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

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67000 words.

Please send me any comments that might improve future versions, particularly if you have tried putting my advice into practice.

"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.

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.

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. 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 explains how to get tenure, emphasizing the "deep tenure" that you attain within your research community rather than the details of departmental politics. Section 12 presents several theories of your career, based on other people's ideas. Section 13 presents a more advanced theory of networking, including the process by which research fields become institutionalized. My own theory of your career is called incremental alignment. Its main purpose is to keep you from overgeneralizing when you find yourself in career circumstances that aren't entirely positive. Section 14 then examines the moral issues that the process of leadership can raise. An appendix provides an annotated bibliography of books and articles on the topic of professional networking.

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. 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. 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 a community -- 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.

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.

In working through this exercise, you are already encountering two fundamental principles of professional social life, both of which will recur throughout this article. The first one was already well-known in classical rhetoric, and I will call it "articulating commonalities". The point here is to develop relationships with people. And relationships are founded on commonalities. These commonalities might include shared values, shared research topics, shared goals, or anything else of a professional nature that you might share with someone. To articulate a commonality means formulating language for it. This will not always be easy. Because the people whose work you cite will often inhabit worldviews quite dissimilar from your own, you may have to draw on the full resources of language in order to identify the large, irregularly shaped patches of ground that you share in common. The recipe that I just provided for sorting elements of your work into foreground and background is one simple method of doing this, and you will develop other, more advanced methods as you go along. Think of yourself as growing and evolving a distinct language for every one of your professional relationships. Having done this, you can then proceed to explore differences, disagreements, debates, and other stimuli to clear thinking. Many people avoid conflict because they want to preserve relationships. As a result, they become unable to assert their opinions and their distinctive intellectual contibutions in public, professional fora. And indeed, conflicts that are conducted outside a framework of articulated commonalities are most often confused, destructive,

and generally a waste of time. Lacking such a framework, the combatants will lapse into projection, stereotyping, sloppy thinking, and other such junk. The principle of articulating commonalities is the secret to getting along with people.

The second principle of professional life that you are encountering here is a concept from sociology called "structural holes". (See Ronald Burt, Structural Holes: The Social Structure of Competition, Harvard University Press, 1995.) A structural hole, intuitively speaking, is a bunch of people who don't know each other but ought to. Your research topic almost certainly defines a structural hole, and you occupy that hole precisely by building relationships with all of the people whose research is related to your topic in several different directions. The different directions are crucial: you want relationships with people from diverse communities. The intuition, again, is that these people ought to know one another, and you will be providing a public service by serving as the go-between. You will not know in advance just how you will interconnect these people. Perhaps they should all gather for a meeting. Perhaps some of them have useful ideas that could be used in the others' research. Perhaps several of them have useful ideas that can be combined to improve your own research. The more diverse people you build relationships with, the more of these unpredictable opportunities will arise, both for your own benefit and for theirs. Occupying a structural hole also alleviates the fear that derives from putting all of your eggs in one basket. If your contacts in one community somehow fail to appreciate the importance of your work, then you will still have contacts in several other communities who remain uncontaminated by the views of the doubers.

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) Write to these people individually.

The right way to start a professional relationships with someone whose work is relevant to your own 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.

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.

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

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 them 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.

(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.

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, 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. These temptations 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. And if someone abuses you in an e-mail discussion, simply don't respond.

** The temptation to treat people like machines.*

One seeming consequence of the intangibility of e-mail is that basic politeness often erodes. It can take real work to remind yourself that the person behind the e-mail message is an actual human being and not, say, another name to add to your 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. 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.

** The temptation to waste time.*

Exploring the net is a tremendous way to avoid writing your thesis. But 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.

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. Your professional home page 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) Write to 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 each person face-to-face at a professional meeting.

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, you do not really have a professional relationship with someone until you have spoken with them face-to-face at length.

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.

(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.

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.

** 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, though, 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 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 present in front of an audience, at a set time, with a microphone and 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, 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.

Here, finally, 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) and plosives (p-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 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.

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). 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 articulate 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; explain 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 intellectual seriousness, 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. Later sections will discuss these activities in more detail. Right now I want to introduce two important concepts related to them: "emerging themes" 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 ideas -- and not just individual new results, 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 -- a direction in which a substantial number of research projects are all headed. 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 -- a landscape 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 good rapport and who would be regarded as an honest broker by everyone involved. Approach that person and say this:

> I'm thinking it might be 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.

If the book project goes forward, you'll be negotiating a contract with the publisher. Don't make it complicated. An academic publisher won't be making much money on your edited book, and you're probably not famous enough to be negotiating for special terms. The only hard question you'll face is how to distribute the royalties. Should the people who contribute chapters get any of the money? How much? It is very common simply not to mention money at all when dealing with the chapter authors, so that the book editors pocket it all. This is not an unreasonable procedure given the work that's involved, and the publisher may not want to deal with the complexity of paying a percentage royalty to each chapter author anyway. Another approach that's a little more fair is to pay each chapter author a fixed honorarium that's basically a share of an advance. In most cases, however, you'll find that the authors are surprised to be getting anything. So don't worry too much about it.

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.

** Norms of humility*

I have been advising you to promote your research and take a position of leadership in your field. Many people flat-out refuse my advice, however, on the grounds that self-promotion is either inadvisable or literally wrong. Those people are not entirely mistaken. They are referring, on one level or another, to the norms of humility that operate in most areas of social life. Suppose that you stood up in public and said, "I am exceedingly intelligent" or "my research is of very high quality". The audience would be incredulous, and would openly treat you as a jerk. Even otherwise pleasant people can become quite nasty when you violate these unwritten rules. Norms of humility thus place extensive constraints on your public persona, and you will have to learn an elaborate phraseology before you can engage at all effectively in professional conversations.

Here, then are the phrases that you need:

* Say "we" rather than "I", as in "we discovered such-and-such". "We" can refer to your research group, or to the people who have joined themselves into a particular workshop or intellectual movement.

* Mitigate your expressions of opinion by saying things like, "I personally think that ...", owning your opinions rather than asserting them as truth.

* Give credit to others. In explaining this article, for example, I typically say that "NotN 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". This statement is true -- NotN does include advice accumulated from dozens of people, etc. I could have emphasized my own originality, but what purpose would that serve?

* Don't crow about your successes. Yes, of course your paper made a big splash at the last conference. But why talk about it? The success will speak for itself, especially with the people whose opinion you most care about.

* Deflect praise. If someone says something positive about you and your work, you should calmly take the first opportunity to acknowledge it. Say this: "I appreciate the kind words". Or this: "Whether my work has such-and-such merits you've mentioned is for other people to decide". Notice that these formulas are mandatory: if someone praises your work in your presence, and you don't deflect the praise, it is as though you uttered the praise yourself. Strange but true. So you should not let any praise go by without deflecting it.

* Emphasize the intellectual reasons for your work, not the personal reasons. If someone asks you, for example, why you chose a certain direction in your research, you probably know enough not to say, "so I can get tenure". Instead, your answer should refer honestly to the way in which research such as yours might hope to make the world a better place. Have such answers already rehearsed so that they will be ready when the time comes. The commonalities that you have articulated in your conversations with others will help a lot.

* Recognize that some social puzzles have no good answers. If you are invited to a conference that you just don't find worthwhile, or are invited to a

collaboration with someone who you just don't respect, then you are stuck. You don't want to say yes, you don't have any honest way to say no without making yourself seem superior, and you don't want to lie. "I'm sorry, but I'm afraid I can't" is probably the best you can do.

As you evolve a professional persona, you will learn many formulas like these, each of them adapted to a recurring problem of professional life. In each case, you will have to struggle with the feeling that you are being fake. Listen to the formulas that other people use in similar situations, and do the best you can.

** 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 did, 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 are 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 you 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".

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 that; 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 knitting yourself into a web of relationships and dialogues. 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. 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 knitted 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 knit 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. If you follow this strategy then the dissertation itself might resemble a staircase: it begins with the overall research direction that you are announcing, and then it steps down into successively more specific applications of that overall approach, laying out the theoretical concepts and relevant literature at each step, until finally you present the specific results that you've obtained. Then, having presented your results, you can work your way back to the top, step by step. This is not the only possible architecture for your dissertation, but at least it's one approach to managing the complexity.

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 document 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.

During the final days of your dissertation project, you may run into another distressing circumstance: you will be reading someone else's work, and you will suddenly develop a powerful sense that this other person has already done your project. When this happens, realize that you are probably suffering from a thesis-induced delusion. Except in the hardest of subjects like mathematics, it is rare for someone else literally to have done the same project as yours, or even a project that makes your own obsolete. It happens, yes, but it's probably not happening to you. What's actually happening is much more interesting: because of your total immersion in the logic of your research, you are engaging with the other person's work in greater depth than you are probably used to. As a result, you are tuning into their thinking at a deeper level than is normally possible. This feeling can be scary and intimidating, but roll with it. As you first get your mind around what the person is saying, you can feel as though your entire worldview is being transformed. You may then go through a phase in which it seems like your whole dissertation needs to be rewritten. This is probably a delusion as well. Go ahead and allow the other person's work to be a corrective to various mistakes and thin spots in your own thinking. If you're really getting lost then get advice. Eventually the storms will die down and you can identify the specific revisions and extensions that will be required to give fair credit to the other person, as well as improving your own work. You may even go through a few cycles of this. It's normal.

My conception of your dissertation as an occasion for professional network-knitting may sound different from 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. I'll talk about getting jobs in a moment, but first I want to focus for a moment on academic language.