication and transportation technologies, and the magnitude of the price gaps that open up in practice will be limited by the number of competing arbitrageurs. Fully arbitrated markets have uniform prices. To remain profitable, therefore, an arbitrageur must innovate technologically or search for markets that are not yet well arbitrated.

Something similar happens in the research world. A researcher might notice that a concept that is well-developed in one field can be applied to problems of wide interest in another field. If the concept is still unknown in that other field, then an arbitrage opportunity exists. This is how management consultants work: they work with one company, learning that company's organizational and technological skills, and then they sell their enhanced skills to other companies. (See Geof Bowker, *Science on the Run: Information Management and Industrial Geophysics at Schlumberger, 1920-1940*, MIT Press, 1994.) It is also the way that many careers are made in research: either by shifting a steady stream of concepts from field A to field B, or by taking a particular concept from field A and looking for many different fields where it can be applied, or by moving from one field to another, picking up concepts in each and then looking for another field where they can be applied. These are entirely honorable ways to make a living, and they provide the intellectual cross-fertilization that keeps fields healthy.

The position of the arbitrageur can be understood in terms of social networks. In some cases an arbitrageur can learn new concepts, or contribute to new fields, simply by reading books. More commonly, however, the arbitrageur builds a network in each field, consisting of those researchers whose work is relevant to the arbitrageur's own interests in that particular field. Of course, the very idea that the arbitrageur builds two different networks is somewhat artificial: the whole research world is one single network that is more highly connected in some regions than in others. "Fields" can be identified by their ideas and methods, but they also correspond to regions of high interconnectivity in the sprawling network of the whole research world. Arbitrageurs are effectively taking advantage of regions where the networks are relatively thin, importing and exporting useful goods (ideas, concepts, methods, tools) based on a strong understanding of supply on one side and demand on the other.

The opportunities for arbitrage are one reason why I have encouraged you to ignore disciplinary boundaries as you build your professional network. By looking for professional friends who are related to your research interests in several different ways, I suggested, you would create a network that looks like spokes in a wheel, of which you are the hub. If some of these people have nothing in common with one another then that's a good thing. It means that you will be able to establish a "trading zone" through which good ideas can transfer between fields that are not otherwise connected. By spanning several research communities, you will have more intellectual resources and career options than if you simply tried to join an existing group.

(6) Structural holes

The concept of arbitrage is useful because it gets us looking in an objective way at the structure of

professional networks. The insight can be generalized: many careers are made by filling a "hole" in a social network. (See Ronald Burt, *Structural Holes: The Social Structure of Competition*, Harvard University Press, 1995.) As an example, consider George Bush Senior, a genuinely talented and hard-working if not exactly visionary guy who spent his adult life building a massive social network of allies and supporters from various sectors. When he retired, a hole effectively opened up in that network. Bush was the only guy who knew everyone in that network, and he was certainly the only guy who had the confidence of them all. When some people retire, their networks simply fall apart. But in this case, Bush's son was able to step into the void. For all of his intelligence, sophistication, clean living, business success, and world travel, George Bush Junior would never have been able to build such a network himself. But he was able to fill the hole that his father had vacated, while also adding a number of new elements himself, and this enabled him to assemble a political coalition that came at least somewhere close to winning a national election.

So structural holes can open up when someone departs from a network that already exists. But a structural hole also exists anywhere that people ought to know one another and do not. So, for example, when several researchers are all working on related topics without being in contact with one another, a structural hole exists between them. Any one of them could fill the hole by reaching out to the others, and in practice most of them will eventually reach out to most of the others, eliminating the hole completely. Successful arbitrage is also an example of someone prospering by identifying and occupying a structural hole: networking with people on both sides of a divide between fields. Indeed, what any sort of entrepreneur does is to fill a structural hole, bringing together the diverse people and resources that are necessary to make money from an idea. Researchers often find themselves being lectured to be more "entrepreneurial", and this is what that means: building professional networks that are not just large but diverse, and that cross various kinds of boundaries, most especially boundaries that have money and other resources on the other side of them. I'll talk about dealing with funding agencies in the next section.

(7) Disciplinary narratives

As a scholar, you are certainly aware of your responsibility to cite relevant work by other people, especially when your own work builds on it. Your papers, like most people's, probably contain sections that are largely devoted to citing past work, and you probably distribute citations through the rest of your paper as well. This is good; it is part of the process of weaving yourself and your work into the web of relationships in your community. But you can also look at these citations another way: as a narrative of the history of the field. These narratives may not be great literature, but they are narratives nonetheless. They have characters, events, and a chronological story line. They recount the creation myths of the field, its conflicts, its heroes and villains, and so on. The narratives in your paper will be shaped by your reading and relationships, but they will also be influenced by the narratives that you have heard or read from others. It is fairly unusual, for example, for a scholar to come along and tell the history of a field in completely different terms, recognizing different founders or different heroes, or giving a central place to different innovations and departures than the ones that normally form the backbone of the field's narratives of itself.

Where do these narratives come from? At one level, everyone fashions their own narrative, connecting the dots among the various prominent works that relate to their own. Having laboriously rehearsed their personal narrative in their dissertations, they keep it up to date as their own work evolves, and as new work appears. At another level, however, the narratives are constructed collectively. People who do related work will probably have related narratives, and people who work in the same field will probably derive much of the outline of their narrative from whoever founded it. When someone founds a field, they are usually very concerned to give the field a proper history. This might involve identifying precursors, marking out the differences between the new field and older fields, making clear which work the new field defines itself against, and so on. Later on, other people in the field will be sure to cite the people who have most influenced them. Peer pressure will grow to cite particular works that are thought especially important.

Over time, a more or less conventional narrative will take form. This conventional narrative is not a simple thing. It may settle disputes over who should get credit for a given innovation. It may embody a collective judgement that certain works represented side branches or cul-de-sacs, and that certain other works represented the main line of development. Ideas from certain works will become part of the routinized story that people tell about their field, and the works will be heavily cited accordingly. Or a work may introduce an idea that seems revolutionary at first but then starts to seem so obvious that people forget that it needs to be cited any more. Some authors may make a special point of insisting that their work be cited, where other authors may not care as much, or may not be around to check up. In short, the conventional narrative emerges as a sort of collective negotiation among the field's members. And as new scholars encounter the conventional narrative in their readings and lectures, it settles into place and becomes practically irreversible.

I mention these disciplinary narratives for several reasons. First of all, I don't want you to be imprisoned by them. Look at them *as* narratives, as stories that are told according to certain conventions, and that could have been told differently. See their political character -- not necessarily as a sign of bad faith, simply as a sign of their having been created by human beings through their dealings with one another. As you read the literature, consider whether the conventional narrative of your discipline should be rewritten. Declare independence by quietly citing works that have been unjustly neglected by others (such as works by people who haven't done their networking). Ask yourself if the field's founder constructed a creation myth that exaggerates its differences from what came before, or that emphasized a single moment of invention when in fact (as often happens) the basic ideas emerged in several places more or less at once. Maybe you want to rewrite the narrative a little bit in your next paper. And think about how your own work deserves to fit into the narrative. Describe your work accordingly in your papers, and do make sure that the people who should be citing you feel a bit of peer pressure. You don't have to be a jerk about it, but you don't have to get trampled either.

There is an aspect of disciplinary narratives that I want to emphasize in particular. When your field was originally founded, the founders probably overcame opposition from an existing establishment. As a result, the rhetoric that they developed and taught to their students was probably preoccupied with that particular fight. For example, artificial intelligence (in which I was trained, and whose story I will tell in more detail in a moment) began as a counterrevolution against behaviorism in psychology. Because of this the rhetoric of AI is saturated with turns of phrase that are designed to do two things: (1) set up a cleanly defined opposition between AI and behaviorism, and (2) portray AI as right and behaviorism as wrong. The AI people won their fight with behaviorism, which hardly exists any more as an academic force. And yet the fight goes on. The rhetoric of the field is still aimed at defeating behaviorism, and this causes AI people to interpret nearly any criticism as a resurgence of behaviorism, even when it clearly is not. It also causes dissidents within the field to reinvent behaviorism under one guise or another, simply because that is what's thinkable within the vocabulary of the field.

This is the sad irony: even though AI won its fight with behaviorism, it did so by making itself much more similar to behaviorism than it should have. The problem is not so much with goal (2), portraying AI as right and behaviorism as wrong, as with goal (1), setting up a cleanly defined opposition between AI and behaviorism. In order to set up this clean opposition, it was necessary for the AI founders to commit themselves to many of behaviorism's foundational assumptions, such as the idea that cognition takes the form of an input (stimulus) which causes something-or-other (a blank zone for the behaviorists, a cognitive process for the AI people), which then causes an output (response). This framework has not served AI especially well, for example because it distracts attention from the ways in which people and robots engage in complex activities that are embedded in complex environments. Yet this complaint is hard to express in the language of AI, whose organizing question is still, "is this behaviorism, and if not then what's the problem?". You can accomplish a great deal by spotting this sort of out-of-date controversy and deciding not to participate in it. Even in cases where the "enemy" establishment is still very much in force, you will accomplish much more by honestly digging into the strengths and weaknesses of the two polarized sides, looking for a synthesis rather than a fight, than

you will by joining someone else's ancient struggle.

(8) Advisors' incentives to stifle creativity

The next concept that you need is not so fun. This is the incentive that thesis advisors have to stifle the creativity of their students. It's an insidious phenomenon, and it is not entirely the advisors' fault. Here is how it works. Your advisor will organize seminars, or otherwise recommend reading, and the reading lists that result will derive from the advisor's own voice -- from an intellectual map of the world that reflects the advisor's own effort to define a research program and situate it within an existing network of professional relationships. If you confine your reading to your thesis advisor's recommendations -- or, even worse, if you feel so overwhelmed with work that you accept your advisor's interpretations of those readings rather than engaging with them afresh yourself -- then your thinking will be organized and bounded by your advisor's thinking. You will talk the way your advisor talks, cite the same work, address the same audience, and so on. Of course, this needn't be a disaster. If you are smart, and if your advisor has chosen an expanding disciplinary universe, then you will write a good dissertation within that universe. You will get a good job, and you will take your place in a hierarchy. When the people in your advisor's cohort finally retire, then you will be in charge. It is not such a bad life. But it is not the life that you were meant to live -- the life that you would create for yourself if you complemented your advisor's teaching with some autonomous learning of your own, driven by your own sense of intellectual excitement and your own intuition for the expanding universe that is taking form on completely different ground from your advisor's.

So is your advisor deliberately brainwashing you in order to build an empire of clones and acolytes? It could be. Some advisors do this consciously, I am sad to say. It's their way of proving to themselves (and, they think, to others) that they are a success. After all, they are evaluated on their "impact" in their fields, and one way to create the illusion of impact is to program your students so that they are forever citing your work. Perhaps they just want to make sure that they do not die forgotten. Or perhaps they simply get locked into a fixed idea about your thesis topic and try to "help" you graduate on time by keeping you narrowly focused on that topic. Of course they rationalize it in various ways. But with other advisors it happens inadvertently. Your advisor is not God, cannot read everything, and inevitably sees the world in particular ways. Your advisor lives in a world that seems very big, and if your field is expanding then you could perfectly well construct a world within that world that itself seems very big. The alternative is not to renounce your advisor, but simply to reach out and take a broader view.

(9) Turf

I spoke of a growing field as an "expanding universe", but what exactly does it mean to say that a field is growing? Of course, on one level a field grows when more people join it. But that doesn't explain much. Nor does it explain much to say that a field grows when more money becomes available to fund its research, though money is surely not a trivial matter. At a more fundamental level, the size of a field is determined by the turf that it has staked out. My choice of the word "turf" is a little misleading, in that actual literal turf -- geographic territory with grass on it -- exists in a fixed quantity, so that the phrase "turf war" connotes a bloody, petty, zero-sum game. But that's not what I mean here. In the research community, turf arises when an intellectual leader defines a research agenda -- that is, provides a rhetoric for articulating research topics, arguing their importance, and defending their legitimacy. Having been made researchable, those topics can now be turned into refereed journal papers, and thus into grant proposals, promotions, and careers.

Here are some examples. When Herbert Simon and his cohorts founded artificial intelligence in the 1950s, they created turf. In fact they created a huge amount of turf, since the general formula of using computational structures in analyzing human mental life can be applied in thousands of ways. Just pick a phenomenon of human mental life (choosing, remembering, planning, improvising, etc), select or devise a computational structure that seems generally analogous to it, build a computer program, and talk about the program in ways that make it seem similar to what people do. Other examples of

research programs that create turf include Richard Posner's revival in the 1970s of the economic analysis of law (pick a legal issue and apply the language of supply and demand to it) and Noam Chomsky's founding in the 1950s of the modern study of syntactic analysis by means of formal language theory.

What's really striking about the case of Chomsky is that his actual territory of research concerned some extremely narrow questions about the formal relationships between certain kinds of grammatical structures, for example when assertions ("John took a six-pack to the party") become questions ("What did John take to the party?"). Even though these questions are tiny footnotes in the big picture of linguistics, Chomsky nonetheless managed to found an enormous research enterprise, one which many linguists have been brought up to regard as nearly the whole of the field. Chomsky was successful in founding such a large research program for a simple reason: formal language theory provides the intellectual tools to manufacture researchable topics. Accordingly, every paper in Chomskyan linguistics -- including several subfields of linguistics that broke off from Chomsky's own projects while retaining nearly all of the intellectual foundations that Chomsky created -- is written according to a sort of grammar that Chomsky defined and institutionalized.

These examples point to the actual nature of turf. In order to do research, and in order to publish your research, you need a research topic. Turf is, in part, a method of manufacturing research topics, a formula for producing the raw material from which people make their careers. But turf must be defended. On a small scale, you can only publish your research if you can defend it to the satisfaction of the journal's referees. And on a large scale, a research program depends for its funding and other resources on its reputation in the larger research community. It is important to distinguish here between two kinds of legitimacy that research needs. In a narrow sense, the claimed results must be seen to follow from the premises. But in a broad sense, the research topic itself must be seen as legitimate: that is, as novel, conceptually coherent, defensible in its working assumptions, intrinsically important, likely to lead to practical applications, likely to lead to more productive research, and so on. The precise criteria will depend to some degree on the field (engineering is evaluated differently from history), but every field needs someone to put up a fight when the legitimacy of the field's research topics comes into question. And many topics require a great deal of defending, given that the many idealized assumptions, unmotivated choices, and unredeemed IOU's they entail. That is what a visionary founder like Simon, Posner, or Chomsky does. These guys don't just publish technical papers within their field -- what Aristotle would call "esoteric" work, that is, work that is directed to the community of like-minded researchers within the field. They also publish "exoteric" work, that is, work written for a broad audience that explicates the field and defends it against critics, either explicitly, by answering the critics' charges one after another, or implicitly, by providing the field with conceptual and rhetorical foundations that are meant to be understood by insiders and outsiders alike.

These sorts of exoteric apologetics for a field's turf are one more important way in which people become dependent on their thesis advisors (or, indeed, on their advisors' advisors). If you grow up intellectually within the small world of a particular field, you will never be called on to defend the legitimacy of your research topic. You will probably read the founder's exoteric texts, and you will learn to talk the field's rhetoric, but you will probably not have occasion to really internalize the arguments of the field's opponents. Many people reach mid-career in this position, and I believe that it induces in them a kind of vertigo: they have staked their careers on the continued viability of a chunk of turf that they did not create and cannot defend, and if that turf loses its legitimacy then their careers will evaporate. It takes a lot of reading and networking to establish yourself in a different research community than the one you were trained in, and it's especially hard if your training has not encouraged you to develop a robust intellectual life outside the fine details of your particular lab's research program.

This is, in my opinion, a major cause of some of the less fortunate cultural phenomena of research world, including us-and-them stereotyping of other research communities and a tendency to make a virtue of narrowness or to overinflate the real scope and potential of the field as it stands. I believe it

also explains the fury with which many researchers respond to any criticism of the foundations of their research enterprise. On one level, the organizing ideology of the turf routinely caricatures opponents as irrational, unscientific, etc, so that critics are heard to be saying things that are literally crazy. After all, most people's fields seem like whole universes to them, and networking is very often confined to people who share the same ideology. On another level, the researchers themselves are unconsciously terrified that their careers will explode if the criticism succeeds. As a result, they are motivated to exaggerate the extent to which the real concrete results of the research program have established the truth of the intellectual school within which they work. These pathologies are not universal, of course, and they vary greatly in their intensity. By describing them, I want to help you identify them and avoid falling into them. I particularly want to warn you against cults of personality. Too often people in the research world are honored in proportion to the amount of turf they created, and not in proportion to their intelligence and goodness. If you can shake off this bad habit then you can start honoring the right people, and honoring them in the right way.

(10) Institutionalization

When you are a student, you tend to take for granted the whole institutional framework that you are being socialized into. You might complain about it, and you might even spin conspiracy theories about it, but you do not have the information that would be necessary to understand what the institution really is and how it really works. This article is intended as part of the solution to that problem. Having explained how research institutions work on a micro level, then, I want to explain where they come from. Let's take a simple case: a workshop. You could start a workshop yourself; I explained the procedure back in Section 6 under the heading of "intellectual leadership". If you can round up a critical mass of attendees, then you just do it. Your workshop meets, everyone is happy, and the idea circulates of maybe doing it again next year. Maybe someone else takes the lead, hosts it in their own seminar room, and so on. If enough people keep on feeling like the workshop is worth their time, then maybe it takes on a life of its own. If your emerging theme happens to define an expanding universe, then your workshop will grow. Twenty people might attend the first year's meeting, forty people the next year, a hundred the year after that, five hundred the year after that, and so on. At that point you probably call it a "conference", and maybe you and the other central ringleaders organize yourself into some sort of standing committee. Maybe you start an organization, a mailing list, or whatever you build consensus around. Your emerging theme has been institutionalized.

Notice something important: at no point did you have to ask anybody for permission. You just did it. It's a free country, so you used your freedom of association to associate with other researchers who share your interests. You can accomplish a great deal this way. But this is just the beginning of the story. The next step comes when you start a refereed journal. This is something else that you just do, although now you need to persuade a publisher that a critical mass of interest exists to make the journal work as a business. You start a journal in exactly the same way that you organize a workshop: having already built a network, organized some workshops or conferences, etc, you circulate a draft proposal to the ten people whose names everyone would most expect to see on the journal's board of editors, and if you feel like the proposal has some energy behind it then you go ahead. The people in your network will welcome the new journal because they don't feel their papers are being refereed fairly by the existing journals; your journal will ensure that the referees, while presumably maintaining high standards, will at least comprehend the papers and thus be able to judge them fairly.

Above all, a journal gathers up and organizes a community of people who share a complex of research problems, so that everyone can at least anticipate that the referees will regard their problems as legitimate, even if they do not agree with the details of the research itself. That is the service a journal provides to its contributors. In this way, a journal frees its contributors to write the papers that they really want to write, and it ensures that their vitae will now fill up with bona fide refereed journal articles. Of course, the value of those vita entries will depend on the larger community's evaluation of the quality of research in the journal, and for that purpose it will still be necessary for the emerging field's founders to engage in the exoteric apologetics that I explained above. Even so, a journal does a

tremendous service to a community by enabling them to be the judges of one another's work.

A journal is a step on the road to institutionalization, but it still does not explain where resources come from. Let us consider one type of resource, probably the most important of all: job positions at universities and other research organizations. (These job positions are often regrettably called FTE's, for "full-time equivalents", since it is somewhat common for someone to be appointed half-time in each of two different departments.) Where do job positions come from? In the case of universities, they come proximally from deans. When resources become available at the overall university level, the deans engage in politely savage warfare to lay claim to some new positions, and then they allocate the new positions among the departments in their domain. Meanwhile, each department tries to help the dean by describing in compelling terms the turf that is opening up at the cutting edge of their field. As your research area becomes institutionalized, your collective job is to work together to define the emerging turf you see ahead of you, to make the case for this turf seem compelling to your dean, and to help your dean make the turf seem compelling to the university hierarchy. That is where job positions come from. The process is not always sweetness and light, because much of it takes place in committees, different subsets of whose participants are angling to define their own research area as the Next Big Thing for the allocation of job slots. An ascendant field can find itself laying claim to literally dozens of job slots in a period of a few years, and at each step the field's members will be working their networks furiously to produce a steady stream of high-quality candidates for the jobs. Maybe this is how you got your own job.

(11) Routinization of charisma

Now that I've explained how to institutionalize the new research area you've founded, notice something important about institutions: they arise through individual initiative. This fact has many consequences. When you begin your career in research, you will encounter a landscape of already-established institutions -- they will be called "fields", "journals", "conferences", "agencies", and so on -- and every one of those institutions will have arisen through exactly the same kinds of individual initiative that I am recommending to you. Someone built a network, articulated an emerging theme, organized people around it, connected the emerging constituency with a supply of resources, and created new organizations. Those new organizations then settled down and took on a life of their own.

Institutionalization thus entails a process of maturation: from the initiative of a founder to the more anonymous settled patterns of the long term. Max Weber called this process "the routinization of charisma". The founder acts as a kind of entrepreneur, articulating a discourse for the field and creating turf within which others can pursue their careers. As a result, institutions often retain the fingerprints of their founders. If the founder's overwhelming imperative was to defeat an existing establishment, that imperative will probably continue to structure the field below the surface. If the founder's overwhelming imperative was to secure the patronage of military funding agencies, then research problems will probably continue to be framed in that way after the founder is gone -- even if nobody realizes it. If the founder was a poor organizer or had a personal preference for a chaotic institutional style, then that style may persist for decades afterward. Nothing is inevitable, of course, but institutional patterns do tend to persist once they are put in place. And these patterns originate with the founder, and with the opportunities and challenges that the founder originally confronted.

What does the routinization of charisma mean for your own career? Several things. (1) Don't be fooled by the sense of permanence that every institution projects. Your field's founder -- and especially the founder's students -- codified a fragmentary mess of ideas into survey papers, syllabi, and textbooks, all of which are supposed to look seamless. They're not seamless, though, and you should assume everything is much less stable and coherent than it appears. (2) To find the seams, you should study the history of your field. Go back to the founding documents, and get old-timers talking on social occasions. Understand the context in which the field was founded, and look for left-over patterns that are no longer relevant in the present day. It's alright to have respect for founders, but realize that they are mere human beings, products of the times and places in which they lived. (3) When you do discover these obsolete patterns, deprogram yourself. You will inevitably have ingested

a sprawling network of unarticulated assumptions into your own thought patterns, and if you can liberate your mind then you can improve your research. (4) When you start creating institutions yourself, be responsible. You don't want your personal quirks -- or your short-term opportunism, rivalries, and greed -- to be transformed into settled canons that get taught to generations of unsuspecting students.

(12) Imperialism

In order to grow, a research community must create more turf -- that is, broader and broader territories of legitimately researchable topics that the community's members can publish on. Because turf is not a fixed quantity, it is often possible to create new turf within the existing boundaries of the field. In this sense, turf is "nested", meaning that people build their careers and reputations by mapping out territories of researchable research topics within the broader continent that the field's founder(s) had already mapped. Thus, for example, the turf of artificial intelligence, having been mapped out in a general way by Herbert Simon and others of his cohort, subsequently developed well-defined subterritories, such as AI subfields of "planning" and "machine learning". In each case, a student or student-of-a-student of one of the field's founders made their career by institutionalizing the new subfield: articulating an emerging theme, building a network around it, organizing meetings and journals for the network's members, and so on. There is nothing wrong with this, of course, if it's done well. I just want you to see the pattern. Similar things have happened in many other fields.

Of course, I do not mean to suggest that the process is mechanical, or that its success is guaranteed. The AI subfields of "vision" and "robotics" for example, ended up being institutionally outside the AI community, simply because the people who were doing well-regarded work in those areas were largely situated within other communities, such as neuroscience and mechanical engineering. So the boundaries between different research communities are variable.

And that brings me to the concept at hand: imperialism. One way that fields create new turf is by applying their organizing concepts and methods to subject matters that have historically been the "property" of other fields. Economists of the dominant neoclassical school, for example, have gone to great lengths to portray all phenomena of human life, from education to child-rearing to the fine details of individual cognition, as examples of neoclassical ideas about economic rationality and allocative efficiency. Scholars in the fields that they have invaded, sociologists for example, are often horrified by the strange and extreme violence that the economists' formalizations appear to inflict on their proprietary subject matters, and much gnashing of teeth has ensued, together with some genuine attempts to build bridges. Given the workings of the institutions, however, sniping at the invaders does little good. So long as they can institutionalize themselves, establishing organized research communities whose members are called upon to evaluate one another's work, external criticism must be taken to the larger and slower court of public debate and institutional review.

Economics is probably the most imperialistic of all research fields, but the process is nearly universal. Careers require turf, and they require coherent communities that can collectively defend their turf. So many research communities try continually to apply their overall "story" to new subject matters. These campaigns can lead to faction and warfare. Movements can develop pathological ideologies to justify their imperialism, in extreme cases labeling other work as "old-fashioned" or denigrating any allocation of resources to others as "lowering standards". Other cases are not pathological at all, and simply represent healthy competition. The dynamics are complicated, and they are hard to see, except from the standpoint of the highly-networked individuals who staff academic hierarchies and sophisticated funding agencies. To watch them happening, however, all you really need are some basic concepts (like the ones I am explaining here) and the disposition to build far-flung professional networks.

(13) Segmentary politics

As the last several paragraphs suggest, political life in the research world consists largely of

contention for resources among various research communities. To get some perspective on these political processes, it helps to understand the phenomenon that anthropologists call segmentary politics. Let us imagine for the moment (simplifying greatly) that society is organized hierarchically: households belong to neighborhoods, which belong to towns, which belong to regions, which belong to nations, which belong to broad cultural groups. If you look carefully at a town, you might find that the people in adjacent neighborhoods are continually struggling with one another. But if one town attacks another, those conflicts might be cast aside as everyone rallies to the defense of their town. Rivalries among towns might likewise subside as tensions arise between regions, but these tensions might dissolve temporarily when war threatens between nations, and so on. Each element of this picture -- a household, neighborhood, town, region, nation, or broad cultural group -- is called a "segment", and segmentary politics consists of an endless negotiation of conflict and solidarity among adjacent segments. Of course, the picture can be more complicated when groupings cut across borders, for example in former colonial areas where national borders are randomly related to the borders among cultural groups. But even the simple picture is useful as an antidote to the even simpler picture of undivided national loyalties.

As you start participating in the institutional life of your field, you will probably notice segmentary politics yourself. Individual members of a department may dislike one another, but they may find it in their interest to remain allies in the department's factional struggles. Those factional struggles may in turn be put aside when the department is threatened in some way, or when various departments are making their case for increased resource to the dean. Within the invisible college of a research community, likewise, segmentary politics might motivate opposed tendencies to pull together long enough to present a unified front to a funding agency that is thinking of starting a new program in their area. And the different schools of thought within a discipline might organize to fend off imperialistic assaults from other disciplines around them.

Segmentary politics is distasteful. In describing it, I certainly do not mean to praise it. You will probably find yourself engaging in it for self-defense if nothing else. But your real job, in the long term, is to transcend it. That is what networking is for. The broader and stronger your network, the less subject you are to the randomness of people's local rivalries. This is one reason why I have editorialized here against disciplinary bigotry: the too-common stereotyping of one discipline by another. The argument against bigotry can be generalized: the conflicts at every level of the segmentary hierarchy are usually organized by stereotypes that have arisen over years, if not decades. Some of these stereotypes may perhaps be justified: despite all of your own best efforts to identify shared values with people in various fields, there may remain certain intellectual orientations that seem completely worthless to you. But at least these will be considered opinions, or as considered as you can make them, and not the uncritical acceptance of other people's stereotypes. And you should remain open, looking for previously unsuspected points of intellectual or moral contact with fields that have previously seemed alien to me. By maintaining this attitude of openness, you can avoid mindlessly closing yourself off from potentially new and constructive directions of networking.

(14) The role of rational debate

I've been talking about "politics", but many people at the beginning of their careers wonder what "politics" means. After all, many people equate politics with corruption, and they feel as though engaging in politics means instant damnation. It is important, therefore, to get a positive conception of politics. A good place to begin is with the role of rational debate. To make the problem concrete, let us imagine a faculty meeting where decisions are being made about which candidate to hire for a job. Most such meetings are conducted according to a formal rulebook such as Robert's Rules of Order that gives everyone a chance to make motions, offer arguments, call for votes, and so on. In that sense everyone is formally equal. But we all know that other things are going on behind the scenes. People come into the meeting with their agendas, their coalitions, and so on. What, one may well ask, is the purpose of holding a rational-looking debate, when the fix is probably already in?

Implicit in this way of asking the question are two stories. On the first, naive story, everyone has an

open mind and wants only the best for the school and its students. The naive story suggests that the meeting will be a shared, rational inquiry into the outcome that is best for everyone. On the second, cynical story, everyone is angling for power. The cynical story suggests that rational-looking debate is purely for show, and that the outcome is already set. In fact, the reality varies a great deal, and is almost always a mixture of the two stories. A healthy academic department will be somewhat fluid in its politics, neither strictly hierarchical nor rigidly factionalized, but consisting of a shifting map of different groupings who see things in different ways, and who need to remain on good terms with one another because future issues may require them to form unexpected alliances. In that environment, rational debate does serve a purpose: most issues will have their undecided swing votes, and whoever communicates best with those swing voters will win. Of course, not every department is perfectly healthy, and human beings will always have failings. If you are on the losing side of a harsh political division, then your goal should be to leave, and networking is the best way to go about that.

Whatever the case, you should understand that "politics", whether naive or cynical, always starts with the commonalities that people have established in their discussions with one another. If you don't want to become enmeshed in "politics", in the negative sense of that word, then you should cultivate the skill of identifying points of intellectual overlap with other people. Don't let your pride get in the way by defining your intellectual agenda in one inflexible way. I'm not asking you to compromise your values, or to pretend to believe things that you really don't. There are lots of ways of explaining various aspects of your intellectual interests, and you will navigate in political space much more readily if you decide to articulate the versions of your interests that establish points of contact with particular people. Once you do this, the dichotomy between the naive and cynical pictures of politics starts to break down: you will make common cause with people in an honest way, and they will understand that you are on their side. Political coalitions will emerge in a natural way, and you will be in the middle of them. I will discuss these articulation of commonalities further in the next section.

(15) Reverse engineering

I want to start the transition to the final section on ethical issues by making explicit a concept that has been implicit at many points along the way. In your new career as a researcher, you are entering a complicated set of institutions whose participants occupy a variety of different positions. You have to deal with these people, and you will get things done by building consensus with them around ideas and projects that you find important. Because these people have different positions than yours -- department chair, dean, funding agency program manager, PhD student, journal editor, etc -- communication with them will not be automatic.

Here is a way to think about it. Everyone has stuff going on in their heads -- questions, concerns, agendas, precedents, peer pressure, and so on -- and you can communicate with people better if you understand how they work. Partly this means understanding them as individuals, with their own backgrounds, histories, ideas, peculiarities, whatever. So if you're going to talk to someone, and something important is at stake, you should try to talk to someone else who knows them first. That said, though, much of what's going on inside people depends not on their personalities but on their positions. Every dean has certain concerns, and so does every PhD student, every department chair, and so on. If you are talking to someone whose shoes you've walked in, a PhD student for example, then you have a small chance of empathizing with their concerns (assuming that you haven't forgotten entirely what it was like). But if you are talking to someone whose world you cannot imagine, such as a dean, then you are likely to make mistakes.

The concept you need is reverse engineering: figuring out what the people are likely to care about, and then speaking to that. I am not talking about manipulation, and I am not talking about telling people what they want to hear. The point, rather, is to anticipate what issues they people will have, and to make sure that what you're proposing takes those issues into account. Here is an example. In Section 9 on job-hunting above, I described one way to write a letter of recommendation: gather all the good things you can think to say about someone, and organize those good things into a coherent story. That's a pretty good formula. But a better formula is to start from the concerns of the people

who are likely to be reading the letter. universities and other research institutions are full of evaluation processes, and central to all of them is a dilemma: people are made to prepare defensible evaluations of research in fields where they have little or no expertise. Everybody realizes that this is a problem, and almost everybody is responsible about reaching beyond their own knowledge. That is what letters of recommendation are for: they are evaluations from people who know the work. Yet those letters don't fully solve the problem. Someone has to interpret the letters and convert them into up-or-down decisions that they can justify. What to do?

The major idiom for these justifications, it turns out, is comparison. Is this person the best in their field? How do they compare to other people at similar levels of advancement in the field? How does this program stand in some magazine's reputational rankings? That is how people like CAP (the Committee on Academic Personnel that I mentioned above) will be thinking. A letter-writer, therefore, is well-advised to speak that same language. An expert recommendation letter will say things like, "In preparing this letter, I conducted an informal exercise in which I assembled a list of several other prominent scholars at this person's level of advancement, and in doing so I found that this person's work is clearly ahead of the pack in terms of this, that, or the other thing". That's reverse engineering.

The concept obviously generalizes. In various sections above, I have explained what various sorts of people are worried about. Department chairs, for example, have to get courses and committees staffed. PhD students on the sidelines of faculty hiring want to get faculty hired who can teach the courses they want to take. In each case, you can accomplish a great deal by showing that you are aware of these concerns. You don't have to make them your responsibility, but you should not try to evade them or get around them. If someone has a valid concern, then you should get that concern on the table and cooperate in addressing it. The situation is harder, of course, when you're dealing with someone whose concerns are not valid, or who is presenting concerns as valid that are actually disguises for other agendas. In those cases all you can do is put your own valid concerns on the table and negotiate. But don't get into the habit of acting like everyone else's concerns are just negotiating positions. That's not a healthy way to live.

(16) Demographic tidal waves

When we speak of the university as an "institution", the suggestion is that things stay pretty much the same. But the institution does change, and you need to understand how. One source of change is information technology, but a much more important source of change is demographics. Let me just consider the United States. After World War II, a huge number of soldiers came home from the war and went to college on the GI Bill. The university system expanded tremendously to accommodate this new wave of students. Those same students also had a tremendous number of children, the famous "Baby Boom", and when those children grew up, the university system kept expanding to accommodate them as well. The federal government's research establishment grew explosively at the same time, and much of this money went to universities. These generations -- the GI Bill and the Baby Boom -- took the concept of an expanding universe for granted. The job market was so strong that they could take chances with their careers. Beginning in the 1980s, however, that picture changed. Student numbers stopped growing dramatically, and the academic job market contracted accordingly. Qualified college teachers were so numerous that many colleges moved away from tenure-track faculty and toward exploited part-timers. Academia started getting a bad reputation as a career choice.

That situation is about to change, for two reasons: (1) the Baby Boom generation is going to retire, and (2) the Baby Boom's grandchildren are headed to college. The numbers in each case are overwhelming. The University of California, for example, plans to hire about 7,500 new faculty members in the next ten years -- which is more faculty than it employs right now. In fact, higher education planners assert that it will be physically impossible to accommodate all the students who will be ready for college over the next decade. Despite what you have heard, therefore, this is the best time in human history to be entering the research field. The networking skills that I have been

presenting are crucial when the job market is scarce, because the Baby Boom generation's easygoing career strategies certainly don't suffice. But networking skills will also be useful during the good times ahead, when the university will be completely remade in a short period.

SECTION 12. Positive Leadership

The last section points toward the ambivalent nature of the research world, and as you become well-connected you will start to face the moral issues that the professional world inevitably brings. Before talking about those moral issues, I want to make sure that the bad dynamics I've been describing haven't tempted you to cast off the optimistic and constructive tone of my advice in favor of the negative stereotypes about networking that prevail in the culture. Don't become a cynic. It will make you a bad person and a bad influence on others. You really must believe this: if you think that the whole universe is evil then you are evil yourself. I do realize that some people are out there selling their souls. And the expanding universe of an emerging discipline will always attract opportunists who are gung-ho about networking and whose research is simply a shallow excuse to keep their hand in the network-building game. That is not the way of life that I am recommending for you, and I want to make sure that you distinguish between this negative approach to networking and the positive and constructive approach that I have been describing. The main purpose of this section is to make the distinction between the negative and positive approaches to networking as clear as possible, in order to help you develop a clear ethical sense in an unfamiliar professional world.

Research institutions

Let us start with an aerial view. Imagine yourself in the sky looking down on the millions of researchers, in every field, all continually building their networks, organizing their conferences, editing their journals, interviewing for jobs, and so on. I have described the process by which these people institutionalize their emerging fields, but the idea of an institution has a more fundamental meaning as well. Think, for example, of the institution of a journal. No laws anywhere explain how journals ought to run. Each journal sets its own rules, based on the sensibilities of the people involved and the precedents that are available from existing journals that the people are already familiar with. A journal editor might introduce small innovations such as double-blind refereeing (where the referees are not told who wrote the papers they review) or a department of the journal for short papers. A really energetic journal editor might even organize a more radical change, such as a shift to online publication. Nonetheless, the journal as an institution does not change much, for the simple reason that it is held steady in a force field of the intersecting incentives that other institutions create. The academic promotion process, for example, demands peer review as a formal method of evaluating a candidate's research, and so few researchers will submit their research papers to a journal whose procedures do not fit that model. A journal establishes its identity and credibility in large part through the list of prominent researchers who are willing to be identified with it, and so every journal will have a list of prominent people on its title page, whether an "editorial committee", "advisory board", or what-have-you. Authors expect one another to give credit where it is due, and peer review gives these expectations teeth, so the articles in journals are festooned with scholarly apparatus. Because these converging forces remain much the same over time, the institution of the research journal remains much the same as well.

The same goes for the other institutions that organize life in the research community, such as the conference, the job interview, the grant proposal, the advisor-student relationship, and so on. Over time, the participants in every institution accumulate and pass down a body of knowledge about how to pursue individual and collective goals within the framework that the institution provides, and the whole purpose of this article is to explain this body of knowledge in very explicit terms, so that you don't have to learn it by trial and error. Everybody in the research community, or at least the vast majority of people who are successful in it, learn and practice this knowledge to the point that it becomes second nature. If you look down on them from your aerial perspective, you will see them

building networks that you could easily imagine mapping -- and that some scholars actually do map as part of their own research. As publications and communications become increasingly electronic, you could imagine constructing these maps automatically.

It's important to understand how profoundly the buzzing activity of network-building that you observe is organized and supported by the institutions. Recall, for example, the role of the library as a sort of catalog of potential intellectual friends. Most people in the real world do not order their friends from catalogs, for the simple reason that they do not generate the same sorts of elaborate public personae that scholars generate when they publish their research in journals. In fact, most professions do create incentives to build professional networks, and many sorts of organizations and directories do exist to support networking in business and politics, for example. Even so, few professions provide the extraordinary level of institutional support for the process that the research community provides.

The dynamics of networking in the research community, however, do not remain the same over time. The Internet has certainly accelerated the process through electronic mail. In some fields the process has also been altered substantially by the Web, although I remain struck at how little effort the average researcher puts into building a Web presence. Since most researchers already know personally the finite world of individuals whose opinions of their work really matter, and since libraries already make their publications available to the few people who don't get them by exchanging drafts, researchers do not have strong incentives to create an elaborate home page with their publications and so on. That's how powerful the existing institutions are: they bond people so tightly that even the Internet does not radically change the dynamics. The Internet makes it easier for people in outsider universities (such as the former students of people at the insider universities) to stay in the loop, and as I say it speeds everything up. But the fundamental phenomenon, the one that drives and shapes the research community's day-to-day practices, is the complex of institutions that rewards some activities and not others.

That said, I do think that the institutions of research have changed in one important way over time. From the aerial perspective, you could say that the temperature has gone up. The activity of forming and reforming networks is more frenetic than it used to be, and less predictable. In the old days, fields were stable and hierarchical, and they had strong boundaries. You were trained in a field, changing fields was almost impossible, and the concept of interdisciplinary research did not exist. Every field had two or three leading journals whose editors were kings, and they had one major conference, held once a year, where faculty introduced their students to the faculty of other departments in the patriarchal hiring system. That old world is hardly gone, but it is changing. You could say that we are moving from a world of conferences to a world of workshops. Where conferences are large and permanent, workshops are small and temporary. Some workshops are held year after year, but others are transient by design. A conference is an immutable fixture in its participants' lives, but workshops are organized more or less spontaneously whenever network-builders such as yourself manage to articulate emerging themes that motivate a critical mass of their peers to abandon their research for a few days to participate. Workshops are indifferent to the boundaries of fields, and they allow people to join multiple research communities, and to migrate freely from one research community to another as they seek out new research topics that fit their interests and talents. Although it is not without dangers, I think that this shift toward a more dynamic research community is basically a good thing, not least because it calls on everyone to make their own fate by engaging with others.

Disagreement and pathology

That is the big picture, and I think it is a fairly hopeful one. Returning to earth, however, I do appreciate that you will have to deal with the negative and pathological aspects of the institutions as they actually exist. Take, for example, the simple fact that many of your fellow researchers will not share your research interests, and more importantly your values. Although networking is very much a process of picking your friends, nonetheless you will often find yourself sharing a committee or a department with people who you just plain disagree with. What to do? I have given part of the answer already: find something -- anything -- that you agree with them about, and talk about that. Create a

human bond on any basis at all, have a social conversation with them about just those topics, and the rest will follow much more easily.

The next step in dealing with people you disagree with is to learn their arguments. You don't know your own arguments until you can argue the other side. The history of philosophy makes clear that intellectual progress requires that evenly matched schools criticize one another in detail, so that each side feels compelled to overcome the criticisms that the other side has presented (see Randall Collins' book *Sociology of Philosophies*, mentioned above). You should live this deep truth in your own life by really learning the arguments of the people you disagree with. You should also search fearlessly for valid points that your opponents do make admit their errors. Make sure that you aren't denying those valid points, just because your opponents make them. That sort of denial is very dangerous, and you should make a big point of avoiding it. For example, if you're an economist you should admit that markets sometimes fail. If your work is situated on the political left then you should admit that crime is bad. And don't just admit these points: embrace them. Don't just treat them as nasty counterarguments that you immediately trounce with your brilliant come-backs. Rather, accept within yourself that the valid points are valid, and carefully disconnect them from the false ideas with which they have formerly been associated. By submitting yourself to these disciplines, you will accomplish many things. You will present a smaller target to people who disagree with you. You will confound their expectations and throw them off-guard. You will minimize unnecessary polarization and avoid foreclosing potential coalitions. And you will clean the junk out of your own arguments. People aren't stupid, and you need to believe that the people you care about respect intellectual honesty. The arguments that you can't explain away will compel you to invent new arguments, which after all is your job.

Of course, all of this talk about learning arguments requires people to fight fair. But many people, as we all know, do not fight fair. To deal with these pathological people, you need six ideas:

First, you should distinguish between people who are irrational in a general way and people who are irrational on specific topics. When people are irrational, it means that they have been hurt in the past and are afraid that they are going to be hurt the same way again. Oftentimes, you will do something reasonable that superficially resembles a bad thing that some other crazy person did in some other situation. For example, you might propose a new course that falls somewhat outside the usual framework of the curriculum, not knowing that your department went through years of warfare over the framework of the curriculum before you got there. The extreme response you receive from otherwise rational people will be out of proportion to anything you really did. When you do something reasonable and encounter an irrational response, therefore, one approach is to stop and figure out what bad experience the other person has had. Then you can assure them that you aren't going to do the same bad thing that the crazy person did earlier.

Second, you should never try to change or fix pathological people, and you should certainly never persuade yourself that your personal happiness or success depends on changing or fixing them. Fixing pathological people doesn't work in personal relationships, and it certainly doesn't work in professional relationships. Release the miserable people to their misery, refuse to let them into your space, and carry on with your life.

Third, understanding where the pathologies come from will make the pathological people easier to deal with. For example, you will find many assistant professors engaged in pre-tenure psychosis, in which the uncertainty of the tenure process causes them to become delusional, adopt self-destructive defenses, play maladaptive politics, spin conspiracy theories, and generally mess themselves up. Not having been admitted to the inner circles of the institution, they have not sufficiently internalized how the institution works, and so their imaginations fill the vacuum with whatever basic beliefs about the world they happen to have gotten from their childhoods.

Fourth, you need to tell yourself that pathological people behave in pathological ways because they do not understand the positive and constructive view of the world that I am explaining in this article.

Pathological people are pathological because they believe that the world is a fundamentally bad place, and whenever you feel the urge to send them to hell you should understand that they are already living in hell. Of course, when you are confronted with hard-core power freaks it can be hard to tell yourself this. If the power freaks have dug their claws into resources, if they have built an empire of cronies and serfs, if they have recruited others into their distorted view of the world, surely there is a real sense in which they have benefited from their evil, is there not? No, there is not, and this is what you have to tell yourself. When Jesus said that the world is corrupt, and when the Buddha said that the world is illusion, this is what they were talking about. Pathological power freaks think they are in control, but they are hallucinating. If you convince yourself that your success and happiness depend on wresting control of those hallucinations yourself, then you have locked yourself into the same perdition as they have. Let go of them. You will make your success and happiness through networking in ways that are not yet revealed to you, and that have nothing to do with the illusory power that pathological people appear to hold.

Fifth, if a pathological individual happens to attack you emotionally, whether through shouting fits or sarcasm or accusations or whatever, you should learn the proper method for getting the toxins out of your system. The key is to revisit the specific details of the situation. You can do this with your notebook or with a trusted personal friend (preferably not a professional colleague). Simply recount the events in detail. By "detail" I mean the specific actions and words, step by step. Think of yourself as extracting venom from a snakebite, removing each bit of the venom by deliberately revisiting each element of the experience. If you were emotionally hurt, however slightly, you will find yourself tending to describe the events in a vague way, for example by giving paraphrases rather than the actual words or by skipping over details that don't seem important. This is a mistake. The purpose of emotional abuse is to subvert the victim's capacity for rational thought, and you will only regain your rational mind if you carefully extract the toxins from your system. If you find yourself howling for revenge, then you haven't gotten all the toxins out yet.

Sixth, the purpose of networking is to let you escape pathological people by building your own supportive community. The stronger and more extensive your community, the less power the pathological people will have over you. Your network is your personal intelligence system. Your conversations with other people in your network will help you understand how different organizations do things, and they will broaden your thinking by helping you internalize a wider range of perspectives on the institutions and the research. When a network is functioning properly, a kind of electricity runs through it: the excitement of the research, the affirmation that comes from sharing that excitement with others, and the confidence that comes from a continually updated affirmation that your research is finding a real audience. The electricity of a functioning network makes pathological personalities seem less important.

Leadership

Having declared your independence of pathological people and their established ways of doing things, how *will* you achieve the personal success and satisfaction that you seek in your career? The general outlines are probably clear enough from my advice so far: build a network, articulate an emerging theme, organize institutions around it, build another network, articulate another emerging theme, organize institutions around that theme, and so on. It's a cycle. With each pass through the cycle, you will ascend to a new plateau in the professional world, and in your career. You will then build networks and organize institutions with other people who occupy similar plateaux, having built their own networks and organized their own institutions back in their home territories. And then you will use that plateau as a base from which to ascend once again.

The critical intuition is that the emerging themes will become more abstract with each pass through the cycle. When you organize your first conference panel or journal issue, you will probably choose an emerging theme that brings conceptual order to the work of a half-dozen people. That's fine; it gets you started. Once you gain the perspective that a round of professional organizing affords, however, you will find yourself articulating bigger and more encompassing themes, ones that bring order to the

research programs of scores or hundreds of people. Examples of abstract themes that help large research movements to coalesce include "neuroscience", "cultural studies", "communications policy", and "human-computer interaction" -- in other words, the sorts of phrases you see as the titles of journals and conferences. This is where journals and conferences come from: every one of them started when someone followed the procedures that I am describing. The genius of the institution is that it supports this kind of incremental growth: as a new researcher it is impossible to engage with the voices of every researcher in the world, so the institutions are arranged to let you pick a few voices -- the ones that are closely related to your dissertation topic -- and engage with them. Then as your career progresses you can engage with broader and broader ranges of voices. The meritocracy of research starts with peer review, but its essence lies in the opportunity that it provides everyone to ascend in their careers by organizing networks around progressively larger themes. The justice of the system is that engaging with diverse voices makes you honest: you are compelled to reconsider your assumptions on ever deeper levels, and this makes your work more useful to everyone.

Of course, leadership isn't simply coming up with a name, but talking to everyone and developing a language that lets them all recognize themselves as members of an emerging community. This is intellectual leadership in its most general sense, and done honestly it is the best kind of leadership. A leader always has a couple of activities in the works that gather people around emerging themes -- and not just any people but the people whose work seems in the best sense to represent the future. At any given point, then, you will always be involved in organizing a conference, convening a committee, starting a journal, putting together a multi-site grant proposal, founding a research center, or whatever makes sense at a given time. If you're not involved in any such activities then you should figure out what the problem is. Reconnect with your network, articulate emerging themes, build consensus, and move forward.

An especially important type of intellectual leadership concerns research funding. Every funding agency, whether the government or a private foundation, maintains a dialogue with the research community to help articulate the research program that they want to fund. Your job as an intellectual leader is to mediate this dialogue by talking both with your network and with the funders about where everyone sees things going. When you talk to people in your network, you should constantly update your map of the community's collective research agenda. Elicit each individual's research agenda, and then put those research agendas together into orderly wholes. Keep lists of research topics that come up in conversation, sort the topics into outlines, and tell clear stories that give the outlines a unified sense. This is what emerging themes are for, and by continually working to articulate emerging themes you will evolve the language that the research community and the funders use to talk to one another.

This conversation can be organized in many different ways. The National Science Foundation, for example, is largely driven by the research community itself, and intellectual leaders who can organize workshops and assemble their findings into "white papers" play a pivotal role in the process. The incentives to organize such things are strong: if you write the white paper that NSF draws on in defining a funding program, then it is likely that your own proposal will fall squarely within the scope of the program once it gets defined. Other agencies, public and private, are directed more by their own agendas, or those of their patrons, but even in those cases your job is much the same: staying in the conversation and continually offering a compelling vision of the future direction of research, based on your honest sense of where the ideas are heading. Of course, a dialogue by definition goes both ways, and you also lead by articulating the genuine insights in the funders' agendas and synthesizing them with the bottom-up development of agendas in the research community.

This process may sound phony, and it can certainly become phony if it is done badly. But believe it or not, the leaders of funding agencies are usually very intelligent, and their opinions do usually reflect real insight. Of course, a failure of leadership can result in a situation where a powerful funding agency leads the research community around by the nose, imposing arbitrary agendas on it from the outside. But avoiding this kind of failure is precisely what powerful leadership is about. Powerful leadership is far-sighted enough that the relationship with funders is based on a shared vision of

emerging directions for the research.

Now, many people do not get excited at the prospect of articulating research agendas and conversing with funding agencies. They do not see themselves as leaders, and they would rather stay in their labs and libraries doing their work. I say fine. It's a free country. Nonetheless, you have to understand how these things work. Money for your research does not materialize from the clouds, and you don't want to be stranded when the agenda-setting process strays away from the topics that interest you. Participating in the process, if only at a basic maintenance level, means that you retain a degree of control over your life, as well as an early-warning system that prevents you from getting stuck later on. But more fundamentally, as I have emphasized throughout, the networking process is good for your own thinking. Networking serves many functions, but the most important is as a process of collective cognition. When you talk to everyone and listen to their research agendas, and when you write all their agendas down in front of you and look for the emerging theme that brings order to them, you are stimulating the most crucial functionality of your mind: the largely unconscious ability to synthesize fragments into coherent wholes. Down deep, everyone has a drive toward wholeness. This is the force that makes you a more or less integrated human being and not a schizophrenic mess, and it is also the force by which like-minded individuals cohere their thinking and form movements that are intellectually and institutionally stronger than the separate individuals that make them up. In a sense, then, deliberately talking things through with everyone in your network simply amplifies a force toward wholeness that is already operating in everyone's personality. The difference is that it's now a force for the collective good, as well as your own.

Beliefs

At several points in this article I have described the self-defeating beliefs that keep many people from having the careers they want. Dysfunctional beliefs can come from several sources:

- * The culture, for example the idea that networking is necessarily greasy, dishonest, burdensome, "political", or a substitute for "real work".
- * Political movements that have run off the rails, such as the idea that the world is infinitely and hopelessly oppressive.
- * The dysfunctional cultures of particular occupations or workplaces, such as the belief that getting a job requires you to give up your integrity and commit yourself to work that you do not respect.
- * Dysfunctional subcultures of the research world that arise because people in particular situations -- for example, graduate students or untenured faculty members -- lack the information they would need to distinguish between genuine oppression and random paranoia.
- * Traumatic experiences, such as having your work plagiarized, that leave you forever worrying that the same bad thing will happen again, until that worry blows up into an all-consuming worldview.
- * Child abuse, whose survivors often experience the world as an endless series of abusive situations which they cannot escape.

I want to focus particular attention on one mechanism through which people develop negative beliefs. Most people get socialized into institutions such as the research world without anyone ever explaining how the institutions work. For example, few PhD students ever get explicit lessons on the sorts of career strategies that I have been explaining in this paper. What is more, the social world is filled with unspoken rules that keep these things hidden, for example the taboo against boasting or the imperative of explaining one's motives in terms of the general good rather than in terms of self-interest. These unspoken rules help people to get along, but they also make it much harder for average PhD students in complex professional interactions to figure out what is really going on. Most students do acquire up some insight from watching the experts, but they usually do not develop a complex theory like the

one I have been explaining here. As a result, they often perceive their social environment in a relatively superficial way.

Let us consider a comparatively mild misconception that can arise from this sort of superficial perception of the professional world. Some students develop the idea that a professional network is an encumbrance. After all, the more people you know, the more you have to constrain your voice to avoid saying anything that will offend anyone. Isolation is painful, but at least it leaves you free to speak your mind; the alternative is a life of walking on eggshells. Right? Wrong. People who believe such things fail to understand how people change when they articulate shared values. Once you have created a bond with someone based on the values you share, you can go ahead and disagree with them. Having established what you both really care about, you can easily display your agreement on fundamentals before going on to explore your differences on details. If you have not articulated shared values, then indeed you are likely to step on some land mines. The simple fact that they don't know you will heighten the danger of misunderstanding. But once you internalize other people's thinking and allow it to influence your own, these dangers are much reduced. Actively engaging with other people is a way to discover and articulate your own beliefs.

More serious hazards arise as students who don't understand the underlying logic of networking encounter the established power structures of their field -- that is, the networks that have already been built by the people who got there first. Such students often they imagine that the power structures they encounter are immutable. They might listen to the players' conversations, but they don't understand the layers of meaning that people who do understand networking take for granted. Then, based on their understanding of the situation, they devise plans of their own. And because their understanding is imperfect, their plans go wrong. They might try to break into or circumvent the existing structures, only to commit a faux pas or provoke a weird misinterpretation. Or they might try to conform to the seemingly implacable order of things, only to find that they are giving up their integrity and getting nothing in return. They will end up frustrated and alienated, and they will go looking for someone to explain why.

Meanwhile, other students (and faculty with stalled careers) who have screwed up in similar ways will be feeding them negative ideas: the game is fixed, it's all about power, you can't win, everyone is competitive, the whole culture is based on tearing other people down, and to survive you have to join the culture or drop out. Those negative beliefs will always have some slight basis in truth: if you go around looking for confirming evidence, you will certainly be able to find it. But you can find confirming evidence for any belief. The fact is, the people who are trying to sell you such negative beliefs are a cult. Their end in life is to justify themselves, and to that end they want to recruit you. They are dangerous. You should hand them a copy of "Networking on the Network", and then you should walk away from them until they get some better beliefs.

What exactly is wrong with the cult's beliefs? The cultists believe that the social structures around them are static, and that they themselves are isolated. They believe themselves to be powerless, and because they haven't the faintest idea how power works, they honestly cannot imagine what it would be like to get any power for themselves. Is it their fault? Partly yes, partly no. It doesn't matter. What matters is getting and teaching a more positive view. The fact is, every one of the current power-holders of your field acquired their power through the methods that I have been describing. They built networks, articulated emerging themes, organized events, and founded institutions. Your job is not to attack them, but to build networks of your own. Occupy the new ground that is opening up, and when they retire your network can inherit the world, assuming that you even want it.

Building a rewarding career, then, requires positive beliefs. Along the way, I have described some of the positive beliefs that are necessary in order to approach networking in the most productive and ethical way. These include the idea that networking will pay off somehow in the future, even if the exact mechanism is not yet clear. In the remainder of this section I want to talk about what I mean by "beliefs", and I want to describe some of the other beliefs I think you should have.

When I talk about "beliefs", I'm not talking about the intellectual theories you have in your conscious mind, or anything that you reason about at a clinical distance or write papers about with fifty-cent words. Rather, I'm talking about your fundamental, deep-down way of relating to the world. For example, if you believe -- if you take for granted, if you assume, if you presuppose -- that the whole universe is fundamentally bad, and that people are fundamentally corrupt, then I want you to stay away from me, because I submit that you are unable to approach anything in a positive spirit. You expect that everyone is going to shaft you, and so you are going to give up, or act ironic, or treat everything as a meaningless conspiracy, or go around preemptively shafting everyone else.

I want you to give up those sorts of negative beliefs. Instead, I want you to adopt some positive beliefs. I want you to believe that you will get a good job, that you are going to have a productive career, and that you are going to build a supportive network of decent and intelligent people. I want you to believe that you will enter into highly productive lifelong collaborations in which all parties fully express their talents. And I want you to believe that you will build a community whose members continually exchange all manner of resources and services, such as job-hunting information and draft-reading.

Of course, when I propose these beliefs, it immediately becomes unclear what "belief" could mean. I do not mean, for example, that you are going to think positive thoughts and then sit around waiting passively for them to become true. I am not calling for a mindless, naive optimism. Nor do I mean that you can just pick people at random and magically turn them into your productive lifelong collaborators. No magic here. Quite the contrary: your good job, productive career, and supportive network are only going to materialize if you get out there and build them. Work is required. The point is that you have to undertake this work in the right spirit. If you treat networking as an arbitrary chore, or as manipulation, or as social climbing, or a matter of sucking up to the powerful (which is itself a kind of manipulation), then you will get a cynical life of phony relationships.

But why? Why do positive beliefs lead to positive outcomes, and why do negative beliefs lead to negative outcomes? Because your beliefs determine what you see. If you believe that you can build a network of supportive people, then you will be looking for supportive people. Because you will be making distinctions, you will gravitate to the right people and you will shun the wrong ones. You won't try to do things that can't be done, you won't try to organize meetings that people aren't going to attend, and you won't try to wake people up who would rather stay asleep. On the other hand, if you don't believe that supportive people exist, then obviously you won't be looking for them. If you believe that people are all manipulative operators, then you will be looking for games and schemes and angles, simply asking yourself which of them best fits the needs of your own manipulations. When people cannot imagine creating the world they want, and believe themselves to be living in a finite, zero-sum world instead, they build a culture of competition and back-stabbing instead of the positive culture they need. They act in ways that cause their beliefs to come true, and then they conclude that they were right all along. It is only when people believe in a decent world, and are out looking for the elements of it, and watching for the outlines of it to emerge from the fragments that they've gathered along the way, that they have a chance of getting it.

So my point here is not that everyone in the world is perfectly good, or that the whole world is beautiful. I have repeatedly explained how you should deal with the evils and pathologies that you do encounter in the world. A "belief", in the sense that I'm using the word, is not about the world in general, but about a deeper emotional reality. The world may be evil on the surface, but you have to believe that it is positive underneath. Your job is to cut through the surface junk and build a positive life. This is originally a religious idea. In Christianity it's the idea that you should let go of your own agenda and let God lead you to the life He means you to have. But it also takes secularized forms. In Marxism, for example, it is the idea that, below all the division and oppression lies a deeper reality in which people are sociable and cooperative. Of course, some Christians get so wrapped up in sin and punishment that they forget about the positive aspects of their religion, and some Marxists get so wrapped up in persuading people that they are oppressed that they forget about the positive values of social solidarity that supposedly solve the problem. Likewise, you need to maintain a clear sense that

you can build a positive career for yourself, and that the details will become clear once you get out there and start doing it.

My advice should be contrasted with the advice that prevails in American culture, which is to "follow your dreams". I agree that following a dream is better than watching television all day. The problem with a "dream", however, is that you have no way of knowing, at the beginning of your journey, what your ideal life should look like. Lots of people have "dreams" that are completely disconnected from reality. The truth is, the good life that you can build depends on factors that you simply cannot know about until you start building networks, articulating emerging themes, and exercising your leadership capacities. In order to see what opportunities are out there, you need to be open to unexpected possibility. Preconceived scenarios can only narrow your vision.

If you can't come up with a "dream" a priori, then, how should you proceed? What should you steer by? That's what this entire article has been about. Start with a research topic that you find compelling. Do a round of research, hit the library, identify people who should be part of your network, approach those people, talk to them, let yourself change as a result of those conversations, see what themes are emerging in the collective work of your community, follow the directions that you personally find compelling, build networks around those new directions, and repeat. Get yourself embedded in a community of people whose work you respect, and from that embedded point of view you see what opportunities start to become visible. Nobody can start a new institute, for example, unless a lot of different factors come together. Likewise, nobody can found a new field of research just because they have a "dream" in their head to do so. It may be part of your path to start a new institute or found a new field, or it might not. Let go of those a priori scenarios, and instead look carefully to see what is being offered to you in the real world. Work the process, and let it pull you forward.

Perhaps the most fundamental belief you need is that you have choice in your life. Many people simply assume that their lives are dictated by others, and that they are completely hemmed in by powers beyond their control. This belief is obviously a self-fulfilling prophecy, but that doesn't explain why it is wrong. The underlying problem is a false understanding of the nature of freedom. For many people, indeed for the mainstream of Western political theory, freedom means complete individualistic autonomy -- the power to do just exactly as you please in your own personal zone of total autonomy. This belief system is unfortunate because it provides no way of reconciling freedom and relationship. Relationships, on this individualistic view -- relationships of equality, in any case -- are inherently constraining. At best they represent a trade-off in which individuals surrender parts of their freedom in order to get something else. This is totally confused.

I hope to have presented an alternative view: freedom is something that you discover, that you build, through relationships with others. You build networks around the issues you care about, you grow and change through the relationships that result, you articulate the themes that are emerging in the community members' respective work, and through community-building and leadership you get the resources to do the things that you most care about doing. It's true that this method will never give you arbitrary power. But the desire for arbitrary power is not freedom -- it is a particularly abject form of slavery. If you can let go of preconceived ideas then you are free: you can choose who to associate with, and as you build your network you multiply the further directions that you can choose to go. You also multiply the unexpected opportunities that open up, the places you can turn for assistance with your projects, the flows of useful information that keep you in contact with reality, the surveillance of the horizon that keeps you from getting cornered by unanticipated developments, and the public persona that ensures that people keep coming to you with offers that you can take or leave. That is what freedom is, and it is yours if you will do the work.

Power

If you follow my advice then you will acquire power. If you carry around the prevailing cultural stereotypes about power, then you may be surprised at the reality of power when it happens. For example, simply having a network confers power. If you know two people, A and B, who do not

know one another, then they might ask you about each other. Is this person smart? A good speaker? Well-suited to serving on a certain committee? That is already a kind of power. If you are trapped in a negative, conspiratorial view of the world, then you will answer these questions in whatever way best suits your own "side" in some imaginary war. You may not even be thinking about whether the person in question is smart, a good speaker, and so on, but rather about whether it suits your private game to be promoting or frustrating them.

You might even take this mode of operation for granted, having picked it up from the culture around you, without stopping to reflect on whether it really serves you. Besides, being asked about the person has made you feel important, and exercising arbitrary authority over them has made you feel even more important. This kind of nastiness can become intoxicating, and paradoxically its root cause is the down-deep belief that you are not powerful, and that your actions have no real consequences in the world. It is in such simple situations -- being asked their opinions of others -- that many people first face up to the consequences of having actual power in the world, however slight. You might serve as a referee for a paper, in which you can rant intemperately without being known to your victim (though the editor of the journal will know perfectly well). You can fail to mention someone's work to someone else even though it was relevant to the conversation. You can go along with stereotypes that distort the seriousness of another field's research methods. And, being intelligent, you can rationalize any of this. After all, I have told you myself to shun negative people, and you can tell yourself that those others are all negative, when in fact they are simply inconvenient.

So right away, early on in your career, the question will arise of what kind of power you want to have. It is good to be powerful, but only in the correct sense of the term. People with the right kind of power, in my view, do not need to manipulate or control others. To the contrary, they are know that they are well-served when others grow and find their own directions, so they happily support everyone in their growth. They don't take responsibility for others' growth, which is a different question. They speak to the healthy part of a person, and they are concerned to draw out and articulate the brilliant ideas and worthy vision that lie beneath the surface of whatever anyone is saying. For example, they don't try to enroll students as acolytes in their empire-building strategies, but honestly ask what's best for each student's own development, confident that their knowledge, vision, and connections will have an important influence on the student's development in any case.

If these considerations seem overly abstract and New Age, let us consider their consequences for the unfortunate phenomena that I described in the previous section: professors' incentives to narrow their students' thinking, and everyone's incentives to defend the intellectual turf that legitimates their research topics. These "incentives" are illusory, of course, but they are deeply ingrained nonetheless. Where does the problem come from?

You may recall my passing mention of opportunists who do superficial research as an excuse for empire-building. And you may well ask yourself, where is the line here? How do I know whether I am a serious, moral individual, or whether I am a superficial operator? Superficial operators can talk the language of empowerment as well as anyone, and it is very hard to devise an objective test to distinguish the operators from the serious people. The real distinction, down deep, is that a real leader talks to everyone, thinks deeply into the ideas, draws to the surface a real insight about where the ideas are going, and builds consensus around the result, whereas an operator talks to everyone, sees which way the wind is blowing, and hustles to get out in front of it. By networking widely and listening, the operator hopes to get in on the ground floor of something, anything, it doesn't matter what -- surfing on issues, and from issue to the next. The real leader is a dynamic force for an intellectual movement that is genuinely creative, and that keeps being creative in the future. The operator, on the other hand, is actually a follower, a parasite who has learned how to utter the words that make people in an emerging intellectual movement feel good.

If the serious scholars don't do their networking, then a vacuum opens up, and operators will seize the opportunity. That's one more reason why serious scholars should build networks. Even so, the line between serious scholars and operators is not always clear, and as you get involved in intellectual

leadership, you will definitely feel the temptation to operate. You will find yourself saying things because they mobilize people and not because you really believe them. And it's hard to tell the difference, given that being socialized into a new profession inevitably means learning a new language. You will probably sound fake to yourself much of the time, as you learn how to speak this language, and so it's easy to slip into manipulation instead of real leadership. From that kind of manipulation, it is a short step to the sorts of aggressive empire-building that I described above: encouraging others to talk your own language rather than coming up with their own. That is the deepest moral question that you will face as you engage in professional networking, and you might be surprised how quickly you have to face it.

APPENDIX: Some References on Networking

Here are some general guides to professional networking, without any special reference to electronic mail. Note that the number of new books about professional networking has started accelerating some time in 1994, though I haven't been reading these systematically.

Wayne E. Baker, *Networking Smart: How to Build Relationships for Personal and Organizational Success*, New York: McGraw-Hill, 1994. A fairly comprehensive book on the networking process, with greater emphasis than most on strategy.

Wayne E. Baker, *Achieving Success Through Social Capital: Tapping Hidden Resources in Your Personal and Business Networks*, Wiley, 2000. A new book from Baker that I haven't seen yet.

Donna Fisher and Sandy Vilas, *Power Networking*, Austin: Mountain Harbour, 1992. This is probably the best all-around book on the subject. It abstracts a long list of guidelines that apply just about as much to research people as to the corporate people who are their main audience.

Ronald L. Krannich and Caryl Rae Krannich, *The New Network Your Way to Job and Career Success*, Manassas Park, VA: Impact Publications, 1993. Another worthwhile networking book, aimed more at job-seekers, with a fair amount of useful concrete advice.

Ann Boe and Betty B. Youngs, *Is Your "Net" Working?: A Complete Guide to Building Contacts and Career Visibility*, New York: Wiley, 1989. Another book in the same spirit, based on stories about mistakes people make in their networking activities. I find it less useful than the others, but it may well help those who regard themselves as complete beginners.

Jessica Lipnack and Jeffrey Stamps, *The Networking Book: People Connecting With People*, New York: Routledge and Kegan Paul, 1986. This book looked useful when I happened across it in a used book store near the University of New Mexico one day, but I haven't had a chance to evaluate it yet.

Harvey Mackay, *Dig Your Well Before You're Thirsty: The Only Networking Book You'll Ever Need*, New York: Currency/Doubleday, 1997. I haven't read this one either, but I do know that this guy has a quite astonishing gift for networking, or at least a gift for getting celebrities to endorse his books.

Tom Jackson, *Guerrilla Tactics in the New Job Market*, second edition, New York: Bantam, 1991. An inspired book on the networking that's involved in finding a job through the "hidden job market" of hiring referrals.

Thomas J. Stanley, *Networking With the Affluent and Their Advisors*, Homewood, IL: Irwin, 1993. This book is probably the least directly relevant to research people, as should be obvious from its title, but nonetheless it should be a good resource for those wishing to think more deeply about professional networking. Its focus is on the different roles that someone can play as part of a network.

Ford Harding, *Rain Making: The Professional's Guide to Attracting New Clients*, Holbrook, MA: Bob Adams, 1994. Another business book that might be useful in the same indirect way.

Here are some Web-based resources:

Marie desJardins, How to be a good graduate student. An article broadly similar to this one but aimed more at beginning graduate students. It is available on the WorldWide Web at:

<http://www.cs.indiana.edu/HTMLit/how.2b/how.2b.html>

David Chapman, How to do research. A collection of advice for graduate students, including a discussion of the "secret paper passing network". <http://www.cs.indiana.edu/mit.research.how.to.html>

Heather A. Carlson, Advice for academia. A lengthy Web page of bullets and links. It was originally compiled for a UCSD workshop for women graduate students though most of it is applicable to everyone. <http://mccammon.ucsd.edu/~hcarlson/Women.htm>

Advice columns from the Chronicle of Higher Education are gathered on the Web at:

<http://chronicle.com/jobs/archive/advicearch.htm>

You might need a password, which you might be able to get from your department or library.

Symposium: Advisors and the Dissertation Proposal, several articles from the journal PS: Political Science and Politics 34(4), 2001. This may require a password or a site license; if so, talk to your librarian. <http://www.apsanet.org/PS/dec01/toc.cfm>

Hal Varian, How to build an economic model in your spare time. This is a short chapter that tells graduate students in economics how to invent, work through, present, and write up a mathematical model. Although it is aimed specifically to economics students, many of the ideas generalize.

<http://www.sims.berkeley.edu/~hal/Papers/how.pdf>

Patrick Winston, Some lecturing heuristics. These are the bulleted conclusions from PHW's legendary self-referential lecture about how to give a lecture.

<http://www.cs.dartmouth.edu/~brd/Teaching/Giving-a-talk/phw.html>

Bruce Donald, How to give a talk. Geared more to technical talks organized around overhead transparencies. <http://www.cs.dartmouth.edu/~brd/Teaching/Giving-a-talk/giving-a-talk.html>

Thomas W. Rishel, The academic job search in mathematics. The basics.

<http://www.ams.org/employment/academic-job-search.html>

Thomas Hull, Michael A. Jones, and Diana M. Thomas, Interviewing for a job in academia, Notices of the American Mathematical Society, November 1998, pages 1353-1357. Emphasizes the questions you should have ready answers to. <http://www.ams.org/notices/199810/comm-hull.pdf>

Mary Corbin Sies, Academic job interview advice. A professor's advice based on experience.

<http://www.otal.umd.edu/~sies/jobadvice.html>

Plus more questions: <http://www.otal.umd.edu/~sies/jobquess.html>

Trina Sego and Jef I. Richards, PhD interview preparation guide for positions in academia. Emphasis on questions you should ask and not ask. <http://www.utexas.edu/coc/adv/JR/InterviewPrep.html>

Bonnie A. Nardi, Steve Whittaker, and Heinrich Schwarz, It's not what you know, it's who you know: Work in the information age, First Monday 5(5), 2001. Based on ethnographic studies of employees in high-tech industries, this article argues that the resources that are exchanged within professional networks are increasingly replacing traditional institutions.

http://www.firstmonday.org/issues/issue5_5/nardi/

Adviser, Teacher, Role Model, Friend: On Being a Mentor to Students in Science and Engineering, National Academy Press, 1997. So you'll know what good advising is.

<http://www.nap.edu/readingroom/books/mentor/>

The modern project of articulating guidelines for networking originates (more or less) with feminist authors circa 1980. Their books still hold some interest:

Carol Kleiman, *Women's Networks: The Complete Guide to Getting a Better Job, Advancing Your Career, and Feeling Great as a Woman Through Networking*, New York: Lippincott and Crowell, 1980. Aimed at women professionals and executives who wish to set up relatively formal networking organizations.

Betty Lehan Harragan, *Games Mother Never Taught You: Corporate Gamesmanship for Women*, New York: Rawson, 1977. Although not centrally concerned with networking, I mention this book because of its cultural influence as the first hard-hitting how-the-world-really-works book for professional women. Its ideology, which has shaped many feminist discussions of networking since then, reflects both the strengths and weaknesses of the feminism of that era. One of the weaknesses is its inattention to social class; it explains that men learn how the world works through playing football, even though this would predict that working-class men would be as successful in business as their wealthier brothers.

And here are a few references for literature on contemporary patterns of networking:

Howard E. Aldrich and Mary Ann von Glinow, Personal networks and infrastructure development, in David V. Gibson, George Kozmetsky, and Raymond W. Smilor, eds, *The Technopolis Phenomenon: Smart Cities, Fast Systems, Global Networks*, Lanham, MD: Rowman and Littlefield, 1992. Approaches to rationalizing and managing the networking process through social psychology, network mapping, and systematic development of networks.

Thomas J. Allen, *Managing the Flow of Technology: Technology Transfer and the Dissemination of Technological Information within the R&D Organization*, Cambridge: MIT Press, 1977. A scary book of experimental and quantitative studies of information flow in groups of research and development people. Many of the results are things that you've always known but that hardly anybody acts as if they really believed, for example that the most productive groups enjoyed a steady flow of ideas from other groups and other disciplines.

Pierre Bourdieu, *Homo Academicus*, translated from the French by Peter Collier, Cambridge: Polity Press, 1988. A difficult and perhaps cynical but nonetheless very insightful sociological study of the ways in which academics accumulate capital through the symbolic politics of their writings and institutions. Bourdieu himself is a master of the art and should know.

Diana Crane, *Invisible Colleges: Diffusion of Knowledge in Scientific Communities*, Chicago: University of Chicago Press, 1972. A highly influential study of academic social networks. Because these networks cut across the boundaries of individual colleges, they are called "invisible colleges".

Ronald S. Burt, *Structural Holes: The Social Structure of Competition*, Cambridge: Harvard University Press, 1995. This research makes precise the intuition that influence derives from a social network that bridges different worlds. More of Burt's research can be found at <http://gsbwww.uchicago.edu/fac/ronald.burt/research/>.

Oscar H. Gandy, Jr., The political economy of communications competence, in Vincent Mosco and Janet Wasko, eds, *The Political Economy of Information*, Madison: University of Wisconsin Press, 1988. An interesting article about the role of communication skills in reproducing social inequalities.

Bernard Michael Gilroy, *Networking in Multinational Enterprises: The Importance of Strategic*

Alliances, Columbia: University of South Carolina Press, 1993. The economics behind ongoing changes in the workings of global companies, in which the boundaries of the enterprise are less clear and employees' own networks have increasing economic consequences.

Mark Granovetter, The sociological and economic approaches to labor market analysis: A social structural view, in George Farkas and Paula England, eds, *Industries, Firms, and Jobs: Sociological and Economic Approaches*, New York: Plenum Press, 1988. Presents evidence demonstrating that people get jobs because of who is in their professional networks, and argues that simple economic ideas about supply and demand do not suffice to explain such things.

Kerry Grosser, Human networks in organizational information processing, *Annual Review of Information Science and Technology* 26, 1991, pages 349-402. A survey article about social networks in organizations and their role in passing information around.

Linda M. Harasim, ed, *Global Networks: Computers and International Communication*, Cambridge: MIT Press, 1993. An edited volume in which several of the usual suspects in the Internet world (and related network worlds) offer mostly brief rundowns of their respective projects.

Edward O. Laumann and David Knoke, Policy networks of the organizational state: Collective action in the national energy and health domains, in Robert Perrucci and Harry R. Potter, eds, *Networks of Power: Organizational Actors at the National, Corporate, and Community Levels*, New York: Aldine de Gruyter, 1989. A really interesting empirical study of shifting alliances within networks of people trying to affect policy-making in Washington.

Myrna P. Mandell, ed, *Getting Results Through Collaboration: Networks and Network Structures for Public Policy and Management*, Westport, CT: Quorum, 2001.

Sharon M. McKinnon and William J. Bruns, Jr., *The Information Mosaic*, Boston: Harvard Business School Press, 1992. An interview-based study of how managers get information. One conclusion is that they use a wide variety of sources in a patchwork fashion, and that their queries are largely aimed at verifying or elaborating things they've already observed in some other fashion.

Nitin Nohria and Robert G. Eccles, eds, *Networks and Organizations: Structure, Form, and Action*, Boston: Harvard Business School Press, 1992. A big collection of papers about networks in industry - mostly in the sense of "social networks", with little reference to computer networks. I find this kind of work to be somewhat sterile in its foundations but occasionally revealing in its observations. Its attention to questions of power is refreshing, up to a point anyway.

Constance Perin, Electronic social fields in bureaucracies, *Communications of the ACM* 34(12), 1991, pages 75-82. Some ideas about the informal networks within organizations that get connected together with electronic mail, often scaring their managers in the process.

Robert P. Singh, *Entrepreneurial Opportunity Recognition Through Social Networks*, New York: Garland, 2000.

Lee Sproull and Sara Kiesler, *Connections: New Ways of Working in the Networked Organization*, Cambridge: MIT Press, 1991. A general study of organizational uses of electronic mail.

Barry Wellman, Janet Salaff, Dimitrina Dimitrova, Laura Garton, Milena Gulia, and Caroline Haythornthwaite, Computer networks as social networks: Collaborative work, telework, and virtual community, *Annual Review of Sociology* 22, 1996, pages 213-238. A survey of research on the role of computer networks in creating and transforming social networks. Many common cybermyths are exploded in a satisfying way.

Here are some comparative studies of networks and networking in various cultures:

Randall Collins, *The Sociology of Philosophies: A Global Theory of Intellectual Change*, Cambridge: Harvard University Press, 1998.

Andrew B. Kipnis, *Producing Guanxi: Sentiment, Self, and Subculture in a North China Village*, Durham: Duke University Press, 1997.

Alena Ledeneva, *Russia's Economy of Favours: Blat, Networking, and Informal Exchanges*, Cambridge: Cambridge University Press, 1998.

Yadong Luo, *Guanxi and Business*, Singapore: World Scientific, 2000.

Alejandro Portes, ed, *The Economic Sociology of Immigration: Essays on Networks, Ethnicity, and Entrepreneurship*, New York: Russell Sage Foundation, 1995.

Robert D. Putnam, *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton: Princeton University Press, 1993. An interesting and influential book about the role of civic life in encouraging both democracy and prosperity. Putnam describes the centuries-old pattern in which northern Italy, where people run their lives by gathering into a wide variety of associations, is generally a happier and healthier place than southern Italy, where people look out for themselves and engage in hierarchical, clientelistic relationships. The basic point applies to the professional world as well.

Annelise Riles, *The Network Inside Out*, Ann Arbor: University of Michigan Press, 2000.

Barry Wellman, ed, *Networks in the Global Village: Life in Contemporary Communities*, Boulder: Westview, 1999. A theoretical introduction to the study of personal social networks, followed by comparative studies in several countries and online.

Y. H. Wong and Thomas K. P. Leung, *Guanxi: Relationship Marketing in a Chinese Context*, New York: International Business Press, 2001.

Finally, here are several books that might provide general guidance and orientation to graduate students and others in academia. I haven't read most of them, but if you do then please let me know what you think.

Hazard Adams, *The Academic Tribes*, second edition, Urbana: University of Illinois Press, 1988.

Robert R. Alford, *The Craft of Inquiry: Theories, Methods, Evidence*, New York: Oxford University Press, 1998.

Rae Andre and Peter J. Frost, eds, *Researchers Hooked on Teaching: Noted Scholars Discuss the Synergies of Teaching and Research*, Thousand Oaks, CA: Sage, 1997.

Kenneth J. Arrow, Richard W. Cottle, B. Curtis Eaves, and Ingram Olkin, eds, *Education in a Research University*, Stanford: Stanford University Press, 1996.

Alexander W. Astin, *Academic Gamesmanship: Student-Oriented Change in Higher Education*, New York: Praeger, 1976.

Tony Becher, *Academic Tribes and Territories: Intellectual Enquiry and the Cultures of Disciplines*, Milton Keynes: Open University Press, 1989.

Howard S. Becker, *Writing for Social Scientists: How to Start and Finish Your Thesis, Book, or Article*, Chicago: University of Chicago Press, 1986.

Howard S. Becker, *Tricks of the Trade: How to Think about Your Research While You're Doing It*, Chicago: University of Chicago Press, 1998.

Thomas Bender, Carl E. Schorske, and William J. Barber, *American Academic Culture in Transformation: Four Disciplines, Fifty Years*, Princeton: Princeton University Press, 1998.

Bennett Berger, ed, *Authors of Their Own Lives: Intellectual Autobiographies by Twenty American Sociologists*, Berkeley: University of California Press, 1990.

Ralph Berry, *The Research Project: How to Write It*, fourth edition, London: Routledge 2000.

James L. Bess, *Collegiality and Bureaucracy in the Modern University: The Influence of Information and Power on Decision-Making Structures*, New York: Teachers College Press, 1988.

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