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Western College Program at Miami University in Oxford, OH 45056
(Last revised March 15, 2010)

Research Manual for Interdisciplinary Senior Projects

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General Observations

By the end of second semester, you are going to be one of the world's experts in something. That's a new goal, one that is quite different from trying to understand experts enough to merely identify an interesting issue and construct a plausible argument about it. You will need to use new strategies to achieve that goal. Many of the research and writing practices, habits, and strategies that work on shorter papers don't scale up when you undertake a yearlong research effort and write an 80-page project. That is, strategies that work on a small scale don't necessarily work on a larger scale. Even if you have gotten really good at writing interdisciplinary papers (even one as long as 25 pages), many of the research and writing strategies you used so successfully on them will just not work for a multi-chapter paper. You might wonder just how different an 80-page paper can be from a 25-page paper. The answer is that it's a whole lot different. You can't store up all the information in your head, organizing and then synthesizing it into an argument that forms the basis for a paper you write all in one sitting, because there are too many books, too many sub-topics and facets of the issue to keep track of; and treating the first-draft as a final-draft won't cut it. You need to be systematic. You need a system for evaluating books, one for taking notes, one for organizing those notes, one for writing literature reviews, one for outlining and structuring your project, one for integrating

different insights into a coherent argument, one for writing individual chapters, one for integrating the chapters into a coherent overall argument, etc.

For example, you can use note cards and sticky notes if you insist, but why should you? There are major advantages to taking notes (and writing yourself reminders) on the computer. It's much quicker to search your computer files than to look through note cards by hand, and it's much faster to cut and paste on the computer than to shuffle note cards. You probably started using note cards in junior high school and they may have served you well so far, but now is the time to switch to paperless information storage. Remember, all your work has to go on a computer eventually, and every keystroke you enter now is a one you don't need to enter later. You can read a computer document you've created more accurately than your handwriting so you don't confuse a 5 and an S (or a 0 and an O) in a call number, for example, and it will correct your spelling and grammar as a bonus. You also get a better sense on a computer of how much you've actually written.

Every year, several Western seniors lose a whole set of senior project files that represent days if not weeks of work because their hard drive crashes. There's no need for this. Get in the habit of saving the file whenever you pause in your writing. Before you leave your computer, always save your work to your universal disk space on Miami's server. UDS is backed up on tape once a day, so you cannot permanently lose your files. You can pay a terrible price for carelessness when you don't back up your work and it doesn't take long to do it, so treat backing up like a seat belt and "click it or ticket it." If the Internet is a distraction for you, disconnect it when you are supposed to work on your project, but always reconnect before you leave your computer so you can save your work to UDS.

Carry a small notebook or a mini tape recorder with you at all times, so you can capture epiphanies whenever they occur. Your hands will be covered with ink if you try to write all your notes to yourself on them.

What makes a senior project of this magnitude feasible in two semesters is that the human mind retains all kinds of contextual information that is not processed at a conscious level. When you look through books to compile your annotated bibliography, you will be instructed not to read them. Instead you will focus on answering a few simple questions about the book—its topic, its distinctive angle or approach, its relevance to your topic, and the author's perspective. One might naively think that's all you would remember about the book but, as long as your conscious mind is really focused on the task at hand, you will retain an enormous amount of other information at the unconscious level just from skimming over the pages. You don't think you're paying any attention to that information but you really do unconsciously. When you come to do the literature review you actually know more about the book than you would expect. That effect is intensified when you do a closer skimming of the book for the literature review. By the time you come to actually read portions of the book to write a chapter, you'll feel as though you've practically read the book already—you'll have a pretty good idea what the argument is before you start reading. Moreover, you will have a much better sense of the intellectual context in which the book was written because you have skimmed through a bunch of other books on the same topic. As a result, when you come to write, you can draw on many more books than if you were encountering each one for the first time. Naturally, that unconscious understanding will be wrong once in a while —you thought

you understood what a book is about but you were mistaken. That's OK. When you come to read more the next time through the book, you'll correct that error. To handle a task of this magnitude you need to be as efficient as possible, and the way to achieve maximum efficiency is to set up a procedure in which your unconscious mind carries as much of the reading and processing load as possible.

Before You Start Senior Workshop

Many seniors have trouble settling on an appropriate topic until they develop a better understanding of interdisciplinary studies, especially integration, than they got through their core courses, and the most common reason for dropping out of senior workshop is finding a topic too late. You may find it helpful to take a look at my "Interdisciplinary Integration by Undergraduates" that gives loads of examples of interdisciplinary integration drawn from the 2005 Western senior projects. Its message is reassuring —that it is feasible for undergraduates to undertake interdisciplinary integration.

Some of you may have a well-thought-out topic for your senior project by the end of your junior year. Many, however, probably have only a vague topic area in mind. The advice from Katie Gibson (who graduated from Western in '05, been through the senior project process herself, and is now the official library liaison to Western seniors) is that, before you settle on a topic, you ought to do a little general background reading in reference works such as encyclopedias and handbooks. (See Computer Search for more details.)

Katie's rationale is that you need some basic knowledge of the larger context before you can make an informed decision about which aspect of a topic interests you most. You need to give yourself some time to explore a topic area before you start to narrow it down. She likens the process to planning a road trip, where it's a good idea to pour over a national and then a regional map to see what the area generally has to offer before you focus in on a particular city or mountain range. It's not something you need to spend a lot of time on, but you're much more likely to end up taking the trip that interests you most.

Suppose you took most of your focus hours in the humanities and soft social sciences and you're interested in Cuba, but you don't really know what you want to write on. Go to the reference section of a major university library (such as Miami's) and look up Cuba in an encyclopedia. You'll find lots of entries, one of which is a general overview of Cuba. Read through that article to see which subjects look interesting. Suppose the paragraph on Cuban music catches your eye, perhaps because you took Tammy Kernodle's world music course last year. Then ask a reference librarian for help in locating a book with an overview of Cuban music. (In King Library, you could go to Sherlock on-line and do an advanced key word search for subject headings under "Cuba" *and* "music.") As you look through that book, you realize that you're drawn most to the discussions of how the social, political, and cultural context of Cuba shaped its music. You haven't finished narrowing or focusing your topic yet, but now you're ready for senior workshop.

SEO Revision

You need to have a solid academic base for your senior project if it is to be a genuine capstone experience. If you are not building on several courses, some of which were beyond the introductory level, your senior project will end up being superficial—or

you'll end up second semester finally ready to start writing your project instead of graduating. So the first order of business in your initial meeting with your advisor is to evaluate whether you have the academic background needed to undertake the topic you propose. Since courses you take this fall will have at least some usefulness in preparing you for your project, you need to reevaluate the courses you signed up to take this semester. If you haven't already taken quite enough courses for your topic, see if you can switch into courses this semester that will give you the missing background. If so, you need to decide that immediately so you can force add them; if not, you need to adjust your topic so that you do have the background or can pick it up this semester. To get into different classes, you need to revise your SEO in the next few days and get it approved and into your DARS, with the courses you need to take this semester listed as focus hours (and thus required for graduation) so you can make the case to the instructor for force adding. Courses taken second semester are of no help in deciding on a topic, but they can sometimes be of limited help in writing the project. And, of course, you need to revise your SEO if you ended up taking different focus courses than you planned. All told, everyone will need to review their SEO whether it was approved or not, and almost everyone will need to revise it. And several of you will need to modify if not change your topic in light of the courses you've taken or that are available for you to take this year.

Selecting a Topic

You are looking for a topic that is fully interdisciplinary, i.e., one that requires different perspectives on the topic as a whole to understand it fully. If it requires merely that you borrow the occasional concept, theory, or method from other disciplines, but you're looking at it through only one lens (so that one perspective will dominate), then the topic is cross-disciplinary or multidisciplinary but not interdisciplinary. Instead, you want a topic that itself is of interest to several disciplines. To move from a cross-disciplinary to an interdisciplinary question, get behind the question to why you're asking it, to what motivates your question. What more fundamental, broader, or larger issue(s) are you trying to get at by asking that question? The larger issue is likely to be interdisciplinary, i.e., to require other perspectives to explore it. If you take that larger issue as the focus of your project, you can still explore the issue you started with as part (but not all) of the project. Now several disciplines will be contributing to the project as a whole, not just to parts of it.

If you're in the creative humanities, you may wonder what an "issue" means in that context. Suppose you plan to write a collection of short stories. Each story is about something, and if the collection has any coherence it's about something more basic. Think of that more basic something as an issue. Ask what other disciplines such as psychology, men's studies, and American studies have to say about it, and you've now got multiple perspectives on an issue. If you let their insights inform your understanding of the more basic something as you write the short stories, your collection will offer a kind of creative synthesis of their insights.

Even projects grounded primarily in disciplines in which you've taken several courses are likely to make *some* use (e.g., cross-disciplinary borrowing of a method) of a discipline or two in which you have no background. That's OK. It's feasible to borrow a concept, theory, or method from a discipline in which you're not trained, as long as you are not trying to draw insights from its overall perspective into the topic as a whole.

Some students try to choose a topic by asking themselves what they would like to be doing on their project a few months down the road. You might envision yourself interviewing women from different generations and asking them what feminist texts they read that influenced them. That's fine, but don't think that's your topic. To get from that activity to a topic, ask yourself why it's appealing to interview these women. What significant question might you answer through those interviews? That question, not the interviews themselves, is a candidate for the focus of your project. The interviews will then become a means to the end of exploring that question.

Seniors writing projects with highly focused or unusual topics—not an uncommon situation at Western—will find that there is very little professional literature on their specific topic. For example, a senior writing her senior project on Russian bathhouses discovered that there is quite a bit written in Russian on that topic but she doesn't read Russian, and somehow American sociologists have overlooked the topic altogether. She found, however, lots of sociological concepts and theories that *could* be applied to her topic; it's just that no one had gotten around to applying them, so she had to do it. So when you're looking at a discipline, you shouldn't limit yourself to what it's already said about your topic; especially when you have an unusual topic, you should look at the whole discipline and ask yourself what major concepts, theories, or school of thought have *potential* bearing on your topic. In that case, you will have to be the one to apply them to your topic.

Selecting an issue or problem to study should not include selecting a conclusion or solution. You should be choosing a question, not the answer. In other words, don't presume you know the answer to the question before you start researching it. Start out your research with an open mind, or you won't learn anything—and you foreclose the possibility of making a discovery from which others can learn as well. Worse, you reinforce the inevitable misperceptions that you and others have. It's not uncommon to come out with findings you don't expect, and that's much more exciting than finding precisely what you expected. It's fine to start out with a hypothesis, but you need to hold it tentatively, provisionally, letting the evidence you uncover guide your assessment of that hypothesis. It's one thing to let ideological conviction shape your expectations of what you'll find, but don't let it overwhelm your curiosity about finding out what really does or did happen. (Political orientation is a source of perspective as much as disciplines are, and you don't want to limit yourself to one political perspective any more than you would limit yourself to one disciplinary perspective.) Learn from the evidence, even if it's not saying what you expected—especially if it isn't.

In fact, when you examine the evidence, it's important to pay attention to *everything* it has to say, not just what it has to say about your question. It's often, maybe even usually, the case that you don't understand the context well enough to ask the most interesting question; but if you listen to everything the data have to say, not just about the question you asked, then you may discover what the really interesting question is. You need to understand that scholars formulate a problem to research based on their current understanding of the context in which that problem is situated. The most important findings from research often involve, not a solution to the problem or the answer to the question, but a reformulation of the understanding of the context. You're even more likely than most scholars to come out with a novel insight into the larger context because you're taking an interdisciplinary approach (and, often, you're the first scholar to draw on

that particular combination of disciplines to study the problem). You need a problem or question to guide your research, however, because you won't gain a better understanding of the context by wandering around aimlessly in it; you need to see how it plays out in a particular problem (or issue or question) to make any progress in understanding it. Even if you don't gain any new insights into the context through your research, you can at least better understand the problem (or more fully answer the question) you started out with.

Select a topic that works no matter the outcome of your research. Don't present your topic as a study of the impacts of the Nuremburg trials of Nazi war criminals on the tribunals trying Slobodan Milosevic and Saddam Hussein (which presumes Nuremburg *had* impacts on those tribunals). Instead, present it as a study of war crimes trials (which allows you to draw on all three without depending on any particular outcome of your data).

“Creative Projects”

Start the creative portion of your project earlier than you think you need to because it will take longer than you think it will. In particular seniors tend to underestimate how much time the practical logistics will take. Seek out faculty (or nonacademic experts) outside Western early on for advice on how to proceed with the creative portion of your project. The senior project as a whole takes longer when it involves a creative portion because in most cases you really need to immerse yourself in the scholarly literature first so that your choices about the creative portion can be informed by it.

The creative portion of a senior project will be evaluated by the normal standards for that kind of activity; and the appropriateness of a proposal to undertake a creative portion of a senior project will (like the analytical portion of the project) be judged according to your background in that kind of activity. If you propose to write a collection of short stories as the creative portion of your senior project, you will be asked how many courses you have taken in creative writing, and the short stories themselves will be judged largely according to the criteria and standards used in creative writing courses. We recognize that students can develop competencies outside of formal coursework, but a student without formal course work in that creative activity will be asked to point to other significant prior experience. A senior-level capstone course is the time for advanced work, not the time to try out a new medium; and the openness of the Program to unconventional approaches should not be confused with a lack of academic standards.

How can you tell if the creative portion of your project is interdisciplinary? It depends on the creative medium. If you're directing a play or film, conducting a musical performance, or otherwise producing an existing work, you're doing much more than understanding and fulfilling the intention of the playwright, screenwriter or composer, and making sure the author's ideas get manifested in a performance. You can conceive of the play/film/composition in many different ways. Ask yourself what perspectives on it are interesting and relevant. Those perspectives can include the perspectives of different disciplines on its subject matter, the perspectives of different political and social ideologies on the issues it addresses, or the perspectives of competing schools of thought within the artistic discipline itself (such as between Augusto Boal and Eric Sondheim within theatre). Ask yourself what the strengths and weaknesses of each are, and then what you can pull together from these disparate approaches in a coherent and meaningful

way (so that it has some real integrity) to create your own synthesis of a way to approach the production of this particular work. (See for example Abby Workman’s senior project in which she adapts Tom Stoppard’s radio drama “Artist Descending a Staircase” for theatre, drawing on the strengths of the respective media to create a unique and coherent directorial interpretation of that work, indeed a unique form of performance.) You need to be self-conscious about forming your approach to production. That means that in the analytical portion of your project, you need to be explicit about what’s in each of the professional literatures on which you draw, where people are coming from when they’re presenting that approach, their objectives and values, what assumptions they’re making about the world, and in what ways your actual production did and did not achieve your vision for it, so that you can ground the creative portion of your project in the relevant professional literatures.

The On-line Search

Exploring an idea. Your senior project is an opportunity to explore an idea that interests you. You’re going to spend a whole year on it, so find something you love, something that really fascinates you. Don’t assume you know everything about it. Don’t come into workshop saying, “I want to prove this”; say instead, “This is something I want to explore and see what I can find out.” Coming at it this way, you will start to have those “aha” experiences that makes research rewarding. What makes a senior project really enjoyable and fulfilling is when you discover through your exploration how diverse ideas fit together in a way no one has seen before.

In the most general terms that exploration involves identifying high quality information that you transform into knowledge by seeing patterns in the information. You can find lots of facts through Google but it’s not the place to start when you are looking for quality information. People posting to the Web have a variety of agendas, including selling things figuratively as well as literally (e.g., martinlutherking.org is a KKK propaganda site). Before you can evaluate information on the Web, you need to be really knowledgeable about the topic, and to gain that knowledge you need to learn how to approach information systematically. So instead of starting with the Web, think of the library as your gateway to information resources, and librarians as your guide to exploring those resources.

Following a strategy. The problem in finding information on your topic is probably not going to be locating enough information but finding too much. You need a simple systematic strategy to deal with information overload, and that strategy is to move from general to specific—from encyclopedias and handbooks in the reference collection for an overview, to books for packages of ideas from experts in different disciplines, and then to journal articles for specifics or alternative interpretations. Think of finding quality information on your topic like planning for a road trip. You start with national map that provides little detail but lays out most of the major features. Once you decide the region of the country to visit, you turn to a state map for more detail, which is now contextualized within the nation—you know generally what’s in the states around it. From the state map you focus in on a city or a mountain range, let’s say, requiring a city map or a geological survey map. Because you started with a national map and then a state map, you see the details in the city map or geological survey map within those larger contexts.

First, peruse some general reference works for articles on the overall subject matter you want to explore (let's say, Cuba). The library's collection of reference books, especially its encyclopedias and handbooks (both general and specialized), is a great place to find an overview of your topic that puts it in overall context. You won't cite these sources in your project, but they are a great way to explore your general topic area. You could start with the On-line Reference Shelf and go to almanacs and encyclopedias, say to *Encyclopedia Britannica*. Search in it for Cuba and find the general article on Cuba.

As you read about Cuba, you may discover that what interests you is really Cuban culture, so you next read in more focused reference works and realize that, for you, the most interesting part of Cuban culture is its music and how that relates to politics, etc. Now you can start looking for books on Cuban music. When you do, don't search for books on Cuba and then search within them for books on music. That would work for a Caribbean studies scholar focused on Cuba, but not for an interdisciplinary studies scholar. Instead, use Boolean logic to search for the "intersection" of books on Cuba and books on music, i.e. Cuba "and" music. That way, you get works that approach Cuban music from two perspectives, region and music. If your search yields too many hits, you can limit your search to books in English and to those published in the last five years. At other points, you may want a broader focus, expanding your search from just music to cultural life in general; e.g., so that you can look at art as well as music by searching for art "or" music, and then searching for that set "and" Cuba. To further narrow your topic, you could do an advanced search under Grove Music On-line for Cuba to find different kinds of music as well as bibliographies.

Refining the topic. To refine that topic—to narrow, focus, and shape your topic—you will need to work back and forth between general categories and specific examples as the information you find raises different questions in your mind. Think of this as a computer game: if you try something and it works, great; if not, back off and try something else. In the language of the Boolean logic used in advanced library computer searches, you do that by moving between "or" searches for the 'union' of two topics (to enlarge your scope) and "and" searches for the 'intersection' of two topics (to narrow your scope).

Because your project is interdisciplinary, you will also need to go back and forth between two systems for classifying information, one developed by the disciplines and the other developed by librarians. The disciplinary system develops technical disciplinary terms used by authors in titles and abstracts, and it organizes information in discipline-specific databases and indexes; you access it by using key word searches. The library system uses subject headings developed by professional librarians and organizes information in the card catalog according to call numbers also developed by librarians; you access it by using subject heading searches. The electronic card catalogs, databases and indexes tend to be set up by librarians while the publications they include are by authors writing largely within disciplines. The trick is to use each system to focus better in the other system, sometimes expanding your search and other times contracting it. Librarians should know which databases and indexes are most useful for your topic.

Subject headings of books in a card catalog or articles in indexes are assigned by experts who read the books, decide what they are about, and assign them subject headings as well as call numbers. Those subject headings bring together works using different

terminology or jargon—works from different disciplines. If you just do a key word search for the jargon from a particular book that interests you, what you tend to get are other books on the same topic written from a similar point of view or perspective. As an interdisciplinary scholar you want as wide a range of perspectives on the topic as you can locate. E.g., in the discipline of psychology a lot of work is done on “gender differences”: if you search for it in *PsycINFO* you’ll get 10K hits. But if you check the *PsycINFO* thesaurus, it will tell you that’s not a valid subject heading and to use “human sex differences” instead, which will give you 60K hits. Instead of trying to think of all the possible jargon (and reinventing the wheel), use the subject headings established by library experts who have already gone through that process for you. This search strategy gets you to think conceptually about how different people look at these same concepts and the relationships among them.

When you finally get into the journal literature as you work on your literature review, you will also find citation indexes useful as well, especially those published by the Institute for Scientific Information (ISI)—Humanities and Arts Citation Index, Social Sciences Citation Index, and Science Index. Each one identifies all the journal articles in that broad area that reference a particular journal article. Look for key words on your topic from one discipline to find journal articles that have those key words in their title. By selecting articles of particular interest to you from that discipline and seeing what articles cite them, you will be able to identify other disciplines that deal with your topic. Unlike key word searches, citation indexes such as those put out by ISI that cover a wide range of disciplines have the advantage of helping you identify other disciplines that address specific themes or issues even if you do not know the terminology those disciplines use.

Returning to the example of Cuban music, if you try a key word search for “Cuba” in Sherlock, it turns up topics that are all over the place, so turn to subject headings. That will yield clusters of topics but still too many. So try an advanced key word search for the subject headings of Cuba* and music* (where * truncates). Your search will turn up *Cuba and its Music from its First Drums to Mambo* in the music library. If you then look at the subject headings listed under it, you will find “Music-Cuba-History and Criticism.” If you remove “-History and Criticism” (which is too specialized) and click on Music-Cuba, it will yield ten subject headings and seventeen items. To get even more options, click on Ohio Link to expand your search statewide, which yields 25 subject headings and 109 items. You can then limit your search by date for the most recent publications (which will give you the widest time frame and the most up-to-date bibliography).

Still confused? It takes practice and guidance. Attend Katie Gibson’s workshop presentation in King Library (Kamm classroom, 1st floor, end of corridor behind the circulation desk). She will be happy to work with you individually throughout the year.

The Annotated Bibliography

The task. Essentially, the annotated bibliography is an inventory of major sources (aim for 45) available to you for your project; it is an alphabetical list of books in which each entry is followed by a short statement or “annotation.” Annotations identify the perspective of the author, the focus and approach of the book, and its relevance for your project; they are typically three or four sentences long. As you compile it you are taking

stock of what you have to work with (i.e., evaluating sources). It is an on-going instrument that you update and use for your own purposes throughout the project.

Whenever feasible, sit in front of your computer when you look through the books you've selected from your on-line search for closer examination. Once you have determined that the book is useful for your project (see Evaluating Sources below), start by entering the full bibliographic citation (author, title, edition, city/publisher/date for books; website for electronic sources). Try using easybib.com or RefWorks (see below).

In the humanities and social sciences, there are usually sufficient books to complete the bibliography. In the natural sciences, you may exhaust the relevant books fairly quickly and need to move into the journal literature.

There are a number of standard styles for bibliographies and footnotes—APA (American Psychological Association), MLA (Modern Language Association), etc. The rules for each style are available at <http://www.lib.muohio.edu/onlineref/>; click on Citation Guides and Style Manuals. Since you want to make your project as credible as possible in the eyes of the experts you want to read your project, you should adopt the style used by the majority of your sources. Once you have identified the appropriate style for your project, you need to put *all* citations in that format, even sources drawn from disciplines that use another style. Follow the style you have chosen down to the smallest detail, including where spaces go in a citation, and whether you use periods or commas after each section of the citation. Unfortunately, scholars tend to get rather pedestrian when it comes to citations in bibliographies and footnotes, and they form an impression of the overall quality of your work from such academic minutiae. Instead of bemoaning this fact, you might as well recognize it and become a bit compulsive about following the particular style you adopt. Simple ways to handle formatting of citations is to use RefWorks, available on the library website under Research Resources, or easybib.com.

In your annotation: 1. Identify the perspective (e.g., sociological or feminist) from which it is written; for edited collections, identify perspectives of the contributors you expect to use as well as of the editors. Use the predominance of that discipline or interdiscipline in the bibliography, the author's title (e.g., Professor of Physics), or information in the preface or introduction to guide you; when all else fails, google the author's name. 2. Identify (ideally in the author's or editor's own words) both the focus of the work and the approach it takes (each will typically be identified in the Introduction). 3. Identify the aspect of the book that seems particularly appealing at the moment. See Evaluating Sources below for how to identify this information most efficiently.

You want to identify perspectives, but not clutter up your annotation with extraneous detail: Label the perspective; don't present a mini-biography. For example, say: The author is a social worker who directs a sexual assault clinic; the editors are from law and psychiatry as well as child abuse activists. Not: "Berliner has an MSW and is the Director of the Harborview Center for Sexual Assault and Traumatic Stress in Seattle. Briere has a PhD and is an Associate Professor of Psychiatry and Psychology. Hendrix has an MA and an active member of the American Professional Society on the Abuse of Children (APSAC). Jenny has a MD and a MBA and was the Executive Director of APSAC. Reid has a PhD and works in Children's Advocacy."

The point of identifying an author's institutional affiliation is not to establish that person's professional credentials, but to help identify the person's disciplinary

perspective. For authors who are not academics, find some other way to identify their perspective. If an author "helped fuel the May '68 troubles in Paris," that information is sufficient to identify him as a radical activist. If you can get more specific (e.g., Marxist, Maoist), that would be even more helpful (since you may discover down the road that Marxists and Maoists approach your topic differently).

Organize your bibliography into sections by subtopic (*not* by discipline or perspective) –according to what authors are talking about substantively, not according to the point of view from which they approach whatever they're talking about. (Within each subtopic, you want to make sure you have each of the pertinent perspectives adequately represented—the goal is not exact parity but adequate coverage, but you will not group the books within that subtopic according to perspective; you'll list them alphabetically by author's last name.) Those sections will set up the lit reviews you tackle next. Instead of using an extremely broad label (e.g., Latin America) for a subtopic, ask yourself what implicit criterion you used for choosing that handful of books out of the tens of thousands available in the library on Latin America. What subtopic were you looking for that allowed you to narrow down your choice? You were interested in *what* about Latin America? If it was the interplay of economic, social, and political histories within individual Latin American countries, that narrower subtopic should be reflected in the label for that section of your bibliography.

Here's an example of an entry in an annotated bibliography:

Reeher, Grant and Joseph Cammarano (Eds). *Education for Citizenship: Ideas and Innovations in Political Learning*. Maryland: Rowman & Littlefield Publishers Inc., 1997.

The editors and contributors teach at Syracuse's Maxwell School of Citizenship and Public Affairs and have expertise in political science and history as well as education. The focus is on social science curriculum construction at a high school level, especially ways of learning involving “active learning, democratic processes, politics of education and how technology development has increased the potential for democratic citizenship” (4). The approach is to “evaluate these curricular innovation in the context of changing American values” (5). It includes Otto Feinstein's perspective of interdisciplinary education that will be the focus of one of my chapters.

At the beginning of your annotated bibliography, describe your topic in a short paragraph. That way, your advisor and your workshop director can see at a glance what you intend to learn about using these sources. The topic description also helps in evaluating the appropriateness of the topics by which you've organized your bibliography.

Give yourself a week before you hand in your annotated bibliography to find and annotate books you discover are missing when you ostensibly complete your bibliography. It's pretty common to find out when you organize your books by topic that you have too few for some topics. You can identify additional books you need to include by seeing what other books keep being referenced by your books. If you don't find represented in the books you locate a perspective that you decide would be helpful in your project, you should include in book setting out that perspective so you can apply one or more of its basic concepts or theories yourself to the topic. Even more common is to discover that some perspectives are underrepresented, if not in the bibliography as a

whole, then on a particular topic. Instead of ignoring a second book with a similar title, see if it is coming at the same topic from a different perspective; e.g., books on the same environmental policy may be written by political scientists or by natural scientists, and both perspectives are important. Remember that the literature review is much harder than the annotated bibliography, and it becomes easier if you've done a good job of categorizing topics and a thorough job of finding the key books for each topic and for each perspective on a topic. If you don't, you'll discover that you need to stop work on the lit review to go back and redo that part of your annotated bibliography before you can continue.

Precision becomes important when you work on your annotated bibliography. The slightest error in copying down the call number, and you won't find it when you go to the shelves. An error in identifying the perspective of an author can really throw you off later when you write your lit review. Even an error in copying down a quote from the book that sets out its approach can come back to haunt you because you may well end up using that quote in your project, and you don't want to waste time later on rechecking quotes—get them right the first time.

If you cannot keep yourself from reading the books, then decide how many books you need to evaluate in a day, follow your system (See end of Evaluating Sources for how to develop a system) ruthlessly each day to evaluate that many books, and then in your free time later in the day, you can read to your heart's content, and long as you're on pace to complete your annotated bibliography on time.

The results. Each year, one or two seniors make the scary discovery that “Someone else has already written my project.” If that happens, don't let it faze you. You need to realize that's not a problem, because research is an on-going process of exploration. Every time a step is completed in the research process, new opportunities open up. There's always a next thing to do, a next step. If someone has written your project already, that means you will be able to deal with the topic at a more sophisticated level. Someone else has already done the initial spadework for you, and you can build on it. So there is no such thing as being “scooped” the way a journalist can be. Your initial response is probably that someone has beat you to it so now you have to find a new topic, but that's simply wrong. Someone beat you to the lower-level stuff so now you can focus on higher-level stuff that's more interesting. Be *glad* someone else wrote your project already. Whatever you do, don't panic. Say ‘thank you’ and seize the opportunity to treat the topic at a more advanced level.

Most seniors, however, decide to *modify* the topic for their senior project in light in the topics that other scholars have written on. That may also happen as you write the literature review, outline your project, or write your first chapter. It is part of the normal evolution of your topic as you become more knowledgeable about what else has been written in your field. It reflects your willingness to learn and, as such, it is something to feel good about, not something to worry about.

Annotated bibliographies are a useful tool. The annotations are there to serve you. An initial annotated bibliography is assigned to get you started (and show you how to do it), but every year seniors routinely continue work on their annotated bibliographies well into second semester, even though they're not getting a grade on it and no one is telling them to do it or looking over their shoulder to make sure they do it; indeed, in most cases, the bibliography in their final project is not even annotated. The reason you need an

annotated bibliography is because you will be looking through anywhere from 75 to 125 books, and dozens if not hundreds of journal articles, as you work on your project. You cannot keep all of that stuff in your head. You need to be able to turn to your bibliography and very quickly identify the perspective and approach of a source so you can distinguish it from the 20 others you have on roughly the same topic. Consequently you need annotations that will stand the test of time. You need an annotated bibliography to inventory your sources. That inventory needs to include the kinds of information you'll need, say, three months from now to identify quickly which source is the one you vaguely remember looking at months ago.

Evaluating Sources

Before you start evaluating, you need to be clear whether the people whose names are on the front and spine of the book actually wrote it (i.e., they are the authors) or whether they merely assembled the contributors who did the actual writing. In the latter case—an anthology or edited volume, you need to distinguish between editors and contributing authors.

First, **evaluating the approach**. You already know that to find the topic (or substantive focus) of the book, you look at the title and then at the table of contents (which expands on the title). You probably pay less attention, however, to the book's approach to that topic. For that you normally turn to the introduction (which justifies and elaborates on the table of contents). You need to skim through the introduction, looking first for a key sentence (often the topic sentence of a paragraph) in which the author says: "This book takes the following approach to this topic..." or "The principle (or purpose or point) of this book is ..." or "In essence, this book is really about..." That paragraph sets out the distinctive "angle" or "take" on the topic that justifies the publication of the book. When you find such a paragraph with the author's own characterization of what the book is about, dedicate a sentence in your annotated bibliography to it, preferable using the author's own words (so that, when your interests shift in the course of the project, you can reassess the usefulness of the book). If you don't find such a declaration in the introduction, you can usually pick up clues from the language the author uses, the sub-topics on which the author focuses, etc. Failing that, you may be able to turn to the index: if it's organized into categories with key words under them, the book is probably in some way "about" the categories with the most entries. What you're probably not used to even thinking about is the author's perspective that underlies the approach of the book.

Second, **evaluating the perspective**. Disciplinary scholars don't need to worry so much about perspective because the discipline determines the overall perspective from which to view that topic. The discipline decides what questions are interesting and why, what constitutes appropriate evidence to bring to bear in answering a question, what procedures you must follow (and tools and methods you must use) to obtain that evidence, what's a good answer to a question, etc. Everyone in economics knows that when you write on the economics of education, you focus on costs and benefits to the person getting the education (since that person makes the relevant decisions), you treat it as investment in human capital, you look at it through the lens of neoclassical economic theory, and you rely on statistical manipulation of quantitative data. In disciplines fractured into competing schools of thought, the school of thought (e.g., modernist, postmodernist, feminist) largely determines the perspective.

In interdisciplinary studies, on the other hand, the whole point is to draw on different perspectives and integrate their insights, so an early order of business in evaluating a book is to identify its perspective. You need to determine where the author is coming from— what perspective the book represents.

To find out, you need to hunt around. If you are lucky, the authors or editors may set out in the introduction their perspective on the topic—e.g., my work comes out of the study of American politics, I'm a professor of political science at Harvard University, and I teach courses in American politics. More often, though, they introduce only the topic itself and you are left to try to infer their perspective from what they say about the topic. With experience, once in a while you can tell something about the perspective from the publisher—Monthly Review Press publishes Marxists, Transactions Books publishes left wing sociology, etc.—though more often the publisher is a clue instead to the quality of the book, with university presses at the top. A foreword (typically written by someone other than the author) might discuss the author's perspective, but even that may focus less on the perspective and more on the significance of the book. Overall, these strategies are not promising. So where do you go to find the perspective from which the book was written?

If the book provides it, the quickest and easiest source of information on perspective is the author's bio—a biographical sketch that includes institutional affiliation and position, and selected publications by the author. Look on the back of the dust jacket (normally removed by libraries) or the back cover of a paperback book or a glossy hardcover book. You may also find it near the beginning or end of the book. While it's worth a quick look to find it, too often it's simply not provided. The preface is another reasonable place to look, since it typically explains how the author came to write the book, but you can't count on finding it there either. When all else fails, go to Google and type in the author's name (in quotation marks), scan down for something that's likely to give at least the person's institutional affiliation and job title. If you assess books with the computer sitting next to you, it doesn't take long to find this much information (and you can enter the full bibliographical information on the book for your annotated bibliography).

One might naively think that since academic scholars enjoy academic freedom, they are not fettered by their job title, location within the institution, or the institution with which they are affiliated. But one's department makes decisions about one's promotion, tenure, and annual salary adjustment; one's institution pays that salary and makes decisions about sabbaticals; and one's discipline determines whether one gets to present papers at which conferences, whether one gets those papers published in journals, whether one is invited to contribute to edited volumes or to give talks at departmentally-sponsored lecture series, and whether one is awarded research grants. Control of the perquisites does not determine what conclusions one must arrive at in one's publications, but they do constrain one's approach—in short, they enforce one's adherence to the perspective of the discipline.

The bibliography (a.k.a. references or works cited) is the most consistent source of information on the author's perspective. Scan down the list, ask yourself what disciplines (art history), schools of thought (Marxist), or interdisciplines (women's studies) are represented by these titles, and mentally tote up how many are showing up in each category. Let's say you find something like 40 books from American politics, 25

from political sociology, 2 from women's studies, and 1 each from history, psychology, and economics. (There's no need to actually count the number of titles in each category, since all that's required are crude generalizations like "a lot," "a few," or "none.") It's nice that the author at least looked at the last 4 fields, but they are clearly not what the author was relying on. You want to know where the author really dug into the professional literature. It's one thing to claim in the introduction what approach is being taken, but you can tell in the bibliography from what perspective(s) the author is actually drawing from, i.e., which professional literatures are relied on primarily.

For anthologies, you need to assess the backgrounds of individual contributors. Often there will be a list of contributors that gives basic biographical information on each, or there should be at least some information on a contributor at the beginning or end of the chapter. As with books in a bibliography, you can categorize contributors by perspective, tote up the number in each category, and get some sense of where the book as a whole is coming from. If it's a volume in a series, there may be an early page that talks not about the book but about the series of which it is a part; in any event, check out the title of the series. How you characterize the book (i.e., whether you focus on the book as a whole or on individual contributors) depends on whether you're using the book as a whole or merely taking a chapter or two from it.

Finally, **developing a system**. You need to develop a system for evaluating books that works for you. No one can tell you what system is best for you, but it is clear what that system needs to accomplish. The reason you need a system is that you can't keep doing what is the first inclination for many seniors, namely read the whole book (or even major portions of it). That approach works for 3 or 4 or 5 books, but if you're going to look through 60-70 books to narrow down to 45 books to include in your initial bibliography, and if you're going to add on another 30 or 40 or 50 books in the ensuing months, you don't have time to read all of them. Indeed, it's not physically possible to read that many books in less than a month; if you try, you'll get increasingly frustrated and down on yourself, and you'll feel like a failure. You have to find a quick system for evaluating what's in each book, whether it's of potential use for your project, and if so, how. You need to be able to do that for any one book in about 10-12 minutes. Initially you'll undoubtedly find that it takes you much longer, maybe 30 minutes instead of 10-12, so you'll need to pick up the pace. Like anything else, you get good at your system through practice. Try using a kitchen timer—something that dings or beeps when the time is up. This approach calls for ruthless self-discipline to keep from reading large chunks of books that clearly are of interest to you: find them, quickly assess them, and move on to the next one without looking back. You need a consistent procedure.

Here's one possible system. Start with the title to decide if it's worth opening the cover. If it is, look on the title page for a sub-title that may not have shown up on the cover or binding to clarify the topic, deciding if it's worth going to the table of contents. There, find the major topics and how they are organized, giving yourself as much as a minute to decide if the substance of the book is of interest. If it is, then go to the bibliography to see what disciplines it draws from, and then to the introduction or preface, not to read it but for key words and ideally a place where the authors (or editors) come as close as they're going to come to saying what they're trying to accomplish in the book and the way they went about it. Some people find it useful to look at the index, especially if it includes categories; if it has many entries under one category, you know

that's a focus of the book. Somewhere along the line, you should spot information that indicates the author's perspective as well.

A seasoned scholar can assess a book in 7-8 minutes using this system; you should aim for 10-12. Once you become familiar with the literature through your literature review, you can also assess a book's quality—looking not only at what it includes but what it should have included, at whether it is taking a sophisticated or a simplistic approach to the topic. You have to decide what things to look at and in what order, but use a system—follow the same sequence book after book until it becomes a habit. You have to discipline yourself to move quickly and resist the impulse to get drawn into what the author is saying. Once you've completed taking inventory and you know what sources you have to work with, then you can make a strategic decision about which book to read first.

Narrowing Your Topic

To narrow down from a broad topic area to a specific problem, or question, or issue, try skimming (not reading) the books you collect for your annotated bibliography to identify the issues they find interesting and the perspectives from which they view those issues. "Issue" refers here to really broad-brush, in-your-face matters on which authors are focusing their attention. [If you try to read all the books, it will take you a couple semesters and then you won't have time to write your project, so discipline yourself to skim them.] Focus not on what they're saying, but rather on what they're talking about. Even if you spend only 5-10 minutes per book, you should be able to detect and note down which issues seem fundamental or foundational, and you'll find that some of those issues are addressed in different books from different perspectives (and presumably come out with different conclusions). Such issues are ripe for interdisciplinary examination, since you can draw insights from those perspectives and integrate them into a more comprehensive understanding. That understanding can form the basis for a solution or answer or resolution that is different (and hopefully better) from what any of the more narrowly focused books have come up with. Choose an issue where the perspectives employed reflect disciplines in which you have sufficient background.

Don't confuse *narrowing* your overall topic with *focusing* within that topic on a particular group, location, historical time period, or case study. You should worry first about narrowing your topic and finding a problem, or question, or issue that problematizes that topic. Once you've decided on an issue, then you can turn your attention to how you're going to approach it, such as through a case study. The point of examples or case studies is to see how the phenomena you're looking at and the issues that are raised about those phenomena play out in a particular context; they ground your general discussion in specifics, your abstract discussion in the concrete. You want a topic that is narrow enough so that you can talk meaningfully about that class of phenomena as a whole, yet broad enough that it is as significant and of general interest as possible. The examples or case study you choose need not be of general interest in themselves; they should be chosen primarily on the basis of availability of information and generalizability to the topic as a whole. It is the topic itself that needs to be of wide interest.

If you know the general subject matter area that you're interested in but you don't have a specific problem or issue or question in mind, one good strategy for narrowing

down to an issue is to ask practitioners in the field what study they would like to see done but don't have time to do themselves. Ask them what they need help with, what they would study themselves if they had time. That's one reason that good senior project topics often come out of internships, because you can observe or overhear what issues are concerning people in that field.

It's OK if you *start out* with a topic area but not a debatable issue, in part because you want to give yourself a chance to get into the relevant literatures and see what issues are being debated in them. If you decide in advance on the issue and hold too tightly onto it, you don't give yourself a chance to adjust or change your topic in light of what other people in the field are talking about. You face a kind of balancing act: on the one hand, the sooner you can get closure on your issue, the sooner you can focus in and get down to work; on the other hand, if you decide too early or too rigidly, then you miss out on potentially more interesting issues that you become aware of only by getting into the literature. You need to work deliberately and with a systematic strategy towards an issue.

In principle, you could seek an issue either deductively or inductively. Deductively, you can start with theories about your topic coming out of different perspectives (i.e., disciplines) and construct an issue out of the ways their analyses differ. Inductively, you would start by looking at data, evidence, or information and trying to construct an issue out of the patterns in them. Unless you are already aware of a fascinating anomaly in the factual information on your topic, however, it's much easier to start deductively, even if you switch to an inductive approach later. When you start collecting information from different perspectives on the issue, look at the evidence not just to test your hypotheses but also to see what else it can tell you—maybe something much different than you were expecting or were even looking for.

There's a difference between a hypothesis and an issue. An issue is something that is debated (or at least debatable), and it can be looked at from different perspectives. When you explore an issue from those perspectives, you may well come up with lots of different hypotheses, but the converse doesn't necessarily hold—if you test a hypothesis, you won't necessarily come up with an issue. So you need to establish your issue before you start developing hypotheses.

If you need to keep using a book you got through OhioLink, don't just hold on to it past the due date (factoring in the seven-day grace period). The daily fines are *very* high when they kick in. Instead, when the due date is 3-4 days away, order the same book from another institution through OhioLink. That way, when the next copy of the book arrives, you can drop off your current copy as you pick up the new one. You don't incur any fine and you don't lose access to the book. The library may not notify you immediately when the book arrives, so it's best if you keep track and either show up or call Circulation the day it should arrive. In general, you need to be systematic in keeping track of when books are due because fines mount up quickly when lots of books are involved. Since you can renew on line and order OhioLink books on line, there's really no need to get fined.

Project Proposal Presentations

Presenting in workshop. In general, you need to look at presentations in senior workshop differently from presentations in your other classes. First of all, they are not graded and you don't hand in anything. Workshop presentations are an opportunity to get

assistance—to deliberately reveal what you don't know—not to show off what you know or to demonstrate that you've got everything under control. (In the senior project conference, of course, you give a formal presentation designed to show off what you know about your topic, but that presentation is public, not in workshop.) The point of these presentations is to help you with a process, not to demonstrate that you've produced some kind of product.

In your five minute oral presentation, state what topic you're thinking about and what perspectives you anticipate drawing on; then in a sentence or two state what excites you about the topic (i.e., the reason you're focusing on this topic or the reason others should care about the topic); and then reveal (at greater length) any reservations, qualms, uncertainties, or worries you have about the topic. Even if you feel you have your topic pretty well nailed down, your discussions with your advisor may well have raised concerns about the implications of your topic down the road: e.g., I'm still really excited about my topic, but my advisor made me realize that if I'm really going to follow through on it, I'm going to have to learn something about the discipline of economics or the sub-topic of banking that I really didn't want to deal with; or I'm going to have to collect some data and I don't know how to analyze data statistically. The information you present on your topic and the perspectives you plan to draw on will also be useful when you all come to organize yourselves into affinity groups. Since you've only got five minutes in which to present, and at least four points to make in that time, it's probably a good idea to prepare some notes on what you want to say. (These notes are for your use; you don't hand them in to the workshop director. It might be helpful to you, however, to show them with your advisor and discuss the feedback you got in workshop.)

It's important to take this opportunity to try your idea for a topic out on a wider audience than your advisor and immediate circle of friends to see how people from a range of academic disciplines and interdisciplines respond to the topic. Remember that you will be writing the project to be understandable and engaging to liberally educated readers in general, as well as to specialists in your field. You've got a sales job to do in order to interest that general audience in your topic so they'll read your project. Your classmates in senior workshop with their wide range of topical interests provide a pretty good test of how liberally educated readers in general will respond to your project. Observe how they react to your presentation: are they catching on—picking up on what you're saying and why it's exciting—or are they just sitting there; do their eyes light up or glaze over?

Giving feedback on presentations. As you listen to presentations, ask yourself: (1) Do you understand the topic (and does it make any sense to you); (2) Do you see why this topic is supposed to be interesting; (3) If you were planning to study this topic, would you draw on the same set of disciplines and interdisciplines, or do you see other perspectives that would be helpful as well; (4) Do you see another topic or another slant on that topic that would get even better at the interests of the presenter; and (5) Do you have any useful response to the concerns or doubts expressed by the presenter? Oral responses in seminar also need to be succinct if not pithy: you can state a point but you can't elaborate it if everyone is to complete their feedback on a project in 5 minutes: to get even five points aired, each will have to be stated in a minute or less. If you want to develop a point for the presenter, do so after class.

Deciding when to present. Much as you need to rethink what it means to give a class presentation, you need to rethink your strategy for deciding when to present. Remember, the point is not to give as impressive a presentation as possible, but to get as much help as possible. So as you decide which of the three dates to sign up for, ask yourself when (within the range of available dates) you can get the most useful feedback. In this particular case, what that boils down to is how many times you've met with your advisor. If you've met three times already, you've had more opportunity than most seniors to get expert feedback on the topic, so you're in the best position to get useful feedback from non-experts and should go first. If you've met with your advisor only once (or not at all), any feedback you get may be irrelevant after you talk further (or at last) with your advisor about your topic, so sign up for the third slot.

This activity will be as useful as the class makes it. It can be a waste of time if you want, but as long as you're here anyway and you care about each other, it would make a lot of sense to make it as productive as possible.

Use of Human Subjects

For the official guidelines, go to the Miami University Web site and search for Committee on the Use of Human Subjects in Research. As you try to decide whether or not you need to secure permission from the committee, take the word "subjects" seriously. If there is information out there that other people have generated, if it's "found" knowledge and you didn't cause it to happen or intervene or initiate it, you can use it (even if it's highly personal) without getting permission from the committee. If, on the other hand, you are setting up an experiment or a research procedure that systematically causes the information to be generated, if you treat people as subjects in your research, then you must get permission. You can ethically observe or listen in a naturalistic way, or engage in casual conversation with someone you encounter in the normal course of your day, and take notes without permission from the committee; if you set up the encounters, especially if you do so repeatedly and systematically, then you need permission from them. Even when you do not need permission from the committee, however, it is good practice (whenever possible) to get permission from the people you quote before you use those quotations in your project, and you should disguise their identity to the extent they desire. It's a good idea, again as feasible, to get that permission in writing.

Remember, though, that a "personal communication" is down near the bottom of the hierarchy of credibility of proof. A personal communication is least credible as proof when it was oral and private; it's more credible if it's in writing (e.g., an email message that you can print out and include in the appendix of your project), especially if it's public (and others were present who can attest in writing to the accuracy of your claim). That doesn't mean you shouldn't use personal communications to illustrate a point, but you should try to establish the credibility of that step in your argument using evidence that has been generated and vetted through established scholarly procedures (e.g., generated through a scientific experiment and published in a refereed scholarly journal). The reason that personal communications are so far down the hierarchy of credibility of proof is that they are not readily verifiable; the skeptical reader cannot check out their legitimacy or your interpretation of them. On the other hand, personal communications can be quite impressive as illustration once the accuracy of your claim has been

established. So proudly quote the email reply you got from the head of the group you are studying to illustrate how they think about a policy whose existence you have established using evidence in published sources.

The Literature Review

The Task. In a nutshell, your literature review should explore broad topic areas of your project that were ideally (but not necessarily) identified in your annotated bibliography, and survey the literature on each to figure out the major features of that intellectual landscape: the (let's say) half a dozen main issues that people are talking about, the key authors engaged in each conversation, each author's position on the issue, and the major books (and, in unusual circumstances, journal articles) in which that conversation takes place. An issue can be stated as a question, the answer to which would involve not merely the recitation of uncontested facts but rather the exercise of judgment, the statement of opinion, or the expression of belief. It's not an issue if everyone agrees: an issue has at least two sides, often several. For issues persisting more than a generation, how has the issue evolved?

The term "literature review" is actually a misnomer in this course, in that you will be writing several separate lit reviews (perhaps 5 or 6), one on each topic. If all went well in your annotated bibliography, you identified the key topics within the general subject area of your senior project, and found a number of key books on each topic. Your tasks for each lit review are to skim through parts of those books on a topic:

- determining if the topic you identified in that section of your annotated bibliography is really the topic you should focus on in that lit review;
- adding or subtracting books from that section of your bibliography based on what you find as you skim, and adding journal articles where they present the seminal work;
- collecting basic information and taking notes on
 - *the issues (maybe half a dozen for each of 5-6 topics)—not their argument, but what they are arguing about,
 - *key authors (maybe 2-4 per issue) and the perspectives from which they are writing,
 - *the overall position of each author on that issue (labeled, not elaborated),
 - *the books or (rarely) journal articles (one or two for each author) in which they set out that position; and then
- writing a paragraph on each issue in which you succinctly set out the information above.

Before your first lit review, include a brief paragraph on your project so readers can understand and evaluate your choice of topics. Conclude each lit review (or the entire set of lit reviews) with a bibliography (annotated or not is up to you) of the works mentioned in the lit review. (You will probably not include all the books in your annotated bibliography.) Once you've completed all the lit reviews, you should arrange them in a sequence that makes sense to you. Some advisors will request that you then explicitly link them (perhaps by a transitional sentence at the beginning or end of each lit review), but that is not a workshop requirement. Even if you don't link the lit reviews before you hand them in, your next assignment in workshop will be to draft an outline of your project based on what you learned in writing your literature review, and that will force you to think about the links between topics.

Like the annotated bibliography, the literature review is of instrumental value. Both are tools you use to set up your project. The literature review is a tool that you use to get your bearing in the intellectual landscape surrounding your topic, so that you can figure out how to locate your project within that landscape.

The Process. If you write one paragraph per issue for 6 issues, and average 2 paragraphs per page, it's a reasonable guess that you'll write something like 3-4 single-spaced pages on each topic, which works out to 15-25 single-spaced pages for all 5-6 lit reviews combined (if you write succinctly). This estimate is not a page requirement, though. The requirement is to complete the tasks above. The number of topics, issues, authors and positions, and books will depend on what you find when you start digging around in the professional literatures relevant to your project.

You need to pace yourself as you work on the literature review. Do the math. See how many days you have before you hand in your literature review and how many topics you need to cover, then calculate how many days you can devote to each topic. As a first guess, allow half of that time for looking through the books and taking notes, and the other half for writing. (After you've completed the first topic, you can adjust those proportions according to how much time you actually spent on each.) For reading on each topic, see how many books you have to look through and take notes on, allowing for several more that you'll discover you need to add, and calculate how much time you can devote to each book. For writing on each topic, assume half a dozen issues and a paragraph for each issue to figure out how many paragraphs you need to write each day. If you stay on task and allow enough time for each task, you won't have trouble finishing the lit review on time. Don't think of the lit review as a single huge paper, but as a long string of separate tasks, each of which is quite doable. You're much less likely to procrastinate or feel overwhelmed, and you're much more likely to finish. That's important: most seniors who crash and burn do it at the literature review stage.

Before you decide whether you have appropriately identified a topic and determined what the key issues are, you'll need to look through all the books in that section of your annotated bibliography. You look not for what they're saying, but for what they're talking about. If you find that many of them refer to a few books you don't have, you need to get them out of the library and look through them as well, because they may be classic texts or seminal works on that topic. You may also discover that a book you thought belongs in this lit review turns out, when you look more closely at what it discusses, to belong in another lit review. Once you've looked through all the books for a lit review, you're in a position to sort through the issues under contention, deciding which are potentially relevant to your topic and which are clearly irrelevant.

As you look through each book, start with the annotation to remind yourself what the topic is, the approach of the book to that topic, and what perspective the author is taking. Now look to see what issues the book addresses, what the author's position is on each issue, and any other authors (or key books) it keeps referring to. You are not looking for the author's line of argument, or for what the author says about each issue; leave that for when you write the chapter that addresses this topic. Normally, you start by skimming and then selectively reading in the introduction. If that is sufficient to identify major issues and the author's position on each, then you can limit yourself to flipping pages in the relevant chapters to identify which authors or books are cited most often and to see if anything else jumps out at you. But if you finish the introduction unclear about the key

issues or the author's position on them, then you'll need to skim and (very) selectively read sections of relevant chapters. In that case, you may want to read the introductory and concluding paragraph of the chapter and maybe even the first sentence of each paragraph. Don't try to find out what the author says about an issue, but merely characterize the author's overall position on it (e.g., feminist or liberal or anti-environmental), and don't read whole chapters much less whole books. Take brief notes (i.e., a word or a phrase at a time) on each book, listing issues, positions, and key authors and books. Get additional books out of the library that your authors kept citing, and take notes on them as well. Then compare your notes on the books you've examined to determine the key issues; narrowing down to the half dozen or so that seem most relevant to your project from the much larger number they probably discuss.

While the section headings from your annotated bibliography may be a reasonable first approximation of the appropriate topics for your lit reviews, you need to be responsive to what topics are actually discussed in the literature. The topics that you presumed are the focus of the literature may be stated too narrowly, perhaps slanted towards your interests. Instead of looking *for* information, look *at* the information; be open to changing how you think of a topic based on what you find in the literature. That means not only listening intently to what other scholars are saying, but also paying close attention to what they are talking about. When you do, you may discover that you need to pull back and generalize those topics. The need to generalize topics is particularly strong when the topic crosses disciplinary boundaries so that aspects of the topic are addressed by different groups of scholars who don't read each other's work. If you state the topic the way one discipline does, you cut off contributions from the other disciplines. Find a more general way of stating the topic that is responsive to all the contributing disciplines.

While you choose what topics and issues to write about in your literature review based on what you think your project is going to be about, the literature review itself focuses on what other people are talking about; it's not about your project. Other than the paragraph at the beginning that states what your project is about, there should be no mention of your project in the rest of the literature review. It's premature to talk about how topics or issues relate to your project, because you can't be sure exactly what your project should be about until you find out what other people are discussing. Only then can you situate your project in relation to the work they've done. You don't write your project in an intellectual vacuum: like Sir Isaac Newton, you see far because you stand on the shoulders of giants. Even if you're creating a new field, it's composed of turf from other disciplinary fields; your topic is an amalgam of their topics.

How not to research a lit review. A common mistake with lit reviews is to end up treating them like a string of book reports. Suppose, for example, that the topic of your project is community art and you decide that one lit review should be on the history of art—to put the art side of the topic in context. So you start looking at major art history texts, and quickly select Janson's *History of Art* as an exemplar of traditional art history. You also discover that there are a number of art historians who challenge that traditional approach to art history from perspectives such as postmodernism and feminism. So far; so good. But when you start writing, you find yourself laying out the traditional approach to art, and you write page after page on it until you realize that something is wrong. Essentially you're writing a book report on Janson's *History of Art*. Moreover, you can't figure out how much detail to include and thus where to stop, and you've set yourself up

to write pages more on the postmodern and feminist approaches to art—essentially more book reports—and more pages yet on their critique of traditional art history. You realize that when you're done, you'll have written at least half a dozen single-spaced pages for one lit review of the 5 or 6 you plan for the literature review as a whole, and you still don't know what the issue is. It's time to rethink your entire approach to the literature review. Instead of focusing on the approaches to art history themselves, focus instead on the nature of the disagreement between them. Ask yourself what, in essence, these people are arguing about. What you discover, I think, is that, at the most fundamental level, they are debating the nature of art: traditional art historians see art as the representation of beauty, as an aesthetic, whereas post-modernists and feminists see art as a reflection of inequalities in a particular culture. So start your first paragraph in the lit review on the history of art with a sentence saying that the most fundamental issue in the history of art is over the nature of art. The next sentence identifies the two dominant perspectives, followed by a sentence each on their position on the nature of art. Then you devote a sentence or two for each perspective to identifying the key 2-4 authors and books, with pithy characterizations of the specific position of each. End of paragraph. Now you are ready to start the paragraph on the next issue in art history.

A related mistake is to devote each section of your lit review to a single discipline or perspective. In a project on legalizing gay marriage, for example, you might find yourself writing separate lit reviews on religious views of marriage, sociological views of marriage, anthropological views of marriage, and historical views of marriage. At some point, you realize that what you're writing reads like sections of a chapter, not a lit review. You're right. Moreover, you've been trying to write that chapter before you've even sorted out what the issues are that it should address. Again, you need to step back and rethink your approach to the literature review. When you go back to the explanation of a literature review, you realize the topic of this lit review should be "traditional marriage," and within that topic are several issues discussed from religious, sociological, anthropological, and historical perspectives. One issue is, "What is the function of marriage?" and authors from each perspective have something to say about what that function really is. Another issue might be, "How are the roles of each partner determined within a marriage?" and again, authors from each perspective have something different to say about it. So you start again, writing a paragraph on each issue within a lit review on traditional marriage.

You may also find as you start examining a pile of books on the topic of risk factors for families with eating disorders that you keep focusing on discussion relevant to gender development, because that's the topic that most interests you. This is a problem of "psychological set." You are used to going into a book and finding the things that you are interested in, so you need to shift mental gears and learn to focus instead on what the authors are interested in. Remind yourself of your mission before you open the book.

If you have a section in your annotated bibliography that lists primary sources such as texts or documents that will be objects you study in your project—for example, the works by a novelist who is the focus of your project—don't include them in your literature review. That should focus on secondary, not primary, sources. A primary source is a text that gets analyzed; a secondary source is a text that analyzes. For instance, a project on graphic novels may include a list of graphic novels in the bibliography, but those are primary sources and don't get included in the literature review. If you are

studying class in capitalist societies, Marx and Engel's *The Communist Manifesto* is a classic text; if Marx himself is the focus of your study, however, the same book is a primary document. Primary texts are analogous to works of art studied by an art historian or artifacts collected an anthropologist. They are phenomena to be studied in their own right and thus important (maybe even crucial) to your project, but they don't belong in your literature review. The issues are raised in secondary sources, the scholarly work commenting on those primary texts or documents.

The literature review is not about your opinions on the issues or positions you find in the literature; it's about them not you, about their work not yours, their ideas not yours. Granted, writing a lit review requires you to make all kinds of judgments in order to describe their work and to decide whether it's relevant to your project and thus belongs in your lit review. And the books you examine don't always identify the larger issue, so you may have to come up with a label for it; and they typically don't say who the key players are, so you have to infer it. You have to judge whether an issue is relevant to your project (bearing in mind that inconvenient positions—one's that don't support the argument you want to make—are very much relevant). If you feel the urge to challenge something you're reading for your lit review, put your comments in a file on that topic or author or issue, not in your lit review. If you were to include your opinions, you would actually undercut the usefulness of the lit review; you want to be able to contrast your opinions with those of other authors, and you lose the contrast when they are intermingled.

Without a literature review, you would put yourself in the position of trying to write your project in an intellectual vacuum, unaware of the relevant conversations taking place in the various professional literatures that have potential bearing on your topic. You not only miss opportunities to enrich your argument, but your project comes across to the very experts you most want to impress as naïve and ill-informed. They assume that a project on your topic will deal with the issues they are used to seeing addressed; they expect to see certain discourse communities represented. If they are to take your project seriously, you have to show them how you address the issues they think should be included; even if you make the case for why one of these issues should not be included, you at least need to acknowledge it. Put differently, you need to show them how what you are interested in relates to what they are interested in, so they know how to approach your project. Then they are in a position to appreciate what you are doing and more predisposed to take it seriously.

Identifying issues. We speak of the issues in a lit review being “discussed” or “debated,” but that may in fact be a figure of speech, not an accurate description of the professional literature. In a literature review for a disciplinary project, you can feel confident that scholars in the same discipline and interested in the same issue will actually read each other's work. They really are engaged in a discussion or debate in the discipline's professional literature. But when you are writing a literature review for an interdisciplinary project, you are interested in issues that may cut across disciplinary lines. In that case, the scholars from different disciplines writing on different aspects of the issue typically do not read each other's work. You may be the only one who realizes that a larger “conversation” is in progress in which the overall issue is being “debated.” It's your job to identify the larger issue of which those aspects are a part, and bring them together in your lit review (and then in your project). This task of issue construction may

be complicated by incompatible terminology used by the different disciplines or interdisciplines.

There may be no debate over a particular issue because the opposing positions focus on different topics. If you're interested in fiction for adolescents and you look for debate over gender roles, you may find that almost all the authors write from a liberal feminist perspective. That's because they find traditional gender roles problematic in adolescent fiction. Conservatives have no trouble with traditional roles, so they see no need to raise the issue. What do interest conservatives are what they call family values, so to find the conservative perspective on gender roles you need to go to the literature on family values, not to the literature on adolescent fiction. In the language of Boolean logic, you need to look at the union, not the intersection, of the literatures on adolescent fiction and conservative views on gender roles, i.e., look for conservative views on gender roles *wherever* they are expressed since they don't show up in the literature on adolescent fiction. Ask yourself what there is in this entire conservative perspective that has potential bearing on your topic, not just what those authors have chosen to write on your topic but what they could have written on your topic. You have to apply that perspective to your topic yourself, since they don't do it and you need their perspective. What you cannot do is try to infer right-of-center positions from left-of-center critiques of those positions, because the right-wing positions are almost certainly distorted in the critique.

In general, Western courses give you critiques of the mainstream but not the arguments of its supporters. If you choose issues that presume the mainstream is problematic, i.e., if you let the leftwing authors frame the issues, then you are going to have trouble finding the opposing (mainstream) perspective. If authors come out of a perspective that sees the status quo as acceptable or even desirable, then those authors will not be inclined to write about that status quo in the literature you are examining unless they bother to take the time to defend it from critiques. To them the concerns of the left are non-issues. Even when they defend the mainstream against critiques, you get a distorted understanding of their perspective because they were not the ones framing the issue. To understand the mainstream perspectives, you need to turn to other literatures in which they set the terms of the discussion, to literatures that focus on the issues of interest to them. When you find their issues and compare them with the leftwing issues, you need to ask yourself what they have in common. What is a more basic issue that is responsive to both sets of concerns?

In literatures on topics such as Web design management and customer service that have an applied, as opposed to a theoretical, focus, there may not be many issues to find. Even if experts once disagreed about how a task should be accomplished, those differences of opinion may have been resolved. (Ask yourself how much disagreement remains over the differential calculus, for instance, since the day of Newton and Leibnitz. It's now a body of knowledge that is totally non-controversial—it's become what is called 'received wisdom'. You don't discuss it; you shut up and memorize it.) Such books will still have differences in emphasis, which you can identify by looking at how much space they allocate to the various sub-topics, but you need to decide whether those differences in emphasis have any significance for your project. By putting more emphasis on a sub-topic, an author obviously assigns it more importance, places a higher value on it, and focuses more attention on it. You should ask why—what's the implicit message here? After you've looked through several such books, you'll begin to see that they can

be clustered on the basis of what they emphasize. Ask what the authors in a cluster have in common: are they all from economics, all feminists, or all from the third world? Once you figure out what they have in common, you can probably figure out why they place different emphasis on certain sub-topics. If you determine that these differences in emphasis are relevant to your project, then by all means include them in your lit review. If not, you should turn to the disciplines on which they draw, and see what issues those disciplines raise for your project. Management and marketing, for example, draw frequently on psychology, economics, and sociology, and sometimes on anthropology and geography. Those disciplinary are much more theoretical in their approach and raise lots of issues, some of which will be inevitably be relevant for your project.

At the other extreme, you may find that there are *dozens* of issues in a particular literature. If so, try to discern the handful of *basic* issues from which they emerge. These basic issues may be up so close—like water around a fish—that you can't even see them at first. You need to abstract from the detail, and step back to a more general level. What broad headings do those dozens of issues fall under; what larger issues are they instances of—what larger or more fundamental issues can they be subsumed under? If your broad topic area is microfinance institutions, for example, one of those broad issue headings is, “Where do they get the money to lend to poor people?” Under that broad heading are lots of narrower issues; e.g., “How do you promote savings among poor people?” and “How do nonprofits organizations attract donations for microfinance projects?” In short, you can address the problem of too many issues by clustering or grouping issues.

Alternatively, if you have too many issues, it may be that some of them are only indirectly relevant to your project. If issues are connected to other issues that are connected to yet other issues, where do you stop? How far down that path do you need to go in your lit review (and in your project generally)? The test should be direct relevance to your project: if Issue A has bearing on Issue B that has bearing on your project but Issue A doesn't have any direct bearing itself on your project, then don't include Issue A in your lit review. Instead of treating some feature of Issue B as problematic and including Issue A that addresses the feature, treat that feature as an assumption about Issue B that is made differently by different scholars. You are interested in Issue B as a means to illuminating your project; you are not interested in it as an end in itself. The people discussing Issue A may be interested in Issue B as an end in itself, but you're not. In a sense, you're fighting your own training as an interdisciplinarians which draws you to interrelationships whether they are relevant or not; for the interdisciplinarian, connections are fascinating in their own right. You need to resist for now those otherwise wonderful predispositions; set them aside while you work on your literature review. In short, another strategy for addressing the problem of too many issues is to exclude those that are not directly relevant to your project.

Whenever possible, you should label the issue the way it's labeled by the people involved in the debate. Sometimes, however, you may find lots of debate, say between environmental pessimists who believe the environment is going to hell in a hand basket and environmental optimists who insist everything is under control (or will be, with the help of technology or the marketplace), but nobody identifies or labels the overall issue being debated. In that case, you have to decide for yourself how to label the issue—in this case, it might be “The Overall Health of the Environment.”

As you read on a topic for a lit review, you may encounter issues that belong in another lit review. I suggest creating separate files for each lit review, and noting in that file the book and page number that you'll want to come back to when you start that lit review.

If you find that an issue shows up under more than one topic, it forces you to look ahead to your project and think about the overall line of argument that's starting to take shape in your mind. Ask yourself where in your project it will be best to address this issue, and place it in your literature review under that topic. You can note in the other lit review that the issue also appears there, so when you come to write your project you can foreshadow or revisit the issue when you get to that topic.

What do you do when you have a number of history books that present the same facts, so there doesn't seem to be any issue? The first thing to do is ask yourself why they were all written (and how they all got published) if they say the same thing. They may agree on the basic facts—most historians do—but their interpretations must differ in some way. They embed those facts in a different context, emphasize or highlight different facts, put a different gloss or spin on the story, or draw different lessons from the events. These differences are what historians (perhaps implicitly) debate, and what make up historical issues. In short, what are at issue in histories are interpretations more than facts. Is the American Revolution a story of good triumphing over evil, another chapter in the on-going struggle between France and Great Britain, the beginning of a grand experiment in democracy, the prelude to the extermination of native Americans, the opening of the last great frontier for human settlement, or the beginning of the end for the last great wilderness? These are issues of historical interpretation. The facts are occasionally in dispute, but more often the disagreement is over which facts to emphasize, how to contextualize them, and what lessons to draw from them.

If you are drawing heavily on the natural sciences, especially if you are drawing from the journal literature, you may get the impression from the way the articles are written that there are no issues, only a slow accumulation of facts. Even if you ask, Why gather these facts and not others?, you may get the impression that there are layers of smaller and smaller topics but not issues, because there seems to be no debate. But there are issues and a hot debate about them going on below the surface, and one way to find them is to look at the popularized literature by scientists on those topics. There the gloves come off, and normally circumspect scientists reveal the debate that otherwise takes place in professional conferences, email correspondence, list serves, departmental seminars, and graduate courses; alternatively you can ask your friendly local scientist. Many scientific issues are so big that most of the professional literature does not explicitly address them; indeed, most scientists feel that all they can contribute are a few facts to add to a growing body of evidence that eventually will tip the scales towards one position or another.

In general, if the books in a lit review seem to present facts, not issues—e.g., information on the destruction caused by various hurricanes—then ask yourself why those facts were collected. What is each author amassing this information in order to make a case for or against? What underlying or implicit issue is the author illuminating; what positions on the issue is the author evaluating by coming up with these data? Facts are compiled and published for a purpose, usually in response to claims made earlier in the professional literature. What were the issues or claims about them that led to the books you are examining for your lit review?

It may seem presumptuous to mention in your literature review some really basic or fundamental issues underlying the narrower issues that have more obvious bearing on your topic. But the more fundamental the issues you can legitimately connect to your project, the larger the significance of your findings and the wider the range of potential readers. You are unlikely to resolve any basic issues, but if you are able (probably by virtue of your distinctive interdisciplinary approach) to shed any light at all on one of them, you will be accomplishing more than most scholars do.

Many seniors find some of their issues overlap or interrelate, which isn't surprising in interdisciplinary projects. You may mention those connections in passing in your lit review if you wish, though there's a lot to be said for keeping the literature review neat and simple so you may want to identify such connections in a separate computer file on that topic. Those connections start to become relevant in the outline you will draw up as soon as you complete your literature review, and they become important as you write the individual chapters of your project.

Writing a literature review is challenging because you're looking at voluminous literatures and trying to pick a few things out. But you've narrowed the literatures down a lot by selecting books that seem relevant to your project. So for a project on the effects of childhood experiences on the adult Malcolm X, you're not really asking what issues are being discussed by the entire literature on family theory; you're asking what issues the family theory books discuss that seem most relevant to the childhood experiences of Malcolm X are talking about. By the fourth or fifth book, you may realize there is an issue that all of them are talking about, and some are devoting a lot of space to it. Different authors use different labels and some don't label it at all, but none of the labels seems quite right to you, so you need to come up with a word, phrase, or sentence that captures the essence of what these authors are debating and characterizes it in a way that makes sense in terms of your project. Most authors are so caught up in the details, even the minutiae, of the argument that no one bothers to step back and see the conversation as a whole and give it a label, so you need to do it. It involves making synoptic judgments, but you're characterizing not evaluating what they are saying, and you're trying to understand the issue and their positions on it in their terms, not yours. The only evaluation you're making is whether the issue has any potential bearing on your project, but you don't spend time in your lit review discussing that evaluation; you either include the issue in your lit review or you don't.

Troubleshooting the literature review. One student likened the process of categorizing topics and identifying issues within them to sorting a pile of clean laundry. If you find a loose sock and are looking for its mate, it is easier if you have a sock pile separate from the pants pile and the shirt pile. And it is easier to make distinctions between everyday wear like jeans that can be folded to go in a drawer and dress pants that need to be hung up in the closet. She's right. It's easier to sort through topics and issues, categorizing them before you start trying to make connections among them and figuring out how to use them. The bigger the pile of laundry and the taller the stack of books in the research project, the more important it is to develop a logical systematic strategy to sort through them.

If you are writing a lit review that deals with a topic you studied in several courses and wrote papers on, you may have trouble seeing the forest for the trees. You may be too close to the topic and too wrapped up in its details, sub-arguments, and inter-

connections with other topics to see it as a whole. In that case, your challenge is to step back from most of what you know and look at the topic with a fresh eye in order to discern the handful of really big over-riding issues.

If you have fifteen books in your annotated bibliography on a single topic, some of them are probably redundant. They may be dead on your topic but some of them will be dead on the same spot within that topic. They'll have differences, of course, but maybe not ones that make any difference for you; i.e., they differ in ways that are not relevant to the use you plan to make of them. In that case, look to see which ones are cited most by other authors and use them in your lit review. Be alert, however, for books that deal with the same topic from different perspectives. Make sure you include all the relevant perspectives.

Many students have trouble skimming and reading selectively instead of reading the entire book. For journal articles, read the abstract; if a particular article is available on line, you can search it for key words. For books, you should start by reading the introduction (to identify the issues and the chapters in which they are addressed, as well as to confirm the perspective from which the author is writing) and maybe the conclusion (if the introduction is unclear about the author's position on those issues). Some people prefer to go back and forth between introduction and index, which has the advantage of pointing them to specific pages. For books with popular appeal, you can try the "Search Inside the Book" option available for some publishers on amazon.com to find the pages with the key words you enter, looking at those pages in the hard copy of the book in front of you. If the library has the full text on line of your book, you can search the same way and then use the "go to" function to examine those pages on line. (One student tried turning on the TV to distract her enough that she couldn't read but could only skim.) However you arrive at the chapters of most interest, you should limit yourself to flipping pages until key words pop out at you unless it was unclear from the introduction and conclusion what issues are addressed or what the author's position is on those issues; in that case, you can try reading the introduction and conclusion of a chapter, and if necessary first sentence of every paragraph, to find the relevant parts of the chapter. You don't need more detail than the author's position on the issue—whether the author is taking a post-modern or a feminist position, a pro or a con position, or the position that the debate is about the wrong thing. Save the author's line of argument—*why* the author holds that position on the issue—for the next time through, when you write the chapter dealing with that issue. The less reading you can do and still complete the lit review, the better. Don't worry about missing something important; you will find it the next time through when you're writing chapters.

As you start to read selectively in the books from one section of your annotated bibliography in preparation for writing a lit review, you are likely to discover that some of the books in your bibliography are not very useful and that there are other books or authors that should be included (perhaps because everyone you read on that sub-topic seems to refer to them). If so, update your annotated bibliography. Remember that it's a working tool that you will continue to revise right up to the end of the project. As you start work on a section of your lit review, think of the annotated bibliography as a starting point in your search for literature, but you won't use some of those books in your literature review and you will use a number of books that are not yet in your literature review. When you remove books from your annotated bibliography—in fact, when you

remove anything you've written at any point in your project—put the information in a discard file in a graveyard folder, simply because you may change your mind later and decide something you discarded earlier is useful after all.

If the book is an anthology, then the table of contents should reveal the topics covered. If only a couple chapters are of interest, then normally you can treat them like journal articles and read only the abstract (or introduction if there is no abstract). The exception is the occasional zealous editor whose introduction synthesizes the contributions of individual authors into an original piece of scholarship. The overwhelming majority of editors, however, write an introduction that is a mindless recitation of the main point of each contributor as the contributors saw it; the editors add little if anything new so you don't need to waste your time on them. On the other hand, if there are a dozen chapters of interest to you, it's likely that the anthology has some coherence; indeed it's focused in a way you care about. In that case, you do have some interest in the volume as a whole, and you should treat it that way in your lit review, while still making reference to specific contributing authors.

Some of the books in your annotated bibliography may be reference works that provide basic background on your project but do not address issues raised in the project. Normally you wouldn't include them in your lit review, unless you have a creative portion of your project and those books address the process of carrying it out. For example, if you're directing a play, those reference works may address how to set up a budget, where to find costumes, how to audition the cast, etc. In that case, I suggest including a section in your lit review in which you list the tasks and identify which books address each task. List them in the order you'll need them, so that section of your lit review then becomes a time line for the creative portion of your project. This is an example of adapting the lit review so that it becomes as useful a tool as possible for your project, in this case supporting the creative as well as the analytical portion of your project.

If you find yourself arguing that you need only one book coming out of a particular perspective with which you disagree because the others written from that perspective are 'all the same', then a red flag should pop up for you. You need to take seriously perspectives that you don't like, such as perspectives that are politically right-of-center, sexist, or modernist. You don't need to embrace them uncritically, but you need to look for the kernel of truth in them, for their insights that ring true to intelligent people with whom you disagree. Saying they all look alike is reminiscent of Ronald Reagan who quipped, "If you've seen one redwood, you've seen them all" or of whites in the 1960s who observed that all blacks looked the same to them. Today we find such claims abhorrent. Yet when you observe that all adherents of a particular perspective look alike, that's because you too are looking through the lens of the opposing perspective. Like claims about redwoods or blacks, you are betraying an ignorance of the competing perspective. When you lump together people from a competing perspective and say that the differences between them are unimportant, you are, in effect, saying 'all that counts is what I believe is important'. You can still have convictions, but bracket them, set them to one side, while you try to understand the other perspective. To do that, you need to take off the lens of the perspective you prefer so that you can put on the lens of the competing perspective. Look at those authors in their own terms, so that you understand them as they see themselves. Then you will discover there are differences among them,

differences that count within that perspective. Only when you start to see those differences can you begin making use of that perspective instead of caricaturing it.

If you are trying to decide between focusing on only the details of the literature that apply directly to your particular topic or creative component and looking at what the literature has to say in general about your broad topic area, ask yourself how thoroughly the literature has explored your particular topic. Say you are looking at the literature on theatrical lighting and trying to decide whether to look broadly at the literature on use of lighting in general or to focus narrowly on lighting for large musical theatre productions (which is what you're doing for the creative portion of your project). If the literature has largely overlooked your particular topic (which is unlikely in the case of musical theatre but likely for a project on, say, theatrical adaptations of radio dramas), or if it has focused only on the technical aspects of lighting in your particular situation, then you will want to look broadly at the more conceptual discussions of overall aesthetic or design strategies for lighting that are found in the overarching literature on theatrical lighting as a whole. The technical details are ultimately in service of some artistic vision, some conception of theatre, so you need to find where in the professional literature such artistic visions are discussed. The more conceptual the literature, the more likely you are to find issues and disagreement over them, and thus the more appropriate that literature is for inclusion in your literature review. In the case of lighting, one conceptual issue is the focus of lighting: to create a mood for the audience, to inspire the actors, or to highlight the scenery.

Generally speaking, the more detailed your lit review, the more confusing it will be to you when you come to use it. The more you can cut to the chase, the helpful the lit review will become because you'll be able to find things in it. If you can pinpoint the essence of each issue and each position, laying them out starkly in a skeletal framework, then it will be most user-friendly and you won't get lost in detail. You need to be able to see the forest in spite of all the trees. Your problem right now is information overload; your challenge is data reduction. You can add in all the detail when you write your chapter.

What you can learn from completing the literature review:

- A section that you thought would be minor turns out to be the most important topic for your project. Looking at the issues regarding that topic may give you ideas about how they apply to your project; just asking whether an issue is relevant to your project is enough to get you thinking about the possible uses of that issue. If you have a creative portion to your project, those issues can help you shape what you want to accomplish in it, and that in turn drives the focus on the analytical portion of your project.
- It may help you identify gaps in your course background and affect what courses you take second semester.
- You may realize that you are capable of figuring out a lot on your own because new topics and issues have connections to topics and issues you've studied.
- You may come to appreciate the complexity of a topic and the need for an interdisciplinary approach to it. For example, you may discover that soil science studies soil systems that have solid, liquid, and gaseous phases as well as biotic and a-biotic states, and their interactions vary from one micro-climate to the next. It's a biogeochemical system that has to be understood in terms of the geological history and climatology of the region.

- Similar or overlapping phenomena can have different labels because they are studied by different disciplines (e.g., social movements from sociology and interest groups from political science; ads from marketing, illustrations from graphic design, and persuasive visual communications from communications). If you can identify the factors or variables that produce the major distinctions between them, you can construct a model that sets out the network of interrelations between those disciplines.
- The separate topics such as economic development, environmental impacts, and disease prevention may all relate back to a single theme, such as sustainability; if that theme is at the heart of your project, what you've done is validate your choice of books and give a label to your criterion for selecting them.
- Discourse communities go through cycles of intense debate which culminates in one group winning out, stalemate, or perhaps (as in the nature-nurture debate) the recognition that both sides were partly right, followed by a period of "normal science" (à la Thomas Kuhn) in which all the implications of that paradigm are worked out. During the early period, you tend to find hot argument, lots of sides, and little evidence to back up any position—debates generate more heat than light because they're based more on presupposition than on fact. As time goes by, the field develops clearer definitions and an evidentiary base that can be used to settle disputes, so positions start to coalesce; and by the later period, "debate" becomes mostly a matter of emphasis—it's over differences in degree not type. But at some point, perhaps as much as a generation later, another major issue will flair up, and the cycle will resume. Part of what you're doing when you come on a literature for the first time is finding out where it is in this cycle. After all, it's the luck of the draw where in that cycle you happen to first encounter a literature, where the field is in its evolution. It's quite possible to find that a discourse community is in a mixed part of the cycle, with a couple issues hotly debated and several others engaged in normal science. But it's also possible that you've failed to identify the issues for any of the reasons discussed in this manual.
- Whenever you encounter a topic or issue across an ideological divide, with deeply embedded beliefs or powerful emotions on both sides, there will be a lot of distortion of the opposing side. People talk past each other rather than engage each other's ideas. At least you have a topic or issue that is obviously important. Other projects will find themselves trying to convince readers their topic or issue is worthy of attention, worth taking seriously.
- An issue you thought was contemporary may have been going on for a long time, perhaps under a different label, especially if it is a really basic or fundamental issue.
- If the same terms keep popping up in different books, you can go on line to Sherlock and do key word searches for those terms to see what else has been written on them.
- Even though you're trying not to look for connections, organizing the literature review by topic and then issue helps you see where the connections need to be made.

Literature Review Presentations

Literature review presentations focus primarily on problems you encountered in completing your first lit review. Like earlier presentations, they are not graded, and the point is not to show off what you know, but to get help with what you don't understand. In your lit review presentation, you should tell people what approach you took to that lit review, what problems you ran into implementing that strategy, and where you need help.

Especially in later presentations, it might also include a report to the class on a strategy, an approach, a technique, or a way of organizing yourself that worked well. Sign up for a lit review presentation for the first date you think you'll have one lit review completed. That way you will have been through the whole procedure once, and it's a good time to straighten out any confusions you have or difficulties you ran into before you repeat that procedure for other lit reviews.

You sign up twice, the first time around to present, and the second time the sheet comes around to give feedback to someone else in your affinity group. Where there are three people in an affinity group, two people cannot sign up to give each other feedback because that leaves out the third person.

To provide written feedback on a lit review presentation, listen intently to the presentation and then to the conversation that follows, take notes, think critically about the presentation and the oral feedback, and make some evaluative judgments. The presenter should also give you a copy of that lit review to read over as well. You don't just report on the feedback of others in class; you evaluate it. Instead of giving immediate oral feedback in workshop, focus any contribution to the class discussion on asking for clarification. Your judgments in your feedback may include statements like the following: "I know you received a couple suggestions in class that you focus on the feminist approach to your topic, but on reflection I don't think that's a good idea because..." Your grade on the feedback will be higher if you show serious intellectual engagement; discriminative judgments informed by some knowledge of topic, perspective, or issue beyond the introductory level; and emphasis on the concerns raised by the presenter. Even if the presenter is your roommate, you still need to write down your feedback so you can email a copy to the workshop director for grading; written feedback is also helpful to the presenter because it provides a record of feedback that one can return to later on.

Outlining the Project

You have mapped out the intellectual terrain in which you will place your project and identified the major relevant conversations taking place in the professional literatures. You know the main topics in each conversation, what is at issue in each topic, and what the prominent positions currently are on those issues. Now you need to shift mental gears again, this time back to focusing on your project. Before you are ready to start outlining it, though, you have a number of tasks to accomplish.

First, you need to adjust your topic so you can take best advantage of those professional discussions, both drawing on them and contributing to them. Determine if you need to narrow or widen your topic, shift it by dropping some aspects and adding others, or bring it into clearer focus. (See *Narrowing Your Topic*.)

Second, once you have adjusted your topic in light of its intellectual contexts, start thinking about the connections between your project and the topics, issues, and positions you identified in your lit review, as well as connections among those topics, issues, and positions themselves. Now is the time to go back to the extra files you created as you were working on your literature review to remind yourself of the connections that struck you as you were skimming. (See *Identifying Linkages Among Disciplines*.)

Third, you need to identify the state of scholarly understanding of the topic of your project, i.e., its location in the academic lifecycle. Senior projects look different, and

the challenges they face differ, depending on the state of scholarly understanding of the topic. Those topics that the disciplines are just starting to address present you with the challenge of inventorying and organizing fragments of insights from various scholars to take away some of their randomness and identify some preliminary patterns, maybe even developing some theory of your own. Topics that scholars have mulled over for years present the challenge of reassessing well-established ways of understanding in light of insights emerging from your new, more comprehensive understanding. Topics early in the academic lifecycle are likely to start from preliminary, low-level theory at best, and there may be no agreement in the professional literature on the definitions of terms; topics later in the lifecycle are more likely to be understood through theory that has taken on the status of unassailable truth expressed in terms whose definition has become self-evident. One location in the lifecycle is not preferable to another; the challenges for your project are merely different. The earlier in the life cycle you encounter the topic, the sketchier your new understanding will be, and the more it will focus on defining concepts and developing a new theoretical framework. Later in the life cycle, the more developed and nuanced your understanding can become, and the more it will focus on modifying existing concepts and theories. No matter where you are in the life cycle, the essential challenge to the interdisciplinarian remains the same, to come up with a new way of thinking that draws on the insights of contributing disciplines.

Fourth, you need to identify the relevant “contexts” for your project. The context of your topic can take a number of different forms. It might refer to placing social behavior in economic, political, cultural, geographical, historical context; to placing chemical phenomena in geological, biological, and evolutionary context; or to placing theatre in the context of film, art, and music. It might involve placing individual behavior in the context of family, peer-group, community, nation, race, gender, and culture; placing phenotypes or species in the context of eco-systems; or placing characters in the context of comparative literature or other media. It can place the study of a particular social phenomenon such as raves in the context of other sub-cultures, youth cultures, countercultures, music scenes, drug scenes, social deviance, or minority groups. In general, to identify the relevant contexts for your topic, ask what larger categories or groups it is a part of, an instance of, an example of. Start with those larger categories—e.g., sub-cultures in general—before trying to apply the concepts and theories, approaches, questions, underlying values, and strategies you find in the literature to the particular sub-culture you are interested in. In general, all interdisciplinarians face the problem of taking something written for one context and applying it to another context. The difference is one of degree—just how much you need to alter a concept or theory to fit the new context.

Fifth, size up the likely appeal and mission of your project. Is its appeal to readers—its distinctive contribution—likely to be intellectual and academic, or emotional and personal? Is the mission of your project likely to be persuasion or exploration? Your answers to these questions will obviously depend in part on your intentions, but they will also be determined by where your topic is in the academic lifecycle and on the contexts in which you can place it.

Once those five tasks are completed, you are ready to come up with an outline that lays out a tentative structure for your project. In your outline you need to identify the overall focus of each chapter and the order of the chapters. Then you need to go back and

tentatively identify the major sections of each chapter, their focus and the order they come in. Don't try to get any more detailed at this point. Choose initial titles for chapters and sections that are focused not broad, specific not generic, so they more clearly suggest your line of argument. Titles expressed in broad generic language suggest a project a general overview of the sort found in Wikipedia articles.

There are at least three basic alternative models for structuring your project: the hourglass, the wedge, and linear-with-digressions. When you have selected the appropriate structure for your project, you are ready to start outlining.

The most popular model with advisors seems to be the hourglass. Projects with an *hourglass* structure move from broad to narrow and back to broad, from context to text and back to context; they present the topic and its subtopics and issues in the most general terms so the reader can see their larger significance, narrow in when they are examined in detail within a case study or focused on your specific topic, and then broaden again at the end to set out the larger significance of those specific findings. The *wedge* starts with a purely descriptive presentation of facts and information about your topic (which may include personal experience or narratives/case studies of the experience of others that have emotional content or otherwise bring home its human significance), then expands in scope from description to explanation by examining available theories and then developing your own more comprehensive theory to explain those facts and information, and finally expands in scope again from explanation to implications by placing your more comprehensive theory in larger contexts. The *linear-with-digressions* model has an overall line of argument from which you repeatedly reach back to bring in other perspectives or issues or subtopics. It oscillates between progression and digression, between moving the overall line of argument forward, and reaching back to a different discipline or perspective to get more material for the next step in the argument.

The decisions you made as you carried out the tasks above may help you decide which structure you prefer. If the topic of your project comes early in the academic lifecycle, so that your challenge is to propose a theoretical framework rather than apply well-established theory, you might want to consider the wedge structure. The wedge structure might also be useful if you expect to be engaged primarily in exploration, or if the appeal of your project to readers is mostly emotional or personal. But if the appeal of your project is likely to be intellectual or academic, and your focus is on persuasion, you should consider using the linear-with-digressions structure. And if the significance of your project is likely to reside in the implications of your findings for some larger context/s, so that your topic is ultimately a means to an end more than an end in itself, then the hourglass structure may be appealing. If you're in doubt, most advisors consider the hourglass the default structure.

As you think about the right structure for your project, you might also want to consider how you normally think. If you like to start with the concrete and move to the abstract, if you start with the details and move to generalities—in other words, if you are most comfortable thinking inductively, then you might find the wedge structure most congenial. If you prefer to think deductively, starting by developing a comprehensive framework and then applying it to a particular case or cases, the hourglass structure may be ideal. But if you are best at constructing a logical, set-by-step line of argument, then you probably want the linear-with-digressions structure.

Finally, you should consider which structure your readers might find most helpful. Should you give readers a theoretical framework to help them make sense of the subtopics and issues, or do you want to get them to appreciate the need for a theoretical framework by asking them to grapple with subtopics and issues first? The hourglass or linear-with-digressions structures work better if you start with a theoretical framework. The wedge is better suited to letting a theoretical framework emerge from subtopics and issues.

Where in your project do you integrate? In the shorter papers you've written so far in college, you could safely set out the different perspectives one by one and leave integration to the end. But, like so many other aspects of the senior project process, that strategy doesn't scale up well. As mentioned earlier, you cannot expect readers to hold a large amount of information in their heads without knowing what they're supposed to do with it. So, somehow, you need to integrate as you go. Suppose you have five perspectives on your topic. As soon as you present the second perspective, you can integrate its insights with those from the first perspective. The resulting synthesis is tentative and partial, but it creates common ground between those two perspectives and highlights the connections between them. Next, present the third perspective and then integrate its insights with the synthesis of the first two. The first synthesis may well be modified, perhaps even reconsidered altogether, but the new synthesis is more comprehensive and a closer approximation to the eventual synthesis, and it is based on broader common ground. Readers have to remember only the synthesis from the end of the preceding chapter, not the complete contents of two previous chapters, in order to integrate their insights with those of the present chapter. By the time you present the last perspective and integrate its insights with those of the other perspectives, it may have only a modest impact on the overall synthesis, but it should be clear what contributions each perspective made to the final synthesis. Synthesis was feasible because it did not require readers to hold too much in their minds at once, and readers were less likely to lose interest or concentration along the way.

Looking ahead, as you research and write individual chapters, you will get an increasingly clear idea about the distinctive contribution of your project, the overall sequence of steps in your argument, and your conclusion. By the time you hand in your complete rough draft, those should all be pretty clear in your mind, though even then you may revise them somewhat (your argument in particular) in light of the feedback you get from your advisor and the workshop director. Through the process of researching and writing the various chapters, you will probably discover that your topic keeps getting fine tuned as well. So think of your outline as you do your annotated bibliography—as a working draft that keeps getting revised as you continue to work on your project.

Writing the First Chapter

The assignment. Write one complete chapter in final form, and then write as much of another chapter (or chapters) as needed to total thirty double-spaced pages (Times 12-point font). The reason for writing a complete chapter in final form is to make sure that you know what standards your advisor and workshop director expect you to meet in a chapter—how polished your writing needs to be, how thoroughly researched the chapter should be, how much depth and detail you need to go into on each topic and issue, and how much and how explicitly to structure the chapter. Almost inevitably you'll

end up rewriting the complete chapter after you've finished writing all the other chapters, but write it as if it were the final version, complete with chapter number and title, section headings, footnotes or end notes, an introductory paragraph that provides a segue from the previous chapter and explains what the chapter is about, a concluding paragraph that provides transition to the next chapter, and the entries from that chapter for the bibliography and (if needed) the glossary.

Seniors have come up with several strategies for deciding which chapter to write first: the one that draws on a class you're currently taking (especially if you have to write a paper for it that allows you to make use of your research for the chapter); the one you know the most about or that is easiest; the chapter that provides the most important background or context for the other chapters; a pivotal chapter that will determine which direction the rest of the project takes; the chapter that best prepares you to carry out the creative portion of your project; and the first step in a logical sequence. Decide which best fits your situation.

A distinctive challenge of writing interdisciplinary projects is that everything needs to go first. The reader needs to see all the other parts before any one part can be appreciated; moreover, it would be helpful to see the whole in order to appreciate the significance of any one part. You might say that readers need to finish reading an interdisciplinary project before they are ready to start reading it. More realistically, they need to have at least some familiarity with each of the different parts and some sense of the whole before they are ready to appreciate any one part in detail. This places a heavy and distinctive burden on the introduction of an interdisciplinary work. Think of the introduction as providing a quick and dirty overview of your entire project—not just of the topic and the issues surrounding it but also of your overall line of argument. When you think of the introduction that way, you can see why you have to write it last. But it frees you up to focus on the chapter you are now writing when you realize that the introduction will provide some background on the chapter you are writing and on how it relates to the other chapters. What you cannot do is expect readers to hold all the pieces of your argument in their heads before you let them know what they're supposed to do with them. People retain information best when they can synthesize it with information they already know, but they do a poor job of retaining it when they don't know which pieces of information are most important; and they do an even worse job of thinking critically about that information when they don't know what they're going to end up doing with it. So the introduction needs to provide a framework in which readers can place the facts, topics, issues, and parts of your argument before you pull them together in a synthesis.

If your chapter deals (in part or in whole) with a topic from one of your lit reviews, then you are faced with figuring out (for the first time) the relationship between the issues discussed in the literature on that particular topic. One way to do that is through a concept map. It's a tool for organizing your thinking that you may find useful.

Now is the time to go back to the topics, issues, and positions that are relevant to this chapter and read those sections of each book for the arguments it advances. Only now are you in a position to determine which arguments are actually useful to your project. Because you started skimming the literature instead of reading it, you were able to develop a bare bones intellectual framework for understanding the main topics. When you now go back and read selectively instead of skimming, you will discover that the

topics, issues, and positions are more complicated than they appeared when you skimmed through them, but it's much easier to make a simple structure more complicated than to try to construct a complicated structure all at once from the full set of details. Like many other parts of the senior project research process, understanding, organizing, and evaluating the topics, issues, and positions don't scale up well. Trying to absorb that information all at once works on a smaller scale, but not on a project of this magnitude. There are too many topics, issues, and positions to keep in your head all at once, much less sort them out, evaluate them, and organize all those details into an argument that draws on several different disciplines.

Reading for the chapter. After doing more skimming than reading for your annotated bibliography and literature review, you now get a chance to dig into the books that pertain to this chapter and then pursue those ideas further into journal articles. Even now, however, you should not be reading books cover-to-cover. Be strategic in choosing what and how much to read. Remind yourself before you open a book why you are reading it and what you expect it to contribute to your chapter. Then find the sections of the book that contain what you need and read only those sections. Keep in mind what you are looking for as you read. In short, read for your purposes not the author's purposes. Authors want you to see the section you read as embedded in their overall argument, but you should see it as embedded in your argument. Remember that you do not have time in two semesters, not even in two five-credit courses, to read completely the 45 books in your original annotated bibliography, much less the hundred or more books and journal articles you will probably end up using in your project.

Journal articles give you the cutting edge of the professional debates revealed in books. They are much more focused, however, concentrating on individual mini-debates. They deal with a specific aspect of an issue, not the whole issue (even as perceived narrowly by that discipline), with a sub-topic not the whole topic. The analysis is less synoptic and comprehensive, more fine-grained and focused. Journal articles give you greater detail, they fill in gaps, and they bring the arguments up to date. If you were to start with journal articles instead of books, you would get lost in an intellectual thicket; but once you have used books to survey the intellectual landscape you can appreciate the nuance, detail, and depth that the journal literature provides. The journal literature is useful for most projects only after you learn through books what the larger conversations are about and you figured out through the literature review how to situate your project relative to those conversations. The exceptions are projects on topics so recent—dealing with breakthroughs in computing, for example—that there has not been time for books to be written on those topics, or projects on topics such as the Web where many authors prefer another medium to books.

It is easy to be captured by the materials from which you draw. If you are drawing from a number of sources that all treat your topic the same way or put it in a certain light, it's easy to be swept up by group think and unconsciously assume that you have to write about it that way too. Again, you need to remind yourself that you are writing for a different purpose than any one else who has written on your topic. Ask yourself what treatment of your topic makes sense for an interdisciplinary approach—make problematic the way the rest of literature treats your topic, instead of accepting their way uncritically.

It becomes harder and harder to find something new as you examine more and more books on a topic. After a while, you don't need to read a book to know what's in it;

in fact, the challenge is to leaf through and find something that isn't a warmed over, rehashed, slightly differently worded version of the same old, same old. That should not make you worried, however, about being able to come up with something new yourself, because you're not stuck in the same rut they are—looking at the topic from the same well-worn perspective. You're taking a different approach, probably a unique approach, by looking at the topic through several different lenses and integrating their insights. You can worry about your ability to integrate those insights, but if you succeed in doing it, you'll unquestionably come up with an original understanding of the topic.

Writing the chapter. It's not unusual to find yourself stuck in lit review mode when you need to switch to writing mode. You need to consciously shift mental gears from what other people are talking about to deciding what *you* want to say. One strategy for changing your focus is to make a more detailed outline of the chapter by adding one more layer, namely the topics of the paragraphs in each section. Before that, it's useful to talk with your advisor about what readers need to know in order to take in the information you want to cover in this chapter. What all is required to bring them up to speed on the topics, issues, or perspectives to be addressed in the chapter? Another strategy is to step back and remind yourself why you selected the topic for your project to begin with. One senior in this situation actually wrote the preface first.

The point of your project may not become apparent to you until well into second semester after you've written several chapters, yet many people have problem writing the first chapter until they know why they're writing it. How do you write without a thesis to guide you? One strategy is to sketch out a preliminary introduction, knowing that you'll have to rewrite it completely after you have finished the rest of the rough draft. That's OK if you think of it as a tool like a literature review that you construct to help you in writing the project, not as part of the project itself. Another strategy is to construct a more detailed outline for the chapter. A third strategy is to work backwards from the uses you will want to make of this chapter in writing your other chapters. Ask yourself what you need to cover on individual topics or issues in order to set up their application to other chapters.

Be careful not to fall into the trap of writing a series of glorified book reports. Instead of saying what the author said, you need to rework it in a way that shows how what the author says applies to your framework. In other words, you should turn what individual authors say into facets of your argument instead of regurgitating their argument. You should still keep an open mind when the author points out things you hadn't thought about (especially ideas that challenge your thinking, add an unexpected dimension, or raise inconvenient questions about your project)—you should let serendipity come in—but the primary thrust of your reading should be to further your own research agenda. In short, you need to balance out efficiency and receptivity. Try writing with your outline in front of you to help you keep track of where the book fits into your argument. (As soon as one student created a file for a new chapter, he copied his outline for that chapter into the file and filled it in as he wrote, literally writing sections of the chapter into the appropriate spots in the outline.) It may be helpful to look at your lit review to see how you thought the book would fit in your topic, though as you research further your lit review may become increasingly obsolete. You might try posting a statement of the focus of the chapter on the wall in back of your computer, so you can glance up whenever you lose track of what you're up to. A concept map may also help.

A common difficulty in writing the first chapter is to figure out the appropriate level of detail to include in your project. Since your project needs to be accessible to the liberally educated reader, one test is to try the chapter out on classmates not in your field to see whether it provides sufficient background information so they can follow fully what you are saying but not so much detail that they get lost. Since you don't know for sure until you have completed the rough draft what information is relevant, there's some point in erring on the side of inclusiveness, especially in your first chapter. Even so, you should include only material that arguably has bearing on what you now think your argument might be: don't include material just because other authors do, but instead be strategic in your choices.

A related concern is the appropriate level of research for your project. A handy rule of thumb frequently used by senior project advisors is that you should have at least three sources for any one sub-section of your project. If several pages go by and only one source is cited, the research basis is too thin to be credible or you have not adequately cited your sources. (Even if three sources give pretty much the same information, be sure to separately cite all three.) The related question of how often you should cite sources likewise has a rule of thumb. If you are listing a bunch of separate facts, then plan to cite the source(s) at least once a paragraph; you can use a single citation at the end of the paragraph if it all comes out of a single source. If several paragraphs are clearly devoted to an elaboration of one position on a single issue, on the other hand, then one citation for those paragraphs will usually suffice. If, as should only be the case in exceptional circumstances, an entire sub-section of your project is based on a single source, identify the source in the text at the outset of the sub-section and provide a rationale for such heavy reliance on a single source. If that happens more than once in the entire project, something is wrong.

When you find yourself confronted with a range of positions on an issue that's relevant to your topic and you don't know yet what your position will be on that issue, don't worry about it. When you have completed your research, you will have a distinct position because you will be the only scholar looking at the issue from that unique combination of perspectives. When you start out writing your project, you are not in a position to decide which positions to emphasize, how to relate them, or which ones are expendable, so just get them down in words without worrying too much about how you organize them. During the month you have available for revising your complete rough draft you will be able to recast and reorganize the positions you merely listed earlier, since you will be able to see their precise significance for your argument (and you will finally know what your argument is). If you were to wait until you know what your argument is to decide which positions to include, then you would have to go back through all your resources and find the ones you need. You don't have time during that last month to re-research everything. It's better at that point in the research process to be weeding out than adding in, to be making connections instead of finding positions to be making connections between. So don't think of what you are writing now as the way the chapter will end up; think of it as containing stuff you need to include so you can rework it later.

Don't worry if your chapter doesn't seem to be particularly interdisciplinary. It doesn't need to be interdisciplinary all by itself; it's the project as a whole that needs to be interdisciplinary. Remember that one integrates by drawing on the insights of individual perspectives, so a chapter can be devoted to a single discipline. You should, of

course, indicate in the introduction and conclusion to the chapter how it connects to the rest of your project.

If you feel as though you are merely presenting the work of others in your chapter, that you're not putting yourself in your project, you need to remember that your choices about what to include and how to frame it are very much a reflection of you. In a postmodern world, you can hardly think of those decisions as completely objective. It may be that the significance of those decisions emerges only when you start to integrate that material with the stuff of other chapters, but you are in the chapter nonetheless. So it's not just through opinion, personal examples, and overt judgments or assessments of the work of others that you are included in your project, especially in an interdisciplinary project where much of the original contribution comes from your integration of insights drawn from the work of others.

Identifying Linkages Among Disciplines

As you come to recognize connections between disciplines, try to make them as precise and nuanced as possible. Avoid broad-brush assertions such as casually claiming that two disciplines are using different terms for the same thing. Even if the denotative meanings of terms from different disciplines were to be exactly the same (and they seldom are), their connotative meanings are necessarily quite different because they come out of different intellectual contexts. Think of the meanings of terms from different disciplines with Venn diagrams in mind; your challenge is to identify as precisely as possible the area of overlap but also the areas of non-overlap. The more precisely you draw the nature and extent of the connection between ideas from different disciplines, the more sophisticated the integration you can construct on the common ground formed from those connections. Since the unique contribution of an interdisciplinary approach lies in the integrated understanding it provides, this is a serious matter.

There are a couple strategies for establishing real world linkages, such as between the writings of John Muir and public policy regarding wilderness preservation. One is to ask whether his body of writing as a whole affected the general climate of opinion in the United States about wilderness areas and preservation. Because those linkages are indirect and tenuous, your argument based on them runs the risk of speculative. You cannot point to a link between his writings in general and a particular change in policy, at least not without reading transcripts of committee hearings, diaries or collected papers of those involved in the decisions about the policy, or editorials, op ed pieces, and letters to the editors in major newspapers. It's easier to establish a direct link between a specific article he wrote advocating a particular policy and the legislation establishing that policy, because you can compare the language and arguments of the legislation with Muir's language and arguments in his article to see if the legislation bears his intellectual or rhetorical stamp. Indirect impacts can be important because a bunch of them can add up to more than any one direct impact, but they require very different kinds of evidence and they are much more difficult to establish.

Thesis and Argument Presentations

Your thesis is your “take” on the overall problem or issue or question of the project. You probably started last semester with a topic area that you hopefully narrowed down to a problem, issue, or question that is now the focus of your project. You can have a thesis on a topic only if you problematize it—if you address an issue (i.e., a question with more than side) related to that topic. Lay out in your presentation not so much the topics you will cover but the line of argument that links them together. Reveal not what the argument flows through, but the argument itself. Point B follows Point A because... If you have trouble identifying your line of argument and you have an outline, especially if it’s a fairly detailed outline, ask yourself what the rationale is for that sequence of topics. What was the line of reasoning that led you to put them in those categories and place the categories in that sequence and not some other sequence?

State your thesis in every day language, removing all jargon. Otherwise, your understanding of the issue or problem will be unduly influenced by the discipline through which the jargon was developed. As you write individual chapters, feel free to show how that discipline or interdiscipline restates the issue or problem in more technical terms. But when you do so, you should be clear about how the generic problem or issue has been narrowed or focused in the process. If you cannot state it in jargon-free language or if you are doing no more than translating jargon into everyday language, then you should ask yourself if you really have an interdisciplinary project (or if your project is dominated by the discipline in which the jargon was developed).

Keep in mind that you should treat your thesis as a hypothesis and its supporting argument as preliminary. As you research for each chapter, it is terribly important to be open to information that challenges them. You need some sort of thesis to guide your research and you need a line of argument to determine what to include and what to exclude. But your emotional investment needs to be in understanding the problem in its full complexity, not in a particular solution to it—in understanding the issue not in a particular position on that issue. If your hypothesis is fully supported by the data, then you can feel vindicated, and it will be relatively easy to revise the complete rough draft because you won’t need to reconceptualize the project. But if you find evidence that challenges your hypothesis, you should feel excited: you are on your way to a novel way of thinking about the problem and the prospect of a genuine contribution to the literature.

As you attempt to construct an interdisciplinary argument about the phenomenon that is the focus of your project, you are likely to encounter a variety of disciplinary explanations of it. For a project examining the up-turn in the diagnosis of attention deficit/hyperactive disorder, you will find at least half a dozen candidates for the precipitating factor: drug companies wishing to sell a new drug, psychiatrists wishing to supplant clinical psychologists, educators seeking ways to control disruptive classroom behavior so they can respond to reduced funding by ‘doing more with less’, a change in the cultural construction of childhood, a change in the demands placed on children in an increasingly competitive society, or parents who feel they both need to work to meet their target lifestyle and thus who have less time to devote to children with problematic behavior. Your challenge as an interdisciplinarian is not to select one and reject the rest, but to array them in a way that makes sense. Do some logically precede others, so that one is an initiating cause while others are intervening or intermediary causes; i.e., is there a logical chain of causation? Do they operate on different levels, such that the same cause

is given different names on different levels? For example, a trend in families may have a counterpart trend in educational institutions and another counterpart that mirrors it in the culture as a whole. As you identify connections between points made by authors in different disciplines, ask yourself if those connections suggest a way of organizing those points that brings out the relationship between them. What you are working towards is what social scientists call a model, which identifies a number of variables and specifies something about the relationships between them. More generally, you are working towards a synthesis of the causes proposed by different disciplines, one that can form the basis for your more comprehensive interdisciplinary understanding (and ultimately for a policy based on that understanding).

The more you can spell out your line of argument in advance of writing the chapters, the more the final project will hang together. If you were simply to write separate chapters and then try to connect them afterwards, perhaps by inserting a paragraph at the beginning and end of each chapter, you would be likely to end up with a project that is rich in detail but less coherent than you would like. In that case, your readers will tend to get lost in the detail. You may get lost in the details as well in that when you write a chapter you don't have a clear sense of which details are necessary to your overall argument and which are expendable, so you tend to put in too much. Think of your thesis statement as a touchstone, that you can return to when you start reading another book and you need to remind yourself just why you are reading it. The more clearly, precisely, and concisely you can state your thesis, the better it can serve as a guide to your research.

As you listen to a thesis and argument presentation, ask yourself if you understand the thesis and if you see any holes in the argument. These presentations are the hardest to take in and make useful comments on because they require you to follow and evaluate an entire line of reasoning. If you let your mind wander for even a couple seconds you'll lose the thread of the argument, so you have to pay closer attention than usual.

Writing Subsequent Chapters

Each chapter should begin with a paragraph or more setting out what takes place in it. It is usually a good idea to indicate how that subject matter fits into the overall line of argument. At the end of the chapter, you should not only pull together what you accomplished in the chapter, but also provide some transition to the next chapter.

You need to do a lot of foreshadowing and referring back in an interdisciplinary project, anticipating connections to later chapters and creating connections to previous chapters. You can't present everything all at once, but you can alert the reader that material will be covered in a later chapter that has bearing on a particular point in this chapter, and you can spell out the bearing that material in this chapter has on a topic, issue, position, or argument in a previous chapter. When you haven't researched and written the chapter to which you need to refer, make your best guess about what will go into it and make connections accordingly. Do as much of this cross-referencing, interweaving, and inter-connecting as you can in the rough draft, though the majority of it will inevitably be done when you revise your entire rough draft because only when you know your overall argument will many of the connections become apparent.

A preface is optional though Western seniors typically want to include one, whereas an introduction is required. The preface is the place where you can explain how

you came to write your project, why the topic or problem is important to you, how the project fits into your life. It's a personal statement. The introduction, in contrast, is about the subject matter of the project—the topic, issues, positions, and perspectives—not about you. Its focus is intellectual and scholarly, not personal. The preface can be conversational in tone and should be written in the first person singular, while the introduction should have a formal tone.

It's appropriate anywhere in your project (including the introduction) to step back from your line of argument to interject an observation in the first person singular, especially to disclose a personal bias that the reader needs to know to make a fully informed evaluation of what you are saying. (If you do, be sure to make it clear that you have temporarily changed your rhetorical stance.) It's also appropriate to interject personal examples (also written in the first person singular), though you should be clear that the strengths of personal examples are empathy and immediacy; they provide little in the way of evidence in support of your argument. One could even make a case for using the first person singular throughout an interdisciplinary project in order to draw the reader into the interdisciplinary reasoning process and to highlight the constructivist nature of the interdisciplinary approach. One rhetorical strategy that distinguishes interdisciplinary writing is the use of meta-discussion, where you step back from what is being said to examine the process by which the topic has been studied or the terms in which it is normally presented within that perspective. In short, you will have to spend some time talking about the disciplines and how they function, about not only what it is they have to say but why they say it.

After you write a second chapter and you see its implications for the first chapter you wrote, should you go back and rewrite that chapter or should you wait until the entire rough draft is completed to revise? While it may appeal to your desire for neatness to rewrite as you go, it's less efficient than rewriting the entire project all at once. *Every* chapter will have implications when you've finished writing it for all the previously written chapters. Indeed, even if you've done some integration as you go, when you pull the project all together in the conclusion you are likely to realize for the first time exactly how the other chapters fit together and thus how they need to be rewritten. You can't rewrite any one chapter for sure until you understand exactly how it relates to all the other chapters and what it contributes to the whole, and you won't know either one until you've completed the rough draft. Then you may realize that a section may need to be switched to another chapter, that material you thought you wouldn't use must be added, or material that seemed central now becomes more peripheral and needs to be shifted to a less prominent location within the chapter or removed altogether. The one exception is cleaning up the mechanics of spelling, punctuation, and grammar. When you get feedback on mechanics that applies to earlier chapters as well, it's a good idea to make that correction in all the chapters you've written, simply because you're more likely to develop the habit of doing it correctly if you practice it a bunch of times.

What do you do when you're studying a public policy problem in a less developed country (e.g., public health; economic, social, or political development; land use or environmental policies) and the relevant theoretical literature and the best practice techniques all come out of former colonial powers? You don't want to be a neo-colonialist or engage in cultural hegemony by looking, for example, at an African problem through an American lens and arguing that Ghana should be more like the

United States, but the plain fact of the matter may be that the country you are studying and the other countries in the region are all doing a terrible job of dealing with this issue. The public institutions of the region are underdeveloped, in part because of the policies of the former power, in part because the indigenous culture is not state-based, and in part because of a host of problems such as disease, drought, corruption, war, and even genocide. So ethically, how should you proceed and how should you conceive of your activity? It helps to find a viable, functioning organization that is at least partly grounded in the local culture, an NGO perhaps, or an international agency with significant indigenous leadership. A post-modern approach that involves full disclosure and a personal disclaimer also helps. Most important is to state explicitly at the outset that you are trying to figure out the implications for this third world setting of a theory developed in a first world context, that you are aware of the danger of a resident of a first-world country trying to do this, and that your focus is on how to *adapt* the theory to fit the different cultural context.

Structuring Your Project

In an interdisciplinary project, you cannot start from a single, coherent, agreed-upon set of assumptions and proceed in a logical, linear fashion from premises to conclusion as you would in most disciplinary projects, because the starting points are themselves contested. There are different sets of assumptions and values held by each of the disciplines on which you draw. You bootleg in evaluative judgments (via primacy effect and recency effect) about the relative importance of the disciplines through the order in which you present them. If you are (as you should be) trying to make genuine use of the valid insights of each of the disciplines, not rejecting any of them, but trying to see what's of value in each and then pulling those insights together to create some sort of larger understanding that's responsive to each of them, then you do not want to be playing favorites.

In a sense, you need to talk about each discipline's contribution in the context of all the others. Because interdisciplinary study is about the relationships between parts and whole (text and context) as well as the interrelation of parts, readers aren't ready to appreciate the whole (or the context) until the parts (or the texts) are understood, but neither are they ready to appreciate the parts apart from the whole. So how do you break into the loop? You can't present parts and whole (or texts and context) simultaneously, so you're forced out of the linear presentation format that works so well in a disciplinary (or single-perspective) context. One starts to think instead about multiple passes through the material at increasing levels of sophistication (starting with a very general, impressionistic discussion of the contribution of each discipline, then in more depth each time), spiraling in through the disciplines from the general towards the specific, repeatedly bracketing the main line of argument to reach back for new parts or jump ahead to an emerging understanding of the whole, or a dialectical process of oscillation between different parts and the whole (as well as between one part and another part). That way you increasingly understand what each discipline has to say in the context of what the other disciplines have to say, gaining more depth or sophistication of understanding with each pass. A more conventional solution is to give an overview in the introduction and then compare the perspective in each disciplinary chapter to the perspectives discussed in earlier chapters, and connect its insights to those identified in

earlier chapters. Thus, if not fully integrating as one goes, one can at least lay the groundwork for future integration.

But how do you go back and forth between general and specific, theory and application, abstract and concrete, text and context without losing coherence? How do you avoid putting one perspective ahead of another, and thus privileging it (if in no other way via the primacy and recency effects)? You can end up deciding that some disciplines will contribute more to the project than others, but that should be only after they've all received a fair hearing. Presenting one after another without regard for the psychological effects of the order in which they are presented does not give them all a fair hearing. Unfortunately, the linear format of the physical senior project itself (in which pages are numbered and read sequentially, so that page 2 follows page 1 and readers normally start at the beginning and read towards the end) doesn't fit the logic of interdisciplinary exposition. One might be tempted to think about structures like choose-your-own-adventure or hypertext, but those are a cop out: they say, I won't impose priorities and values on these disciplines, but I'll let you do it; yet *no* one should be doing that. As pointed out earlier, it helps to set out in the introduction what structure you're using and how it relates to the interdisciplinary process. After all, the very fact that you're writing an interdisciplinary project means that you're not fulfilling conventional expectations of the reader (which are based on a single-perspective approach to a topic). Since you're rejecting that approach, it's incumbent upon you to explain what approach you are taking.

Moreover, unlike disciplinary papers where readers are already interested in the perspective, readers of interdisciplinary papers have to be sold on the utility, even the legitimacy, of the other contributing perspectives. Readers from contributing disciplines have rather focused interests, and you're asking them to become interested in what you say about some larger, more comprehensive issue. Their first response is likely to be, "Why should I care?" One way to do that is to draw readers into that larger issue by helping them visualize themselves in that situation in that time and place by letting them experience it vicariously through your experiences, which you can appropriate narrate in the first person singular, or the experiences of others. Every author has the challenge of drawing in readers, but interdisciplinary authors have a special challenge because of the way interests get structured in the academy. Techniques such as the use of personal examples that draw the reader into a perspective are a plus in disciplinary writing; they become essential in an interdisciplinary context. The interdisciplinary writer is presenting an unfamiliar way of thinking as well as a substantive argument, so techniques such as asking questions help to engage readers in the process instead of merely presenting the results of that process. Questions can draw the disciplinary reader not only emotionally into the issues related to the topic (into the process of thinking about the topic), but also intellectually into the interdisciplinary process. Questions at the end of a later chapter need not be different than those in earlier chapters, so much as further along the thinking process. Questions based on personal experience can also serve as a touchstone to which you keep returning in order to ground abstract or complicated ideas in the reality of lived experience.

When you read a work of non-fiction, the author has a thesis or position and the entire book lays out a line of argument or case in support of that position. But that author did not start out the research process with that line of argument all worked out. The intellectual route the author took was probably quite circuitous. But when authors

structure books, they don't ask you to follow the route they took. Instead they construct post hoc (after the fact) the shortest, most logical sequence of steps they can to arrive at the conclusion. Readers are spared the dead ends, red herrings, and tangents. The structure of your argument will be more complex, so it is even more important that you avoid taking readers through the route to interdisciplinary understanding you followed and provide them instead with the clearest route to that understanding you can devise.

Revising the Complete Draft

During the period between submitting your first complete draft and handing in your final bound project, you have three major tasks: completeness and integration, transitions, and the bookend pages. Allow upwards to a week at the end of this period to produce the pages that precede and follow the body of the project, the bookends if you will. Allow upwards to half a week to improve the flow of ideas throughout the project, and then to insert transitions between chapters, and between sections within each chapter. The rest of the time is available for the substantive research and writing required to achieve as much completeness and integration as possible.

The very first thing you should do after handing in your complete draft is to distance yourself from your project—even from thinking about it—as much as possible for half a week to a week. When you return to it, look over any feedback from your advisors or the workshop director, and then read through your entire project from beginning to end. You should be able to see it with fresh eyes, instead of seeing what you *meant* to write or what you were thinking about as you wrote. As you read through your project, look for completeness and integration.

Completeness needs to be viewed a variety of different ways, so you should have the following check list in front of you as you read:

- Compare the length of chapters, and of sections within each chapter, as well as the flow of your argument. Are there major *substantive* holes in a chapter (that require a new section) or in the project as a whole (that require a new chapter)?
- Look at the diversity of positions presented on issues addressed in individual chapters and in the project as a whole. Are any major relevant *perspectives* missing from a chapter or from the overall project?
- Check Works Cited/References/Bibliography/footnotes at the end of each chapter. Did you use make use of enough *sources* in that chapter or was it under-researched, or did you merely neglect to identify enough of the sources that you used?
- For each step in your overall argument and in each section and subsection, check to make sure you have sufficient
 - a. *development* of the idea or point,
 - b. *examples*,
 - c. *quotations*, and
 - d. *citations*.

(Substantial variation in numbers in any of the above should raise a red flag, but it is not the test; you're after equity, not equality.)

Integration is the acid test of interdisciplinary scholarship, the culmination of the interdisciplinary process, so make sure you (and your readers) get sufficient payoff for the extra effort that was required. While it's rewarding to arrive at a new understanding of your topic in the conclusion of your project, it's not enough to merely state it. To the

extent possible, you should *develop* that understanding, probe its *implications* (both for theory and for action), and *apply* it. When you reach the limits of what you can do yourself in this project, feel free to speculate on possible additional implications or identify potential applications. See if you can come up with recommendations for further development, implications, and applications, including suggestions of principles or procedures to follow and caveats regarding what to avoid in carrying out that additional work.

After doing as much as time permits to improve the completeness and integration of your project, the next task is to *insert, revise, or expand transitions*. Check the flow of ideas throughout the project, adding transitions between paragraphs as needed. Since you wrote chapters separately and without full knowledge of the whole project of which they would become parts, pay particular attention to the beginning and end of each chapter. Are readers sufficiently apprised at the beginning of what is covered in the chapter? Have you explained, either at the beginning or end of each chapter, how it fits into the project as a whole? And have you provided transition at the end of each chapter, or foreshadowing within the chapter, so that readers can anticipate where you are headed in the next chapter? Then turn your attention to the sections of each chapter, making sure that there is sufficient transition, explicit or implicit, from one section to the next; as with chapters, readers should start each new section with some sense of why it's there and how it relates to the section they just finished.

If you discover that some of your paragraphs are too long (let's say, more than two-thirds of a page long), then you need to make a conscious effort to balance length and coherence in breaking them into paragraphs of more appropriate length. Find a place to break up a too-long paragraph that gives both shorter paragraphs a different substantive focus while leaving them roughly comparable in length.

The last task before handing in your project to be duplicated and bound is to *prepare the pages that precede and follow the body of the project* (see the next section of the Research Manual entitled "Outside the Body of the Project"). As you prepare those pages, remember that potential readers will form a first impression of the body of your project from the pages that precede it, much as you form first impressions of people you meet from the clothes they wear. It is pointless to sink months into producing a high quality project, only to turn away readers because of a sloppy abstract, for example. Your challenge is to persuade prospective readers, especially professionals for whom you were writing, to devote their scarce time to reading a lengthy undergraduate project. If the cover doesn't catch their eye, if the title doesn't draw them in, if the abstract and then the table of contents do not appear to reflect thorough scholarship and careful attention to detail, or if the preface is amateurish, then they will never find out how good the body of your project is because they will never read it. Dress your project as carefully as you would dress for a professional job interview. Before you turn it in to be duplicated and bound, carefully scrutinize its appearance one last time, much as you would check yourself in the mirror before walking into the interview.

Outside the Body of the Project

The Cover. When you turn your attention from the body of your project to the pages that surround it, you need to shift mental gears. You leave behind the challenge of making your argument credible to confront the challenge getting it read. You leave the

world of scholarship and enter the world of marketing. Even the most compelling argument will not convince people who never encounter it. The marketplace of ideas is full of books, journals, magazines, newspapers, and of course senior projects, all clamoring for attention; and that's just the print media. There are more print publications on any topic than there is time for people interested in the topic to read them. Worse, many seniors in interdisciplinary studies are promoting new topics, so they have the added challenge of persuading potential readers to become interested in the topic and well as in what they have to say about it.

The cover of your project needs to draw the eyes of prospective readers. If your project has a black binding with no color, image, or text, even readers who are looking for it in the Western senior project archives may have to open dozens of such projects to find yours. The odds are that readers who are just browsing will never open it. More than anything else, a cover with color—especially multiple colors—attracts attention. Second, a cover with an image draws the prospective reader closer. Then, if you have the title and your name on the cover where prospective readers can take them in at a glance, they may pick up the project and open it if their curiosity or interest is piqued. Many seniors select a clear plastic cover over cover stock that has a multi-colored picture, drawing, or photograph, with the title in large print so it can be read from a ways away, and their name in smaller font (since most prospective readers will be attracted more by your topic than the author).

Title Page. The title page is the very first page inside the cover, and its format is rather rigidly specified. See sample on the next page for wording and spacing.

The title and any sub-title, on the other hand, are not only up to you, but they demand creative thought. Once you have attracted the attention of prospective readers with the cover, you need a title (perhaps in combination with a sub-title) that (a) is short enough to be taken in at a glance, (b) clearly identifies the subject, (c) gives some indication of your approach to it, and ideally (d) is catchy but not cutesy. You may try and reject twenty titles before you find one that represents the best balance of those criteria. Splitting it into a title and sub-title has a number of advantages, so a majority of seniors opt for that strategy: (a) One can provide straightforward description while the other is a bit clever. (b) One can focus on the subject, the other on your approach to it. (a) The title can be short enough to be taken in at a glance, while the sub-title can be a bit longer.

THE RUCK SACK REVOLUTION: [Title at top margin.]

BUDDHISM AND THE BEAT GENERATION

Submitted to the [Eighth space from title]

School of Interdisciplinary Studies

(Western College Program)

in partial fulfillment of

the requirements for the degree of

Bachelor of Philosophy

Interdisciplinary Studies

by [Fourth space from departmental line]

Nathaniel Gay

Miami University

Oxford, Ohio

2005

APPROVED

Advisor _____
Sean Duncan

Abstract. The abstract is the next page after the title page. Abstracts are single-spaced and should not be longer than a page; half a page is preferable. The point of the abstract is to offer a concise account of the project so readers can decide whether they want to read the complete project. Too often, the abstract is written at the last minute and in haste. Remember that it is a potential reader's first look at the substance of the project. A sloppily written abstract suggests a sloppily researched and written project, so you are likely to lose readers if you do not proof read the abstract with care. Here's a sample:

ABSTRACT

This project evaluates justice within the United States judicial system by exploring the definition of "crime" and the impact of this understanding on the way laws are formed, and then by discussing the most just response of a society to people who break these laws. An evaluation of the history of the United States penal system reveals that, though the response to criminal behavior in the United States has consistently revolved around punishment, the ways in which this punishment is inflicted have corresponded with economic and structural changes in society. The current popular use of incarceration as a means to punish offenders is unjust in that it does not create the maximum social utility that justice demands. The exploration of alternative methods of justice, such as restorative and rehabilitative justice, leads to a more specific discussion of the drug court in Franklin County, Ohio – the Treatment is Essential for Success (TIES) Program. The results of a preliminary case study conducted on the TIES Program suggest that success within the program, as defined by graduation, is strongly tied to the previous educational experience of the participants as well as to their use patterns in crucial phases of the program. Additional data suggest that future research will be able to predict more accurately which offenders are likely to succeed within the program and evaluate the efficacy of the program in reducing recidivism. By working at the root of criminality for these specific offenders in addressing addiction rather than punishing the results, drug courts such as the TIES Program result in greater justice and social utility for participants and for society as a whole.

Acknowledgements. You are not required to include an acknowledgements page, but if you do it is the next page after the abstract. Remember that this page will be read not only by friends and family but (hopefully) by professionals in your field: your private comments to friends and family are on public display.

Preface. Similarly, you are not required to include a preface, but if you do it goes after acknowledgements (or after the abstract if there are no acknowledgements). The focus of a preface is on you, not your topic. Feel free to reveal how you came to your topic, the experience of writing the project, or how it fits into your career or personal plans. But, as with acknowledgements, remember that professional readers and not just friends and family see what you reveal about yourself, and their impression of the seriousness of your scholarship can be shaped by what you say here.

Table of Contents. This goes immediately after any preface, and should be confined to one page. Think of the table of contents, not just as a list of chapters and corresponding page numbers, but as an indication of how you have broken up the topic and organized your approach to it. For a savvy potential reader, it is the final test of

whether the project is worth reading. If you have broken up your chapters into sections, you should consider including them in the table of contents. Here's a sample:

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List of Illustrations, Tables, Figures, Charts. Tables, figures, and the like that you discuss explicitly go in the body of the project; otherwise they belong in the appendix. The proper format for the first table in chapter four is as follows:

Table 4.1 Drug Courts and Traditional Court Processing Transaction Costs

<u>Transaction</u>	<u>Cost per Drug Court Participant (n = 594)</u>	<u>Cost per Traditional Court Participant (n=573)</u>	<u>Cost Difference: Drug Court Savings</u>
Arrest	\$193	\$193	\$0
Booking	\$284	\$284	\$0
Court time	\$682	\$679	-\$3
Treatment	\$2,644	\$2,009	-\$635
Jail time	\$1,611	\$2,783	\$1,172
Probation time	\$514	\$1,422	\$908
Total Cost	\$5,928	\$7,370	\$1,442

(Source: Carey and Finigan, 2004, p. 329)

For you have, let's say, half a dozen or more tables in the body of the project, you should include a page with a list of tables after the table of contents and before the introduction.

Bibliography, References, Works Cited. Bibliography and references are more expansive than works cited, they can include works you examined in your research that you wish to bring to the attention of readers, not merely works to which you make explicit reference in the body of the project. You may choose whichever you prefer. Unlike any end notes, that may be placed at the end of each chapter or at the end of the body of the project, your bibliography, references, or works cited goes only at the end of the body of the project. Normally it is not annotated, though if you see your project as opening up a new field, annotations might be helpful.

Glossary. You need a glossary (after the conclusion and before the bibliography and appendix) if you make a lot of use of technical terms or jargon. If the definition of a technical term is generally accepted in the field but not widely known outside it, then include it in the glossary; but if it's controversial, then discuss it in the text. As a rule of thumb, if the glossary would be less than half a page, don't include it; if it would be a full page or longer, you really need it.

Make a distinction between definitions of technical terms and extended discussions of broad concepts or ideas, and don't claim to "define" when what you really do is describe a situation, identify a theory, or, in general, explore the discussion around different aspects of a multi-dimensional concept. You don't define "Buddhism," "natural," or "community"; you devote a sub-section or even a whole section to the different ideas around them, where they come from, their different cultural contexts, and how they interrelate. You may come up with your own position on those issues and state how you will use it in your project, but you've explored a concept and taken a position on it more than defined it. You've laid out an intellectual context. Definitions of technical

terms can normally be limited to one sentence and defined in the text immediately after you use them the first time, even if you include them in a glossary as well.

Appendix, Appendices. If you include an appendix (or several appendices), it should be on the last pages before the back cover. An appendix might include original data you collected, transcripts of interviews you conducted, email correspondence with an expert in the field, short hard-to-find documents (e.g., found in unpublished archives or out-of-print books), photographs you took of your subject, etc. If you make explicit use of this material in the body of the project, then you should include it as a table, figure, or illustration in the body of the project (as close as possible to immediately after your first mention of it in the text). If it is too long (i.e., it would disrupt the flow of the chapter), then consider putting the full document in the appendix and an excerpt, figure, diagram, etc. based on it in the chapter.

Mechanics

Common Punctuation Errors. When in doubt, do not use a comma; you need a reason to use a comma. For example, do not use a comma before a phrase; e.g., no comma before “and” in “The job exposed me to the inner workings of running a business and providing customer service.”

Don’t use a comma before the second half of a compound sentence; e.g., no comma before “and” in “We are all consumers and have all had customer service experience.”

Use a comma to separate short complete sentences connected by a conjunction; e.g., “We are all consumers of goods, and we have all had service experience.”

Use a semi-colon to separate two complete sentences that are longer or when the connection between them is anything other than a conjunction; e.g., “We are all consumers in this world; however, some of us have had more shopping experience than others.”

Use commas to set off a phrase that interrupts the flow of the sentence; e.g., “Community members are more than registered users because, instead of just contributing information, they also interact with other users.”

No need for an apostrophe in dates; e.g., 1960s not 1960’s.

Periods and commas go inside the quotation marks, while colons and semi-colons go outside the quotation marks. In-text citations are part of the sentence but usually not part of the quotation, so they go inside the period but outside the quotation marks, as in “The readings based on Foucault are sensitive to the political impacts of Buddhism” (Greene 2005).

Quotes within quotes go in single quotation marks; e.g., Horrocks suggests that “all writers are engaged in ‘sub-creation’ to the extent that...”

E.g., i.e., et al., and etc. are all (with the exception of “et” in “et al.”) abbreviations of Latin words so they need periods: “e.g.” indicates that an example follows; “i.e.” indicates that a clarification or explanation follows; and “et al.” indicates that there was more than one co-author; and you know what “etc.” indicates.

It’s is an abbreviation for “it is”; its is possessive; and there is no such thing as its’

The apostrophe goes after the “s” in the plural form of a noun; e.g., “peasants’ revolt.” When a name ends in “s,” the possessive adds “’s”; e.g., “Chris’s.”

When used as a single adjective modifying the noun that follows, hyphenate words like “problem-based” and “well-recognized” since “based” and “well” are not stand-alone modifiers. When they come after the noun being modified, they need not be hyphenated. Thus “His problem-based approach to education is well recognized.”

Common Wording Errors. Refer to your project as a “project,” not a “thesis” or “paper.”

Refer to your project and its chapters in the present tense; e.g., “The next chapter lays out...” not “The next chapter will lay out...” [since the project is already written by the time the reader encounters it]

Refer to yourself as “I” not “we” unless you have a co-author.

A writer or speaker can “imply”; a reader or listener can “infer.”

The “tenets” of Christianity, not the “tenants” of Christianity [since the reference is to beliefs not renters]

“Data” is a plural noun, so “These data indicate”; the singular is “datum.”

“Media” is a plural noun, so “Media affect”; the singular is “medium.”

“Government” is a noun and “governmental” is the corresponding adjective, so refer to “governmental agencies” not “government agencies.”

“Number” of supporters (since you can count them), but “amount” of support (which you can’t count).

As a noun, “effect” is a result and “affect” is emotion; as a verb, “effect” is to cause or bring about and “affect” is merely to influence.

Use “very” once in a project at most, since its overuse has so diluted its effectiveness as a generalized intensifier that it actually weakens instead of intensifies. If you wish to stress a point, find a specific intensifier that fits that situation: “The President was even more inarticulate than usual” instead of “The President was very inarticulate.”

If others are following you right now, you “lead”; if they are no longer following you, you “led.”

The “principal” means is the primary one; “principle” is a noun and it refers to a moral standard.

“Apart from” but “a part of”

“Cannot” not “can not”

Be consistent in capitalizing titles in your bibliography. Sub-titles, however, can be all capitalized, all lower case, or only the first word capitalized; e.g., *Central American Political Culture: Studies in emerging democracies*.

In written English where one cannot point, “this” is a pronoun that must modify an identifiable noun; it cannot modify a phrase, a sentence, or a paragraph. When “This” starts a sentence, it must be followed immediately by the noun it modifies (e.g., This project); otherwise it refers to the last noun in the preceding sentence.

“Complimentary” refers to saying something nice about someone; “complementary” refers to something that goes well with something else.

Use “between” when you are comparing two things and “among” when you are comparing three or more.

An author “cites” a source, whereas “sites” are locations.

Labeling something as “interesting” is not terribly informative, so provide some indication of what *makes* it interesting.

Common Writing Errors. Quotes need interpretation and application to your argument, since they have been taken out of another context. Never string quotes together without intervening interpretation and integration. Normally, long quotes should be broken up so that you can integrate the points one-by-one into your argument. Unless the long quote has unusual coherence, if you try to integrate it into your argument you will end up either repeating individual points anyway or the integration will be crude because it's too imprecise.

Paragraphs group clusters of ideas together, clarifying the steps in your line of reasoning. A paragraph of over half a page is a long paragraph. If a paragraph is over a page long is definitely too long: it suggests a lack of clarity in those steps.

The first time you use an abbreviation, write out the word and put the abbreviation in parentheses after it; e.g., “the Environmental Protection Agency (EPA).” If it's been a couple chapters since you used an abbreviation that's unfamiliar to most readers, it's a nice gesture to write it out again.

Keep verb tenses consistent. (The best way is to go back and check tenses after completing a chapter.) For past action that continues into the present, or for timeless action (a statement about gravity or Buddhism), use the present tense.

You should use language that does not inadvertently exclude categories of people who should be included (i.e., non-sexist language), but nouns and their pronouns must still agree in number. Using “his or her” is awkward, so it's usually preferably to make the noun plural instead; e.g., “Researchers must understand the different methods available to them” not “The researcher must understand the different methods available to him or her” (and certainly not “Ask any musician and they will tell you”).

Write out the numbers “one” to “twenty” when they are in a verbal, not a numerical, context.

Write out the numbers of centuries; e.g., “twentieth century” not “20th century.”

For quotes four full lines or longer, you must use block quote format: single-space, indent, remove the surrounding quotation marks, and move the citation to after the period. For quotations less than three full lines long, you cannot use block quote format. In between, it's up to you. (Some style manuals, e.g. MLA, may direct you to double-space block quotes, but they are presuming that a production team will eventually assist you in putting your manuscript in final form (which includes single-spacing block quotes). Since you are a production team of one, you might as well put your project in final form as you go, so single-space block quotes to begin with.

Add another adjective only if the first adjective doesn't capture your full meaning. Don't add a second (or third) adjective that says pretty much the same thing; e.g., delete either “useful” or “critical” in “Sustainable development may yet prove useful and critical to the survival of Latin America.”

It makes a difference whether you place the adverb before or after the verb. “The mural movement was born simultaneously in cities across the country” refers to multiple births of a movement, whereas “The mural movement was simultaneously born in cities across the country” suggests that it was more than just “born” in those cities; the reader expects, for example, “and died” after “born.”

Use “few” (or “many”) when you can count them and “little” (or “much”) when you cannot; e.g., “few tigers” but “little effect.” Similarly, use “number” when you can

count them and “amount” when you cannot; e.g., a “small number of artists” but “an small amount of time.”

Try not to split up verbs; e.g., “began to work together intentionally” not “began to intentionally work together,” and “the tactic is being used increasingly by” not “the tactic is being increasingly used by.”

“Studies have shown that...” doesn’t cut it in a senior project. You need to identify and cite the studies.

Do not mix description and prescription. To make it clear whether you are wearing the hat of a scholar or an advocate, keep your pronouncements of what should happen separate from your reports of what does or has happened. Otherwise, readers may not be clear which role you are playing at any particular point in the project, and be unnecessarily suspicious of your assertions of fact. It may be a good idea to confine your advocacy to clearly labeled sections or even a separate (perhaps concluding) chapter.

Putting the Project in Final Form

For the final senior project, students should follow a standard format and produce an original copy, plus two photocopies of the print version of the final project as well as the electronic version. The original copy is for the student. One photocopy is for the project advisor, and the other for permanent housing in the Windate Writing Center.

Paper: Use white, unlined, 20 lb. bond paper. The same paper must be used throughout each copy. The copies should be permanently and sturdily bound using one of the methods available at Miami Audio-Visual Services, Oxford Copy Shop or Copy Nation. Do not use metal bindings. The cover should be of a heavier type of material or a suitable cover stock paper. (See The Cover above, under Outside the Body of the Project.)

Font and Style: Use plain or standard type, not script or italic. The font should be twelve point (or ten point if the font is particularly large), and the style should be easy to read. The text must be on only one side of the paper (the same is true for photocopying). Double-space all textual material. Long quotations should be indented on the left margin, five to eight spaces at each margin and single-spaced. Symbols and marks should be done with the computer word processor when possible. Otherwise, they can be made by hand with permanent black ink and a fine point pen.

Printing and Text Readability: Make sure you carefully spell-check and proofread your manuscript before submitting it in final form. Pen and ink corrections are not acceptable.

Only the highest letter quality or clean-copy laser printing is acceptable. Printers should be carefully cleaned and serviced before using for the final version. If you do not plan on printing the project on a laser printer, please show a sample page of the printer being used to the workshop coordinator for review and approval.

Margins: Margins must be as follows: Left: 1.5 inch Top: 1 inch Right: 1 inch Bottom: 1 inch note: margins and pagination cause the most errors and are most difficult to correct. Be sure you understand the requirements and print out sample pages well before the deadline.

Page Numbering: Every page is assigned a number. The preliminary pages are numbered in lower case Roman numerals (i, ii, iii, etc.) at the bottom of the page, center, 3/4 inch above the edge. There is no number shown on the title page, but it is counted as page i. Typed numbering actually starts at page ii. All pages of the body including plates

blueprints, appendices, and bibliography are numbered. The chapter title page can be numbered at the bottom of the page, or the number can be left off, but this page must be counted in the pagination. All other numbers must be placed in the upper right corner 1 inch from the right and 3/4 inch from the top. Since your project will need to be a single document, insert a section break at the start of the Introduction, which will allow you to change the page numbering for the body of the project.

Title Page: The title page must contain the title of the project, the statement of submission, the Division, the full name of the candidate, the name of the University granting the degree, the town and state in which the university is located, the year the degree is to be granted, and a blank line for signature of approval by the advisor (with the advisor's name printed below the line). (See sample title page below.)

Abstract: The project abstract must not be longer than one page, single-spaced. The title "ABSTRACT" should be in capitals, flush center with the top one inch margin. The abstract should be inserted immediately after the title page.

Body of Text: The text should be double spaced in twelve point font. Start each chapter at the top of a new page. Give it a chapter number and a title, which should be in a larger font; use the same font and style (e.g., bold or all caps). If you break up chapters into sections, or sections into sub-sections, be consistent in format and font; e.g., section headings might be centered in a fourteen point font and followed by a blank line, while sub-section headings might be left justified, underlined, in twelve point font, with no blank line following. Especially if your project is on a scientific topic, you might want to number sections (and sub-sections) as well; e.g., 4.2 The Role of Water Vapor, and 4.2.1 The Amount of Water Vapor in the Atmosphere.

Footnotes/Endnotes/Bibliographies: Citing sources can be done in any of three forms. Each note can be entered at the bottom of the page and called a footnote. Endnotes can be gathered at the end of chapter, or they can be gathered at the end of the last chapter. Each field has a preferred convention for citations and bibliographies. Consult your advisor for the best system to use in your field, though, in general, you should use the style adopted by the majority of your sources. Do not mix or invent styles of documentation. Electronic sources should be cited using email address or website URL. For details, see Citation Guides and Style Manuals at www.lib.muohio.edu/online/refs/.

Figures, Charts, Graphs, Tables, and Glossary: Each should follow as soon after its first mention in the text as is possible and still fit it completely on the page. They should fit into the general format of the paper. It is sometimes possible to have oversized charts, etc., reduced to fit on a standard-size page or, if this is impossible, they can be folded according to specifications in Turabian's style manual. An appendix or appendices are the appropriate place for figures, charts, graphs or tables not discussed explicitly in the text; they may also include a glossary defining technical terms from the fields on which you draw. (See Glossary above.)

Submitting Your Project On-line: Start by creating a single Adobe PDF file of your project. Go to <http://digital.lib.muohio.edu/theses/browse.html>, click on "Western Senior Projects Submission Form," and login using Miami UniqueID and Password. Fill out form, then follow instructions for browsing to and uploading your previously created PDF file. You should access the library site from an on-campus computer or set up your off-campus computer as a proxy server. King Library will offer a workshop shortly before projects are due on submitting projects on-line.