HARVARD UNIVERSITY EXTENSION SCHOOL
Master of Liberal Arts Program

A Guide to the ALM Thesis

Seventh Edition

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Preface

The master's thesis can be both a demanding and a novel undertaking for many students seeking a Master of Liberal Arts (ALM) degree in Harvard Extension. This Guide has been prepared to offer practical help and encouragement. Based on our extensive experience in counseling ALM candidates, it attempts to answer the questions they most frequently ask and to anticipate the problems they often face. We hope that it will enable you to avoid the most common pitfalls and make thesis writing the rewarding experience that it should be.

Although concerned primarily with the thesis, the Guide is intended to be useful in other ways as well, including for the preparation of term papers and seminar reports, which are often practice exercises for the thesis itself. We urge you to use it in many contexts as a multi-purpose tool.

Most of the relevant procedures for the ALM thesis are illustrated in the pages that follow, including the three basic methods for footnoting and bibliographic citation, the APA, Chicago Manual, and MLA styles, and the formats required for the research proposal and the final thesis. All ALM candidates are expected to be familiar with the contents of this Guide before undertaking the thesis project. In particular, they should read it carefully before consulting with the research advisor for their field.

We would like to acknowledge the previous contributions to this Guide of our former colleagues Prassede Calabi, James Wilkinson, Emily Cahan, Jay Hook, David Gewanter, J. Douglas Willen, Amanda R. Benson, L. Dodge Fernald, and Peter O'Malley, and the helpful suggestions of those ALM candidates, proseminar instructors, and other members of the ALM staff who alerted us to various obscurities in the prior editions. We are grateful to Chuck Houston and Bob Sweeney for their assistance with proofreading.

We wish you good luck in your research and writing.

James Morris
Donald Ostrowski
Dante Spetter
Sarah E. Powell, assistant editor
Sue Weaver Schopf, general editor

Chapter 1

Introduction and Administrative Procedures

The thesis, required of all candidates for the degree of Master of Liberal Arts (ALM) in Extension Studies, is the focal point of the master's program. This project, which provides an opportunity for original investigation *in the field of concentration*, demands a synthesis of the skills and knowledge acquired throughout the candidate's program of study. The completed work is the evidence that the research has been accomplished and communicated to others in a conventional format.

It is useful, therefore, to begin to think about the project well before commencing the preliminary research. Unsuitable areas of research can be eliminated; interesting questions can be defined; the relevant literature can be reviewed. With such advance preparation, the thesis will provide an even greater opportunity to achieve an integration of the work within the master's program. Candidates are encouraged to examine prior theses on reserve at Grossman Library (third floor, Sever Hall), which illustrate all of these procedures.

Facilities and Opportunities

The use of published materials in the University libraries, as well as electronic resources, is part of any successful research project, but many other resources amplify these holdings. Examples at Harvard include collections in the museums, archives, observatories, and specialized libraries such as those in the Fogg Museum and the Medical School. In addition, materials are available at town and city libraries and the specialized libraries in the Greater Boston area. Candidates for degrees in the biological and behavioral sciences, in particular, and in some social science fields are typically expected to prepare a thesis based on the collection of original empirical data employing either experimental or correlational design. This may take the form of laboratory research, experimental or quasi-experimental methods, field research, or survey methods. These theses are most often quantitative investigations, although a qualitative component may also be included. Such a project usually requires experience in research design and statistical methods derived from course work, background reading, or experience as a research assistant. The ALM program offers an opportunity to develop capabilities in using these academic tools. Most important for any ALM research, empirical or analytical, are the proseminars—HUMA E-100, BIOS E-200, and SSCI E-100a and b—required of all candidates for the ALM degree. In general, candidates are required to take the proseminar in the area of the proposed concentration. However, candidates should choose their proseminars carefully in order to learn the methods most appropriate to the intended thesis work ahead. In some cases, it may even be in the candidate's best interest to take a second proseminar if the thesis method differs dramatically from the method taught in the area proseminar. For example, psychology and biological sciences candidates interested in preparing a thesis that takes an historical approach to the study of science or history of psychology would greatly benefit from exposure to the material in the seminar emphasizing history and government. Similarly, candidates in linguistics or anthropology may need exposure to behavioral science methods prior to designing a thesis study.

No student should reject a research project based on the collection of original data, or on the use of special collections, simply because he or she has not had prior experience in using such materials. Research advisors are available to help candidates evaluate the feasibility of such projects and to suggest ways of making appropriate preparations. In this regard, the student is reminded to follow, when they are applicable, the published guidelines of the Committee on the Use of Human Subjects, prepared by the Faculty of Arts and Sciences and presented to the Institutional Review Board. Harvard Extension provides no funds or grants to students to offset the cost of their research projects. Furthermore, students are expected to make their own arrangements to secure needed laboratory space.

Role of the Research Advisor

There are currently four research advisors in the ALM program, all with experience in guiding students on the thesis. They advise ALM candidates on all aspects of the development of the thesis topic and on the preparation and presentation of the thesis proposal, which is a prerequisite to writing the thesis. Furthermore, they help to identify faculty whose research and teaching interests coincide with proposals on specific topics and who may be subsequently recruited to serve as thesis director.

In the humanities, Dean Sue Weaver Schopf, who can be reached at (617) 495-9942 or at sue_schopf@harvard.edu, is responsible for students in Celtic languages and literatures, classical civilizations, dramatic arts, English; foreign literature, language, and culture; linguistics, literature and creative writing, religion, and visual arts. In the biological sciences, Dr. James Morris, who can be reached at (617) 998-8549 or james_morris@harvard.edu, is responsible for the fields of biology; history of science, technology, and medicine; and legal studies. In the behavioral sciences, Dr. Dante Spetter, who can be reached at (617) 496-4967 or spetter@hudce.harvard.edu, is responsible for anthropology and archaeology, clinical psychology, and psychology. Similarly, in the social sciences, Dr. Donald Ostrowski, who can be reached at (617) 495-4547 or don@wjh.harvard.edu, is responsible for government, history, and international relations. Some interdiciplinary fields, such as Medieval and Middle Eastern Studies, may be guided by any of these advisors, depending upon the area of emphasis.

Each research advisor holds a general orientation meeting at the beginning of the term, fall and spring, to outline the administrative details and strategies appropriate to the ALM thesis. All ALM candidates who expect to undertake the thesis during the subsequent academic year are urged to attend the meeting appropriate to their field of concentration. In addition, the research advisors hold a monthly proposal-and-thesis-writers discussion group, open to all candidates who have completed six courses, at which both general questions about the proposal-and-thesis-writing processes and specialized ones concerning individual projects are addressed.

After the research advisor approves a student's thesis proposal, the research advisor will send to the candidate an approved-proposal form, which must be completed by the candidate and signed by the thesis director. The research advisor will arrange for consultation with a member of the Faculty of Arts and Sciences eligible to serve as the director. As soon as a faculty member accepts this role, he or she then becomes responsible for guiding the thesis. Students should be aware that, in *extremely rare instances,* the research advisor may not be able to find an eligible, available thesis director—despite the acceptability of the project. Factors such as sabbaticals, leaves of absence, changes in appointment, or too many concurrent responsibilities can sometimes affect a potential director's availability. In such cases, it may be necessary for the candidate to wait until a director becomes available or even to develop another research proposal on a different topic in order to obtain a thesis director.

Role of the Thesis Director

The thesis director must hold a teaching appointment in the Faculty of Arts and Sciences at Harvard at the rank of senior lecturer, assistant professor, associate professor, full professor, or professor emeritus/emerita; or an analogous appointment at the rank of full professor in another Harvard school, such as Law, Education, or Medicine. The thesis director may request modifications in the topic or other changes in the research problem or method; he or she may be especially helpful in redefining a question, providing focus, and obtaining certain resources. But the responsibilities for acquiring basic research techniques and identifying an initial research problem lie primarily with the student. A description of the specific duties of the thesis director is sent from the ALM office to all faculty serving in this role.

The faculty director meets in person with or consults by telephone or e-mail with the student at appropriate intervals during the thesis process to assist with problems as they arise and to ensure adequate progress. These

meetings or consultations may be most frequent at the early stages of the project, but the thesis director should not be expected to undertake remedial work.

Upon completion of the research and writing, the student submits a written thesis to the thesis director. Most thesis directors prefer to review this work in successive stages, chapter by chapter, while others prefer to wait until the entire manuscript has been completed. (*We strongly advise candidates to be proactive in requesting a chapter-by-chapter review of the work in progress, for this incremental review facilitates the process of revision.*) In either case, it is the thesis director's role to read the thesis, to request revisions as necessary, and, at the appropriate time, to grade the final version, submitting to the Extension School a letter grade and brief narrative evaluation of the project.

Administrative Procedures

The thesis is the most demanding phase of the ALM program and almost always takes longer than expected. Requiring close familiarity with the content and methods in a given discipline, it cannot be commenced until at least 24 ALM credits—the equivalent of six courses—have been earned.

Enrollment

There are three administrative stages in enrolling for this research course. First, the candidate consults with the appropriate research advisor, who assists the student in gaining familiarity with the relevant literature, formulating a suitable research problem, choosing an appropriate method of research, and identifying a prospective thesis director. These tasks prepare the candidate for writing the thesis proposal, which usually must be revised several times (the average is three drafts) before it is approved by the research advisor.

Second, after the thesis proposal has been approved, and an approved-proposal form completed, the candidate and research advisor make arrangements to contact a member of the Faculty of Arts and Sciences with a teaching appointment in the relevant field, eligible to supervise the project as thesis director. At this point, the prospective thesis director may request some modifications of the proposed research. Typically, unless the changes are significant, these may or may not be incorporated into a revised proposal, depending upon the wishes of the prospective thesis director.

Third, when the approved-proposal form has been completed by the candidate and signed by the thesis director, it is submitted to the ALM office for final approval by the Dean of Continuing Education. Afterwards, the candidate receives by mail notification of this approval and a request for tuition payment for this research course. If a student fails to pay for the thesis within two weeks, the research advisor will be notified and the approval may be rescinded.

These arrangements are made independently of the usual semester course registration period. Thus the thesis need not begin at the start of a term. But it must be completed no later than nine months after the final proposal has been approved and a thesis director has agreed to serve. The due date for the thesis is indicated in the letter of approval from the Dean of Continuing Education.

Those registered for the thesis are considered full-time students by the registrar, but all registered students must complete a downloadable thesis continuation form each term. This is especially essential for students on financial aid. (Click on "Forms" at the top of the Extension School website.)

For graduation in May, the *final draft* of the research proposal must be submitted at *the very latest* by September 1 and approved by October 1; the thesis itself must be completed by April 1, regardless of the candidate's individual due date.

Between the start of preliminary work leading to and the completion of the final thesis, the student should expect to devote *at least a year and a half*. Although the time allowed for the writing of the thesis itself is nine months, an equal amount of time generally must be spent on developing the proposal, obtaining the approval of the research advisor, and finding a thesis director.

Submission of the Thesis

In planning a date for May graduation, the student should expect to complete the thesis—including the revisions, final preparation of the manuscript, and binding of the finished copy—at least *six weeks prior to the date of graduation*. Degrees are also awarded in November and March. The major graduation activities take place in May. Candidates who earn the degree in November or March may participate in the following May ceremonies. Candidates who expect to graduate in November must submit the final copy of the thesis for format review to the research advisor and for grading to the thesis director no later than **September 15** and **an approved bound copy** of the thesis **by November 1**. Those who expect to graduate in March must submit the final copy of the thesis for format review to the research advisor and for grading to the thesis director no later than **January 15** and **an approved bound copy** of the thesis by **March 1**. For graduation in May the thesis must be submitted for final evaluation by the thesis director and format review by the research advisor by **April 1**. Evaluation and format review normally require at least two weeks. **An approved bound** copy must then be submitted to the research advisor no later than **May 15**. *No student will be allowed to graduate until after the bound copy has been approved by the research advisor.*

The thesis, which is a detailed written statement of the project, must include full citations, documentation, bibliography, and other scholarly devices as set forth in this Guide, and it must be prepared in a suitable writing style. This research and the text prepared by the student together constitute the master's thesis.

In general, 50 pages of text is the acceptable minimum length of a master's thesis. However, the length is determined in part by the nature of the topic. Ordinarily, a thesis in the humanities and some of the social sciences will consist of 60-80 pages of text, plus notes and bibliography. Occasionally, theses exceed 100 pages in length. Since research in the social and biological sciences may take many forms, the nature of the project and views of the thesis director are the best guides to the length of a thesis in these instances. Theses in the biological and behavioral sciences, particularly those using experimental methods, are often shorter, and prepared analogously to a journal article with greater detail in both the background and the research method sections than would typically be found in a published paper. Copies of completed ALM theses are available on reserve in Grossman Library. These should prove useful guides. Sample research proposals from each area are available on the ALM website.

The final draft, submitted no later than the due date on the Dean's letter of registration, is then evaluated by the thesis director, who forwards a letter grade and a narrative evaluation of the entire research process to the ALM program office. The final draft is also submitted to the research advisor for the format review. For this purpose, the research advisor checks the thesis against the specific requirements stated in this Guide and notes any discrepancies. After all of the requested changes have been incorporated and both approvals have been obtained, the final, master copy of the thesis is laser-printed, bound, and delivered to the ALM office. The research advisor inspects the bound copy one last time before the thesis is placed on the shelves of Grossman Library. Only after the thesis passes this final inspection will a candidate be allowed to graduate.

A thesis awarded a grade below B-minus by the thesis director cannot be accepted by the Extension School as fulfilling the ALM thesis requirement. The candidate will be permitted to enroll for the thesis only once more, preparing another or a modified proposal, submitting another tuition, and, in conjunction with the research advisor, obtaining a thesis director again, who may or may not have served on the earlier thesis.

A thesis awarded a grade of INC (incomplete) at the end of the allotted period also is unacceptable for the ALM requirement. In this case, the student may enroll again without preparing a new proposal, and the previous thesis director has the option of continuing to work with the student; however, if the director does not wish to continue, the student may be required to update or substantially modify the topic and submit a new proposal, and a new director may be recruited. In either case, another tuition must be submitted for this re-enrollment. Students are permanently retired from the ALM program after two unsuccessful attempts at completing the thesis.

Notification of Graduation

It is the responsibility of each candidate to monitor his or her own progress towards completion of the specific ALM degree requirements and to notify the ALM office of a realistic anticipated date of graduation. Students must be mindful of the fact that a desire to graduate by a certain date neither obviates the need to fulfill the various degree requirements nor imposes on the program any obligation to bend its policies so that the desired graduation deadline can be reached.

Graduation confirmation forms will be mailed to the student with the thesis-approval letter from the Dean of Continuing Education. The ALM program cannot be responsible for the appearance of the name on the graduate's diploma or for the graduation of any student who fails to complete this form by the proper time.

In summary, three dates must be met by all degree candidates hoping to graduate in May. These include: submission of the *final* approvable draft of a thesis proposal by September 1; completion and submission of the thesis to the thesis director for grading and a copy to the research advisor for format review, both by April 1; and submission of the bound thesis to the ALM office by May 15. Candidates who have not both **received a grade on the thesis** and **submitted an approved bound copy by May 15** cannot be included among the May graduates.

Library Privileges

The use of Harvard libraries is a privilege granted to those Extension School graduate students who have been admitted as candidates for the ALM degree. The School pays a costly subvention to the library for each card issued to a student. Therefore, these library privileges should not be abused or wasted. Upon admission to the program, students are granted an ID card for the duration of their candidacy. Students working on the three courses required for admission, and therefore not yet ALM candidates, must make other arrangements for library privileges, or choose courses and plan their programs of study accordingly.

Such students may purchase a special borrower's card for $100 per term during these periods; they should inquire about this possibility at the Privileges Desk in Widener Library. Students who have been admitted as degree candidates are also advised to consult with the Privileges Desk in each of the various libraries, some of which do not honor the ID card. Students are also reminded that Countway Library does not offer borrowing privileges. All students in Extension have access to the resources available in the Grossman Library, as well as a wide array of online journals and resources. If access is needed to materials not available in Grossman, the library staff can help determine the best method of acquiring the materials. Students who have been admitted as degree candidates should check access or privilege information for each library they need to use. This information is readily available online; if you need assistance, contact Grossman Library, at (617) 495-4163.

Chapter 2

The Research Process

Developing and carrying out a research project is quite unlike taking a course. For that reason, and because many ALM candidates have little previous research experience, this chapter presents a brief overview of the development of a thesis topic.

Thinking and writing about a problem are virtually inseparable. Hence, this chapter has some overlap with the first part of Chapter 3, which deals with preparing the research proposal. But the perspective here is broader and includes general considerations not mentioned in the following chapter.

Differences between Course Work and Research

Research is a process that can be learned and understood and in which almost anyone can achieve competence. Since most ALM candidates, by virtue of experience, perform capably in courses, being aware of the ways in which research differs from course work can markedly improve your success at (and enjoyment of) research.

The principal differences between course work and research involve logistics (definition of goals, ease of obtaining materials, ease of carrying out the work) and time use (gauging how long things will take). In a course the structure is provided by someone else. The course topic, the course syllabus, assignments, text(s), and other materials—all are developed for you at the start of the term. With them come a timetable and an implied work schedule. Read so many pages and do so much work each week, prepare for and take so many exams, write a paper—and success in the course is yours. Further, in fifteen weeks the course is over, whatever you have done.

By contrast, for the research and thesis part of your graduate studies, effectively you are producing all those things yourself. Or rather, you are producing them with the help of the required proseminar, this Guide, your research advisor, and your thesis director.

Research is not an altogether orderly process. False leads, insufficient evidence, contradictory findings, changes of goals, and other frustrations are inescapable parts of the process. They bear witness that the researcher has been engaged in significant thought and work.

Because of this lack of external structure, the absence of a syllabus or formal assignment, it is difficult to predict the amount of time needed to carry out a project. Thus, although **nine** months is the amount of time allotted for the actual carrying out of the thesis (research, analysis, and manuscript preparation), no specified amount of time has been set for the preparations leading up to that. You must begin the thesis planning, the overall research process, well before the actual nine-month thesis period—*at least six months before, and perhaps earlier*. During this period you will be doing preliminary research, finding and developing your research problem, doing bibliographic research, and reading the background materials necessary for writing a proposal. Students in certain fields, such as Middle Eastern studies, Celtic languages and literatures, and religion, may have to spend time acquiring or brushing up on a reading knowledge of Arabic, Old Irish, or Latin before they can progress.

The nature of this pre-thesis research and planning makes it difficult to schedule rigorously. It can involve other people (laboratory personnel, research librarians, interlibrary loan, computer searches, your research advisor), and does involve creativity. It is difficult to have insights upon command—not everyone can be like the composer Tchaikovsky, who said that he had managed to train his muse to show up every morning at nine o'clock. And, although you do want to make progress, you do not want to be rushed. Your goal should not be only to graduate at a certain time, but to complete a solid, thorough piece of research, to learn something about your subject (and also, trite as it may sound, about yourself—particularly your intellectual and organizational

abilities), and to enjoy the whole process. Indeed, if there is any part of your graduate career that should be seen as process rather than product, it is the thesis research process. This is a learning experience in the fullest sense and can be an exciting challenge rather than an insurmountable obstacle, if it is approached realistically.

Nine months is the amount of time considered appropriate for carrying out a typical ALM thesis for which the proposal has been carefully thought out, screened, revised, and approved by the research advisor and subsequently directed by the thesis director. You are responsible for your schedule during that period—again, with help from your research advisor and thesis director. But the work itself is up to you. Your best insurance for completing the thesis on time is to **have your project clearly thought through** beforehand in every possible respect, from sources available to methods of analysis, from a work schedule to producing the final draft.

Three other aspects differentiate research from course work. You may, depending on your project and thesis director, work much more on your own during the process of research. This can lead to self-doubts or dark and dreary times. Most research is done in isolation, but it need not be so throughout the process. If this should happen to you, talk to someone about your work—your thesis director, your research advisor, someone who sat next to you during a class. Attend the research advisors' monthly proposal-and-thesis-writers discussion group and plan to share your ideas with your advisor.

Related to the solitary nature of research is the lack of external structure, as could be derived from a course text. A major part of the research process is that you yourself create the text, syllabus, and argument. Thus since you will probably lack something to lean on (a textbook or its equivalent), you must all the more trust yourself. You must develop your own strategy and timetable for completing the work.

Third, research involves data collection of some sort. These data may be either textual, physical, or numerical evidence testing and supporting or refuting your hypothesis.

Creative and Critical Thinking: Asking Questions and Developing a Hypothesis

Thesis research requires independent thought on your part, rather than simple regurgitation or the "book report" style of work. As a result of that process, you will be able to make an original contribution to the subject, however limited in scope, by bringing new insight or a fresh perspective to your topic. But you must:

1. Identify a broad area of interest.

2. Immerse yourself in the existing literature on your subject, both to gain knowledge of the subject and to identify a more precise area of research that needs to be undertaken.

3. Formulate one or more research questions.

4. Formulate a specific, testable hypothesis.

5. Produce a statement of your research methods.

6. Test your hypothesis in a method or manner consistent with the standards in your field of concentration.

All of these steps require critical thinking, in the positive sense of carefully evaluating rather than accepting without questioning.

Chapter 3 considers how to choose among potential topics; here we are concerned with the *genesis* of potential topics. While this smacks of the impossible—say, of teaching someone to be creative—it is not. Any process performed by one person can be described and through description made available to another. And while it is obviously not the case that following a description will necessarily give the same results as for the original person, certainly being conscious of the steps involved will allow us at least to approximate that process. It may not be possible to teach creativity or talent, but it is possible to teach people to stimulate and express the creativity they already possess.

Questions

All good research starts with a question. How does one see or think of a question? How do questions occur? To answer this, we need first to examine more closely just what a "question" is. "A matter of discussion or debate," "subject to doubt," "problem," "matter to be inquired into"—these are the more common dictionary definitions of the word. Especially pertinent is the notion of *problem*, not with the pejorative connotation of something wrong, but in the sense of matter to be inquired into, containing a curiosity, discrepancy, or incongruity. The world is full of such problems and incongruities, but to see them requires an active, thoughtful, skeptical mindset, and a good deal of self-trust.

In general the problems have to do with unusual circumstances or matters in some way not typical, not expected, not fitting smoothly together: an Asian person wearing a Scottish kilt; a street person paying for a pretzel with a hundred-dollar bill; or, in a more academic context, block after block of houses torn down but no highway being built; the relatively large number of Cambodians living in Lowell; a play by a dramatist in a style that is quite different from all of his other works. A subset of such incongruity comprises questions of veracity or truth. These involve being skeptical or suspending belief about something, not automatically believing something just because it has been stated, whether in conversation, in print, or on television. For example, we may note that in today's speech the Secretary of State contradicted statements she made last week; or, the news item claimed that alcoholism has a genetic basis, but the *Scientific American* article emphasized that the data are ambiguous. Life experiences, such as parenting and pursuing a profession, can raise research-worthy questions just as valid as those raised in the classroom, the library, and the laboratory. Since it is our conviction that discovering questions suitable for thesis research requires little more than common sense and conscious awareness of the world, we will set aside questions of veracity and concentrate on perception of general incongruity. If we can allow ourselves to be conscious of the component parts of a situation, questions will necessarily follow.

As an extended example, let us consider the sample humanities proposal in the field of English presented in Appendix 1. Its author, Ms. Kelly, had been reading a group of well-known novels set against the background of World War I, for a class she was taking. All of the assigned writers were male and had been soldiers, and each of their works approached the war from a similar perspective—emphasizing many of the same issues. She began to wonder whether any *women* had written about the War in the same way.

This wondering or questioning led her to look further. She began to seek information about the genre of the World War I novel by looking up relevant works of literary criticism. Her initial investigation turned up a substantial body of pre-1980s scholarship on the subject, which suggested that this was a clearly defined genre—but defined almost exclusively by the work of male writers, some of whose works she had been reading. According to critics, most of these novels focus on the horror of war and on the sense of alienation, despair, and impotence that it engendered in the male protagonists of these works. Moreover, this genre is considered to be central to the development of Modernist literary expression. Interesting, but Ms. Kelly was no closer to answering her initial question: *did any women write fiction about World War I?*

She looked in a literary chronology of English and American authors who lived and wrote during the period of the War and its aftermath and found a number of women authors listed, some very well known, others less so. And she shifted the focus of her library search, reasoning that more attention had likely been paid to women

authors since 1980. She subsequently pieced together a bibliography of primary works by women writing at the time of World War I, and discovered that a significant number of them had taken the War as their theme. She then began to read a selection of these novels. An examination of more recent criticism confirmed that several scholars had in fact addressed the question of the female author's experience and representation of war, including many writers of major stature such as Virginia Woolf, Edith Wharton, and Willa Cather not traditionally thought of as "war novelists."

What Ms. Kelly did *not* find was an adequate explanation for why the works of these writers had been perpetually omitted from the accepted canon of World War I novels; nor any satisfactory theory about the differences between the war novels written by men and by women, even though by now it was very clear to her that women wrote about the war in ways that bore little resemblance to their male counterparts. Not only was she reading novels and literary criticism at this stage, she also began to broaden her research to include works of late-19th- and early-20th-century social history so that she could further understand the cultural, political, and economic background to the War. Almost everything she read suggested that at this critical period the social relations between men and women were undergoing stressful changes, as women lobbied for the vote and for greater freedom of choice in their lives. *How, if at all, did these issues relate to women's experience of and writing about the War?* There were many questions and incongruities to explore, and a trail of interesting evidence to piece together in quest of the answers.

The Context of Discovery and the Context of Justification

Many situations present such questions and incongruities, if only we would see them and not subsequently dismiss them. Note that in the case of Ms. Kelly, her discovery of an unusual situation was not based on extensive or detailed special knowledge. Nor did she dismiss her questions as stupid or simply the product of her own ignorance. Ms. Kelly's questions were the outcome of a simple act of reading. Indeed, we might easily have come to the same questions, just from having read the same novels. This statement is not meant to imply that we will not need considerable information to answer our questions or to test our hypothesis. But clearly it is not necessary to be an expert in some discipline to ask interesting, productive questions.

In the first step, as we have seen, we must trust our perceptions, especially of the incongruities, oddities, problems that give rise to questions. And we must have the courage to admit ignorance, to be able to separate our self-worth from what we know or don't know. Ms. Kelly allowed herself to wonder about the existence of war novels by women; she did not squelch her questions lest they make her look ignorant, uncultured, or illiterate, or because she somehow thought she should already know the answer. She also had the courage to question why so many discussions of the "canon" of war fiction failed to mention the works of women writers.

Beginning researchers may still assume that all their questions are foolish and simply betray ignorance. Certainly not all questions are equal: some will in fact not grow into satisfying research topics. They may be trivial or based on ignorance of or lack of familiarity with a discipline. However, a simple test will help differentiate between productive and non-productive questions. *Has someone else already answered the question satisfactorily?* Since many theses rely heavily and even exclusively on written materials to answer their questions, the issue is not whether we can construct an answer based on information from the literature. Rather, can we find "our" question stated and answered as such, in a text, journal, or dissertation? If so, it may not be appropriate as a research topic unless we disagree with an already-stated answer. Even if we can find several published sources that seem to address our question and posit answers to it, they may not necessarily be correct answers. We must be prepared to investigate their answers; and if we find them flawed in some way, our own research may become a refutation of these views and may substitute a new answer to the already-stated question.

Learning is rarely a straight-line phenomenon and is definitely process rather than product. Do not be impatient. A wonderful fringe benefit of testing questions for research suitability is that you get to do this exploratory reading and thus learn about assorted interesting things.

Even once you have decided upon a question or a hypothesis and it has passed the "suitability test," the question, like the hypothesis, may change and change again, as we think and read more about it. We answer some parts of it, reject others, and discover still others. Ms. Kelly's first question may have been a basic one: were there any women authors who wrote about the war? But having gained a "yes" to that question, it then *expanded* to include who they were; what they wrote; how women's war novels resembled and differed from each other, as well as how they resembled and differed from those of their male counterparts; how the social background of the age may have affected their diverse approaches to the subject of war; how the War came to be used as a symbolic backdrop for a different kind of war—the war between the sexes; what contribution to Modernist expression these novels made; and finally, why the works by women have been excluded from the canon of World War I writing. Few of these ancillary questions could have been foreseen by Ms. Kelly when she asked that first basic question. But her continued research eventually prompted them all.

The Hypothesis

What we have been considering is how to ask a question, have an idea, find a topic suitable for research. It is a little difficult to separate that process from the next step, development of a hypothesis, because the entire process—from first idea to project definition, data gathering and analysis, right up to (and actually after) the final punctuation mark on the final page of the thesis—is continuous. But let us restrict ourselves in this section to actual development and formulation of the hypothesis.

A hypothesis grows out of but is more than a simple question. It is an assertion, conjecture or premise, subject to verification via research. *It is the consequence of organizing our questions and other information and the expected answers that grow out of them.* Thus Ms. Kelly's questions about women war novelists in general were eventually organized into a much more focused, tri-partite hypothesis: (1) That the specific texts by Woolf, Wharton, and Cather to be considered are marked by a sense of female power as the writers self-consciously reconfigure the masculine war novel to reflect themes of concern to women: namely, the effect of war on the community and the family, the preservation of a demolished culture through art, and a critique of patriarchal values and antiquated notions of gender. (2) That these acts of self-assertion represent a uniquely feminine contribution to Modernist expression and, as such, deserve a place in the canon. (3) That their previous exclusion appears to stem from two critical biases: the assumption that only men, particularly those who have been soldiers, can depict the War; and that the themes emphasized by women writers trivialize the horror of War, by displacing it onto concerns of lesser importance.

What are the criteria for evaluating hypotheses? We can use three criteria: *correspondence, coherence, and conceptual elegance.* By correspondence we mean correspondence to the available, relevant source testimony; by coherence we mean a logical, well-focused, internally consistent hypothesis; and by conceptual elegance we mean the absolute minimum of abstract constructs and unstated assumptions within the hypothesis.

In several ways, formulation of the hypothesis and research protocol or methods is the most difficult part of the entire thesis process. Since it serves as the outline, flow chart, or general recipe for the whole project, it can scarcely be too thorough. This does not mean that it must be immense. Rather, it must be clear, precise, and succinct; it must be defensible on theoretical grounds and logistically feasible; and it must honestly consider its own shortcomings and limitations. That means *substantial research* must be completed before it will be possible to construct even an initial hypothesis. Chapter 3 will consider each of these points in some detail.

Now, during the formal collecting of data, as during the preliminary questions and development of the hypothesis, matters rarely proceed so smoothly as you might like. At any step, it is possible and actually likely that data or answers will differ from those we expected. Many things can happen during research. Perhaps we discover that someone else has already tested our hypothesis or answered our questions. Perhaps the hypothesis was based on a misunderstanding or an erroneous assumption, either our own or one commonly held by researchers in that discipline. Perhaps we discover something unexpected, which completely changes the research situation.

Alternative Hypotheses

Do not be dismayed if your hypothesis changes. Many apparent setbacks are not setbacks at all, but progress—perhaps not progress towards your initial hypothesis, or along the lines you had expected, but progress nonetheless, and towards a real answer. This unexpected turn of events itself raises new questions, potentially no less interesting than, and possibly necessary for, testing the hypothesis or answering the original questions. Again, the new situation itself requires active thought or inquiry on our part, rather than unquestioning acceptance followed by rejection of the whole topic.

For theses in both the biological and behavioral sciences and implicitly in some social science research, there is both a null and an alternative hypothesis. Such hypotheses allow a binary, or yes/no, approach to an answer. The researcher carefully gathers data or evidence relevant to the expectations and, based on accumulated evidence, decides to accept or reject the null hypothesis. In other words, you must always decide which hypothesis the data support.

A famous example of creative response to an unexpected research result in the sciences is Alexander Fleming's work with penicillin. During the 1920s, he was unsuccessful at culturing some micro-organisms under specific conditions. Rather than giving up, he wondered what it was about those conditions that prevented micro-organism growth and altered the direction of his research to find out—leading, ultimately, to the production of the antibiotic penicillin. He might be said to have followed the adage: "If you end up with lemons, make lemonade."

General Approaches to Academic Inquiry

For the following discussion, we will divide research into two basic types: *bibliographic work* and *empirical research*, either observational or experimental. This distinction is somewhat artificial, because we are limiting the former to background reading and collecting an overview of the chosen field. Certainly empirical bibliographic research can be carried out. Every ALM thesis will include at least the first; virtually all will include some aspects of the second. We will discuss each in turn and some logistical matters as well.

Bibliographic Research

Such work is here considered to be the background preparation for formulation and testing of a hypothesis, involving printed matter, whether consisting of primary or other sources. In other words, this is the literature-based reading and thinking essential to the development and elaboration of a question and hypothesis. It can be a way of finding your question, as well as developing the next stages once you already have a question.

All thorough investigation includes a careful analysis and critique of the published sources related to your question. The research advisor may be especially helpful here, but *one of the student's chief tasks is to acquire a thorough knowledge of the literature relevant to the research problem*. This knowledge is mandatory in all areas of research, including the biological, human, and social sciences and the humanities. Any responsible exploration of a research topic requires an understanding of others' investigations as they appear in the relevant literature. *Your job is, first, to master existing knowledge in your field and then to extend that knowledge with an original contribution.*

It should be emphasized again that a simple overview or description of the literature is not sufficient or appropriate as a research project, unless the investigator can say something original about the literature itself. If, for instance, all the literature on a subject is based on a false premise, and the investigator can demonstrate this, then a critical review is indeed an appropriate research problem. But such a discovery is most uncommon. Usually, a review of the literature is only the first stage in an investigation. It is the preamble to a hypothesis and an analysis or interpretation designed to add something to the special field of knowledge. In the humanities and social sciences especially, much of the literature to be reviewed will consist of secondary sources: books written

about a particular subject that are a distillation of the author's research; whereas in the biological and behavioral sciences it is expected that you will be reading almost entirely primary sources. By definition, a secondary source is based on someone else's opinion. To some extent, you must trust the author; but the careful researcher will do well to compare one secondary source with another, examining the source material of each while looking for consensus. If five out of eight authors agree that the Stock Market Crash of 1929 could have been avoided, then you may have some basis on which to formulate a hypothesis. You should not necessarily trust blindly the first "expert" whose work you happen to read or even the majority of experts.

In using any literature, the researcher is reminded to pay particular attention to how recently it has been published and how valid and reliable it is, and in some cases to the scholarly reputation of the author or publisher. ALM candidates are expected to be familiar with the most recent publications in their field. And, while they may not be sufficiently expert to judge the reliability of a piece of research, they must read enough so that they are sufficiently familiar with the standard works in the field to recognize an unconventional analysis and obtain assistance in evaluating it. The contents of many websites and online resources must be used with considerable caution.

In developing a complete list of relevant materials, candidates should perform literature searches. Depending upon the topic, these may be done using electronic databases, print resources, or both. Research librarians can help candidates decide whether and when to undertake a search, as well as which databases and print resources would be best to use. An ALM candidate wrote:

> My vote for "most helpful" goes to those who assisted me in my computer searches, the most effective . . . method of obtaining relevant articles and refining your topic. Of course, a well-constructed search will quickly let you know about the novelty of your topic, as well as the amount of research material available.

Information about relevant databases, both online and on CD-ROM can be obtained from the reference librarians in Widener. Most of the electronic databases are available through the Harvard University Libraries website. If you have not yet been accepted into the ALM program, and thus do not have a University ID or PIN, access to the indexes, abstracts, and so on, is available from the Grossman Library. When doing research for some disciplines such as history and several humanities fields, you will also need to use print indexes, abstracts, and bibliographies as material written before the early 1980s is generally not available in electronic form. Reference librarians will be able to assist you in determining which resources and which formats will need to be explored.

Students should familiarize themselves with the University Libraries system as soon as possible, as it is large and complicated, with over 70 libraries (see Appendix 7) containing over 16 million books, journals, and other materials. Depending upon your area of research, you could find that most of the material you need is in one library; you could also find that you need to do research in four or five. Knowledge of Harvard's more specialized collections is likewise invaluable for the researcher; e.g., the Museum of Comparative Zoology Library, the Archive of World Music, the Center for Hellenic Studies Library, the Harvard-Yenching Library, the Gutman Library, the Fogg Art Library, the Schlesinger Library (Women's Studies), the Houghton Rare Books and Manuscripts Library, the Theatre Collection in Pusey Library, and the Henry A. Murray Research Center for the Study of Lives. The major reference library for the biological and behavioral sciences is the Cabot Science Library. A map showing the locations of most of the libraries, and information about some of the libraries is available in Grossman Library. The largest of Harvard's libraries is Widener, the main library for the study of the humanities and social sciences, which itself contains several million books, journals, and other materials. Widener's Research and Bibliographic Services Department offers tours, which are very useful. Even if you have completed a proseminar and had experience using Widener already, a "refresher" tour may be helpful as you begin your research. It is also extremely important to learn how to use HOLLIS, the University Libraries' online catalog, as well as the journal indexing and abstracting resources, the various encyclopedias, dictionaries, and bibliographies in your field of interest, such as the *MLA International Bibliography*, the *Humanities and Social Sciences Index, PsycINFO*, the *Reader's Guide to Periodical Literature, JSTOR, Citation Linker,*

Lexis-Nexis, Anthropological Index Online, InfoAdvantage, International Bibliography of Art, Avery Architectural Index, and others. Students should also consult Dissertation Abstracts, available online through the University Libraries site, to discover whether unpublished theses on their proposed topic have already been completed.

Costs for computer searches vary with the database, field of specialization, and access location. In some cases (e.g., PsycINFO, Medline) there may be more than one way to gain access to a database, and the cost may differ dramatically depending on how the information is accessed. More information about costs and specific procedures can be obtained from the reference librarian. Many information sources on CD-ROM are available free of charge in the reference room of Widener, where a brochure can be obtained that introduces researchers to some of these. Additional on-line information databases now exist in virtually all fields, some of which are free and can be accessed from Grossman Library, while others require subscription. Harvard Extension School does not supply funds for this purpose.

Empirical Research

Empirical research serves to extend, challenge, or verify a hypothesis by obtaining original data through direct observation and/or experimentation. In the biological and behavioral sciences, direct observation means that the researcher observes behavior or phenomena (associated with chemicals, organisms, cells, quarks, humans, etc.) directly. Its parallel in the humanities and social sciences is working with primary sources—living subjects, original documents, fine artworks, drama.

Direct observation includes naturalistic, correlational, experimental, and quasi-experimental designs. It refers to the type of data to be collected rather than a specific research design. Naturalistic observation requires observing an event while it happens, with no attempt to manipulate or alter it in any way. Participant observation, in which the investigator joins an ongoing group in order to collect observational data not available to non-members, is a variation that requires special care to avoid a lack of objectivity. Participant observation is used most often in anthropological and sociological research although it could be used in any field of study in which an ethnographic approach is indicated.

In making naturalistic observations, the goal is to observe as closely and meticulously as possible, using precise, carefully operationalized definitions and specified observation and measurement techniques. In both the sciences and the humanities, the issues of scope of the observations, threats to validity such as investigator bias, and reactivity must be anticipated and dealt with at the outset in order to be sure that results will be both reliable and valid. (For a full discussion of the so-called "threats to validity," the student is directed to Goodwin, 2002; Campbell and Stanley, 1966 [See Appendix 6: Bibliography]; for these threats represent *some of the most common pitfalls in the design of a research project*.) Constructing an experiment or making observations that will yield credible and useful results is a complicated business. The researcher must take special care not to accidentally subvert the conclusiveness and objectivity of the results. Let us consider each of these in detail.

In correlational research, the goal is to observe how two or more phenomena of interest co-vary. Here again, there is no experimental manipulation or intervention involved. Data may be obtained via observation or through the use of surveys, physiological or biological indices, or any other method that is appropriate to the field of study and the research question.

Experimental and quasi-experimental research is used to test causal hypotheses by deliberately exposing participants or subjects to specific conditions prior to making observations. As above, the data may be from actual "observations" or from responses to a test or survey, physiological or biological assessment, chemical assay, etc. The distinction between experimental and quasi-experimental research is based on random assignment of subjects to conditions: in a true experiment there must be random assignment. However, many variables of interest to researchers cannot be assigned – they are characteristics of a cell line, a species, or a person. For example, gender group comparisons require quasi-experimental designs because gender is innate in the subject.

Likewise, in education research it is common to compare one or more teaching approaches using naturally occurring groups such as children in a specific school or students in two parallel sections of the same course.

(1) "**Scope of the observations**" includes the breadth of the question: all the pieces of sculpture done by one woman artist, a comparison of the works of several women artists from New York City over a fifty-year period, or selected works that depict similar subject matter by only one artist? This is not just a question of *how much* material will be covered; it includes also the *direction* of the research. Each of the three options presented has a different slant. And for each slant, there is a necessary minimum (as well as a feasible maximum) amount of material to be considered. In planning the thesis, students should be aware of pragmatic issues that may interfere with obtaining sufficient data. Cost or time is not a sufficient reason to draw conclusions based on inadequate samples or inappropriate methods.

In the biological, social, and behavioral sciences, this is directly related to the sample-size question. It boils down to whether the researcher has an adequate and a representative amount of data for the number of variables to be considered. The question to be answered and the type and amount of data collected must match. Detailed, extensive observations of five subjects allow for very different conclusions than more specific and precise measurements of one or two dimensions on 100 subjects. Five subjects are sufficient for a case series using applied behavior analytic methods. One hundred subjects allow for an examination of group differences or co-variations among several specific variables, e.g., an examination of how genotype predicts phenotypic expressions of a particular characteristic. Trade-offs exist between intensive case studies of just a few individuals and less intensive group studies of a larger population. Each method is appropriate to different kinds of questions and the quality and depth of observations required for analysis. One of the things you will learn as you familiarize yourself with the literature in any field is what constitutes a typical sample size.

(2) "**Investigator bias**" refers to any effect on the research due to the experiences, prejudices, interests, and so forth of the researcher or investigator. Since it is effectively impossible for us to be free of bias, the best we can do is be aware of our biases and attempt to control or compensate for them. A researcher with a vested interest in some particular outcome to the research may be markedly handicapped in interpreting the evidence. Someone violently opposed to the Castro regime in Cuba, for example, may find it impossible to be sufficiently objective to do thorough research on that country. Particularly but not only in experiments, the researcher has expectations of results based upon the hypotheses and experimental manipulations. To control this, experiments are typically run "blind," that is, without the investigator knowing which subjects were assigned to which experimental condition until all data have been coded.

On another and more common level, the researcher may be working with documents that are themselves biased. US Civil War diaries will show very different reactions to and interpretations of given events, depending on whether the author is from the North or South. Note, however, that this does not diminish the value of such diaries. On the contrary, it is most useful to have more than one outlook or perspective on any matter or event. But the researcher must be aware of these potential biases and be able to deal with research materials accordingly.

(3) "**Investigator effects**" differ from investigator bias in that the latter refers to influences due to the investigator's mindset, while the former refers to influences due to unintended effects of procedures, to the observer's physical presence, and to manifestations of the observer. These effects are due to subject reactivity and are particularly relevant when working with human subjects or animals. In essence, we all behave differently when we know we are being observed, and in designing an investigation it is the researcher's responsibility to mitigate this effect to the extent possible. This may mean giving subjects time to acclimate to the experimental situation or observing from some distance (e.g., using a one-way mirror or videotaping a subject from outside the room). In studies of hypertension, "white coat hypertension" refers to an elevation in blood pressure that occurs in many people when their blood pressure is assessed in a medical setting. To control for this effect, it is expected that a subject will be asked to rest for 5 minutes prior to the assessment and then the measurement will be taken 3 times, allowing the subject to get used to the experimenter, the equipment, and the sensations engendered by the procedure. Again,

it is virtually impossible to eliminate such investigator effects, but a responsible researcher will eliminate as much as possible, and keep the remainder constant. Make conditions minimally disruptive, keep yourself as low-key and neutral as possible, be alert to uneasiness displayed by the subject.

For human subjects, this might mean giving them time to get accustomed to the researcher, speaking their native language, dressing neutrally, making observations from behind a one-way mirror. For other subjects, orientation or "warm-up" time (that is, giving them time to get used to the researcher) is primary. Some animals, like ants, require no time to acclimate to the experimental or observational environment; while others, like primates, can take months or even years. Make observation conditions as unobtrusive as possible—after all, you want to maximize the amount of normal behavior you will see. Depending on the animal, use as little light as possible, dress in a typical, recognizable way (though you need not dress specially for, say, ants!), be calm and quiet.

Students should be aware that, contrary to popular belief and despite the ease of collecting survey data using online tools like Survey Monkey, the development of appropriate measures for use in self-report research is a lengthy, complex process. In most cases, you will be far better off using a measure that has already been developed and validated by another researcher in your field despite the temptation to make up a "custom" survey for your research. In fact, developing and validating a survey is a common master's thesis project, in and of itself, for doctoral candidates in the social and behavioral sciences.

Introduction to Research Methods

The arbitrary and somewhat artificial division of human knowledge into humanities, biological sciences, behavioral sciences, and social sciences is based almost wholly on types of subject matter rather than differences in method employed. While differences in method tend to follow differences in subject matter, there is nothing to prevent the application of a method usually associated with one area to subject matter usually associated with the other two. Regardless of your field of concentration, we therefore urge you to read all of the following sections on research methods, for they overlap in key ways.

The underlying methodological principle in all disciplines is essentially the same: to organize our thinking about the subject matter, whatever it may be, in such a way that we feel we have an active command of it, a recall of it that enables us to explain it to someone else. Implicit in the description just given is the assumption that we continually strive for better and deeper understanding of our total subject matter, and that our finding the definitive explanation is less crucial than the process of searching for it. Our methods allow us to join a community of scholars, for our work must be communicable to members of the community.

What follows is a brief overview of methods usually associated with or regularly used in the biological and behavioral sciences, the social sciences, and the humanities. We present this overview with three points in mind: (a) that there is often more than one possible approach to a topic; (b) that the candidate should be familiar with a number of different approaches; and (c) that this list is not meant to be exhaustive or limiting, but rather suggestive and leading the candidate to consider other possible scholarly approaches and techniques.

> **Nota Bene:** Faculty in particular departments may have very specific preferences regarding the kinds of research methods they wish to be employed in a study. The Harvard psychology department, for example, favors experimental studies; the Romance languages and comparative literature departments favor poststructuralist analysis. Your research advisor will help you to design your project in accordance with these expectations and thus facilitate the recruitment of a willing thesis director.

Methods in the Biological and Behavioral Sciences (Areas A and B)

Although for administrative purposes Harvard Extension groups the disciplines of biology, psychology, and anthropology under the common rubric of "biological and behavioral sciences," many individuals within any one of these areas would be somewhat uncomfortable with such a grouping. But even within a single discipline, the researcher soon discovers the uneasy methodological pluralism that characterizes it. Despite their vast differences in self-definition, purpose, and procedure, the behavioral and social sciences sometimes borrow methods imported from the biological sciences. For this reason, we consider the methods of each together here.

Experimental Approaches

Experimental approaches include research conducted in a laboratory or in the field. Regardless of where the research takes place, the data may be obtained using observations, biochemical assays, surveys, questionnaires, psychometric tests, interviews, physiological measurement, etc. The key is that these approaches emphasize *quantitative* rather than qualitative data, often incorporate *statistical analysis*, and draw conclusions based on *deduction* rather than induction. They are the most widely used research methods in biology and psychology.

Experimentation. An experiment is the only research method that permits you to test a causal hypothesis. Conditions are controlled so that the investigator can test the influence of one factor or another on various outcomes. Specific procedures will vary with different hypotheses, but the overall approach involves intentional manipulation of subjects or surroundings to establish cause-and-effect relationships. The student might, for instance, study the feeding habits of pigeons under two distinct sets of circumstances—one when the animals are permitted to sleep, the other when they are kept awake by artificial light and/or noise. If pigeons deprived of sleep eat less, then a cause-and-effect relationship can be argued to exist between sleep and appetite. If not, then the experimental hypothesis is rejected and the conclusion is that the two variables are not causally related, even if they are related due to some other third factor. Hence, further studies may be necessary.

Experimental research can be conducted in a laboratory or in the field. As we have seen, there is some artificiality in almost any laboratory situation, and of course there are problems of control in the field. The experimental method, like any other research mode, inevitably has its assets and limitations. It lends itself to easy modification; parameters imposed in the laboratory can be readily modified to suit the needs of the experimenter. On the other hand, laboratory conditions seldom replicate exactly those of the "real world." Thus laboratory results may not be good predictors for what will occur outside the lab and have only limited value as guides to reality.

Investigator bias and effects and sample-size considerations also apply to the performance of experiments. In addition, the experimental procedures must be appropriate. That is to say, they must be designed so that they do not themselves significantly influence the outcome or results in unintended ways.

Surveys and questionnaires. These are useful tools for gathering data both in experimental and non-experimental (correlational) designs. They may be used by themselves, or in conjunction with other sources of data (e.g., observations, measurements, medical records, face-to-face interviews, etc.). Some human characteristics cannot be observed directly, and self-report forms may be the only way to obtain the data necessary to conduct an investigation.

Sometimes, surveys are used without any direct contact between the experimenter and the participant. For example, surveys may be mailed to members of a particular organization or distributed over the internet. In all cases, the researcher must be mindful of who is being sampled in order to insure that the data gathered are valid for the purposes intended. In particular, there may be self-selection bias: those who support a particular cause may be more likely to take the time to complete the survey whereas those who are not invested may be less likely to participate.

Furthermore, developing reliable and valid surveys is no trivial task. Even when considering an opinion survey, in which individual items are considered independent rather than aggregated into a scale, care must be taken to write clear questions that are not ambiguous to the reader and responses choices must cover all possible responses. Pilot testing may help to reveal places where the questions are unclear or the response options are insufficient.

To obtain valid results using the survey method, there are a number of considerations. First, the survey must be reliable. That is, there must be proof that the subjects will respond to items in a consistent way if the measure is administered a second time and any ratings or interpretations of the responses are not idiosyncratic to a particular observer. Second, if the items are to be combined into scales, there must be evidence that they represent a single dimension—this concept is referred to as "internal consistency." Third, there must be evidence that the measurements are valid, that is, that the test items or survey questions actually tap the construct the experimenter is trying to measure. For example, if you want to compare the effectiveness of 3 diet plans, you need a valid measure of weight loss. Questions about the tastiness of the foods on each diet might be reliable, in that dieters may always prefer the candy bars on one plan over the bran cereal on another, but tastiness would not be a valid measure of weight loss.

Fourth, questionnaires and surveys are often indirect measures of actual behavior. Using the diet example above, if subjects are asked to rate how well they followed a diet, the investigator learns how well a subject wants others to think s/he did but not necessarily how well an individual really did. Finally, many data-collection strategies rely on random volunteers who may or may not be representative of the population at large. Thus, even a well-validated survey may not yield valid results if the sample is not representative of the population of interest.

Assuming that you have conducted a well-organized survey and tabulated the results, you now confront the problem of interpretation. *How can you distinguish between correlation and causality?* In other words, just because two facts are associated does not necessarily mean that they are linked by cause and effect. You might discover that most students who graduated from Harvard in 1950 are Democrats, whereas most students who graduated from Yale in that same year are Republicans. Did their undergraduate college shape their political allegiance? Perhaps, but not necessarily. That allegiance may instead be related to some third factor, such as admissions procedures that favor a certain socioeconomic background or geography. The temptation to confuse correlation with causality is in fact so common that in traditional logic it received a formal Latin term: *post hoc ergo propter hoc*, "following this therefore because of this." But where there is association, there may be **no** causation.

Other Approaches in the Biological and Behavioral Sciences

These include a wide range of studies that derive from *bibliographical and archival research* or that involve *theoretical, interpretive, and phenomenological analyses*. Questions that originate in *biographical, historical, or philosophical issues* or that focus upon *intellectual history* or *sources of influence* are associated with this category. In the field of psychology, a large range of branches of the discipline including aspects of social, organizational, behavioral psychology, psychoanalysis, developmental, and cognitive psychology traditionally employ non-experimental approaches, as well as experimental ones. Many questions in psychology and biology are inescapably allied with philosophical issues and questions of historical interpretation. What is mental health? How do we know what is good for children? Is there a genetic basis for concepts of "women's work" versus "men's work"? When does life actually begin in the human embryo?

In the field of history of science, technology, and medicine topics that focus upon the life and work of a particular psychologist or scientist, the medical influences upon Freud or another researcher, or the development of the idea of natural selection since the time of Charles Darwin derive from this category of approaches. And while such topics and approaches may be less emphasized by natural and behavioral scientists than are topics and approaches associated with experimental methods, they are nonetheless legitimate areas and methods of inquiry open to candidates who are interested in them.

What we wish to emphasize here is the inherent pluralism of all the individual areas grouped under the rubric "biological and behavioral sciences" and the need to consider carefully the *nature of your topic* and the *kinds of methods most suitable to an exploration of that topic*. Experimental study may offer rigorous proof but, for some issues, at the cost of a certain depth, complexity, and human plausibility; while certain other approaches, such as the use of naturalistic observations, may offer depth, complexity, and a certain plausibility but at the cost of irrefutable proof. The empirical thesis demands a certain level of conceptual rigor and technical facility. The historical or theoretical thesis demands conceptual rigor and scholarly facility. All biological and behavioral sciences candidates should carefully consider whether they want to do an empirical or a non-empirical thesis, but bearing in mind the current interests and preferences of available faculty. *The most important advice we can give you on this subject is to let your topic guide your choice of method and not the reverse.*

Some of the non-experimental approaches appropriate for certain studies in the biological and behavioral sciences are presented in the next section under "Methods in the Social Sciences" and "Methods in the Humanities." The overall point, however, in all these discussions is that a diversity of methods and designs can be used to illuminate any research topic.

Methods in the Social Sciences (Area B)

Little agreement exists among scholars concerning the rules of method in the social sciences. The various characteristics of the sources and the welter of testimony they provide necessitate a variety of methods and techniques to understand them. The investigator is free to pursue any method or technique that is legal and ethical to get at the sources and to extract evidence from them.

Raising Questions

As stated earlier in this chapter, all research begins with a question, and questions are the result of doubt. As Peter Abelard wrote in *Sic et non*: "By doubting we come to inquiry, and by inquiry we perceive truth." In formulating questions, we should be aware that the particular nature of our questions can affect the types of answers we get. The initial premises of what we are studying, whether it be the source testimony or scholars' interpretations, must always be open to question, especially by those approaching the material for the first time.

Darrell Huff, in *How to Lie with Statistics*, tells us there are five questions we should ask in order "to talk back to a statistic." We can apply these five questions with appropriate changes to everything we read. (1) "Who says so?" That is, does the author betray a conscious or unconscious bias that affects his or her judgment and presentation of the evidence? (2) "How do they know?" On what basis does the author make his or her assertions? Does the author back up arguments with appropriate evidence? (3) "What's missing?" Is the author telling you everything you need to know to evaluate the author's arguments? (4) "Did somebody change the subject?" Does the conclusion follow logically from the argument and evidence presented? (5) "Does it make sense?" Is the argument coherent, consistent, and logical? Is there a simpler explanation that would explain the evidence equally well or better?

Areas of Social Science Research

In selecting a subject for investigation, we can divide social science research into four areas: (1) **Economic**, that is, having to do with the satisfaction of the material needs of people; (2) **Intellectual**, that is, pertaining to the training and refinement of the mind, specifically in the areas of culture, interests, tastes, skills, arts, and so forth; (3) **Political**, that is, concerned with the government, the state, or the running of a polity; (4) **Social**, that is, having to do with human beings living together as a group in a situation in which their dealings with one another affect their common welfare. In this division, we should also look for interactive elements among the categories. At any particular time, one or another could be considered dominant over the rest, or we could simply consider them to be mutually interdependent.

Types of Explanation

In trying to understand the evidence, we should be aware of the various types of explanation. According to John Hospers, all explanations are tentative and are meant to elicit the "Aha!" reaction. That is, at the point we say "Aha, that explains it," our curiosity rests. But that point is different for different people; and if we push explanations far enough, they ultimately lead only to assertions of "brute fact," namely, "That's just the way it is." Hospers defines five types of explanation: (1) **Teleological**, that is, in terms of purpose (the Black Death was sent to punish us for our sins); (2) **Classification**, wherein an event is shown to be of some class of events already familiar to us (the Black Death was an outbreak of bubonic plague); (3) **Generalization**, that is, an instance of some general law (when a contagion is introduced into a community, the rate of mortality will be directly proportional to the virulence of the contagion and inversely proportional to the level of resistance of the members of that community); (4) **Description**, or, the describing of the intermediate steps involved (a ship from Kaffa traveled to Southern Italy in December 1347 and brought bubonic plague with it); and (5) **Referential**, that is, some reference to a possible cause (rats caused the Black Death).

Types of Interpretation

Researchers should be aware that their matrices of interpretation (hermeneutics) affect what they think they perceive. In other words, facts do not exist independently, nor do they speak for themselves. Facts are always part of some pre-existing system of belief. Among the most prominent are: (1) **Ageist**, a belief that people over or under a certain age are not capable, qualified, or to be trusted; (2) *Annal*istic, that is, belief in the broad sweep of *la longue durée*, that patterns of behavior filter up from below in society; (3) **Behaviorist**, a belief that the environment determines human and animal behavior; (4) **Capitalist**, a belief that profit for the individual and competition among individuals in a society benefit that society; (5) **Culture Bias**, a belief that, since any particular culture may be inferior or superior in one feature, it is thus inferior or superior, respectively, in all features; (6) **Democratic**, a belief that everything can be explained in terms of the rise of political and civil liberty for the individual; (7) **Elitist**, a belief that in any society, it is the elite who rule and determine standards for the rest of society, that patterns of behavior filter down from above; (8) **Evolutionary**, a belief in the process of development from simple to complex or from primitive to sophisticated, or more simply a belief in the inevitability of progress; (9) **Existential**, a belief that any interpretation is an arbitrary and purely personal ordering of a random world; (10) **Gender Bias**, a belief that one gender is inherently superior to the other (now discredited in scholarship, but it was the prevailing view, in the male-oriented version, until the last few decades of the 20th-century, and is still prevalent at non-scholarly levels); (11) **Marxist**, a belief in the rise of economic liberty for people within a community or society through cooperation and (if necessary) through violent overthrow of economic exploiters; (12) **Nationalist**, a belief that when one's country gains, that's good—and when one's country loses, that's bad; (13) **Psychoanalytic**, a belief that the behavior of an individual can be explained in terms of patterns the individual developed as a child; (14) **Racist**, a belief that there are superior and inferior races (now discredited in scholarship, but quite prevalent earlier in the early 20th century and still prevalent at non-scholarly levels); (15) **Religious**, a belief that everything can be explained in relation to divine will.

In approaching your topic, you should be aware of certain dualisms, that is, ways of approaching the subject matter that often imply the exclusion of their own exact opposites. For example, do we approach our subject matter with the view that there is one correct way of looking at it or many "correct" ways? **Positivism** is an approach that holds that the natural laws apply to society, that they are knowable, and that, once known, they are applicable to all societies (one correct way). **Relativism** holds that the values of any culture or society are equal to that of any other culture or society (many "correct" ways). We could also take an internal vs. external approach. **Structuralism** deals with the internal structure of things and defines the functioning system according to that structure. **Semiotics** deals with the study of signs and outward manifestations of things and tries to compare different systems according to those outward manifestations. We could also take a top-down or a bottom-up approach. **Idealism** tends to see the real world as a world of ideas (e.g., the *Weltgeist*) that determines the material, physical world. **Materialism** tends to see the real world as the material world, which, in turn, determines the world of ideas (e.g., "You are what you eat").

Methods in the Humanities (Area C)

Research in the humanities can be accomplished through a surprisingly diverse range of methods, which apply equally well to the study of languages, literatures, the fine arts, applied arts, and religion. Most of these methods fall into two basic categories: **Extrinsic** or **Contextualist** approaches and **Intrinsic** or **Isolationist** approaches.

Extrinsic or Contextualist Approaches

Extrinsic or contextualist approaches are largely **historical** in orientation; that is, they seek to examine the context, the milieu, the background that produced the literary text, artwork, idea, or author/artist. Such approaches assume that there are causal connections between the nature of a work of art (including its content and its form), or a linguistic or an ideological phenomenon, and the historical moment in which it occurred. However, it should be understood from the outset that no single such factor ever fully accounts for the complexity of a text, artwork, or idea, which tends to be the product of many different causes. Although the term "historical" would seem to suggest that such methods are applicable only to older works of art, texts, or ideas, they are in fact equally useful in a discussion of contemporary works and ideas as well; however, they are then more properly described as "extrinsic" or "contextualist" approaches. Under this general rubric fall several more specialized methods:

(1) Texts, artworks, and ideas are born of individuals; thus many studies are specifically **biographical** or **psychological** in orientation, focusing directly upon the life and mind of the author/artist, seeking connections between life experience and the product(s) of his or her mind. Also included under this rubric are so-called **influence** studies, which chart the impact of a particular individual, work, idea, or movement of some kind upon another. **Comparative** studies might likewise be made of two or more works by the same author or artist, as a way of arriving at some conclusions about the author's/artist's intellectual, personal, aesthetic preoccupations and development; or of works by different authors/artists working in the same medium or genre, as a means of discovering the uniqueness of a particular person's body of work. These modes of analysis presuppose substantial research into primary documents such as letters, journals, diaries, first-person accounts of contemporaries, and so forth. Careful investigation of an author's/artist's stated **intentions** with regard to his or her work should be considered as interpretations are advanced.

(2) Works are likewise produced within an **institutional** context; thus it can be productive to examine the **social**, **economic**, and **political** conditions that surrounded an author/artist, in order to determine whether directly or indirectly they affected the artworks or the more widespread movements of which specific works form only a part. Under this rubric an even narrower focus can be achieved by using the following closely related methods:

Gender, race, ethnicity, identity, and sexuality studies focus upon the literary and artistic representations of specific groups such as women, gays, lesbians, African Americans, Hispanics, Asians, and Jews. These kinds of studies examine the lives, attitudes toward, and social conditions of such groups as either the background against which a work or an idea was conceived, or as phenomena reflected within a work or an idea—often, but not exclusively, in works produced by members of that group. For example, **feminist** critics seek to understand historical concepts of "the feminine" and their impact upon an author's/artist's representation of or assumptions about women. Such studies often critique the masculine, authoritarian tradition of misrepresenting or excluding the female. This tradition, operative in both literary and art history, has been shown by feminist critics to be responsible for the suppression of countless works of art by women; thus, much feminist criticism has devoted itself in recent years to locating and re-establishing the primary texts by women authors/artists and securing for them a place in the canon. Feminist scholarship in the field of religion has generated radical revisionist readings of major theological texts, particularly of the Bible. Film criticism has likewise benefited from feminist interpretations, prompting fascinating explorations of the masculine **"gaze"** of the camera upon a variety of feminine stereotypes, real and imagined. All versions of gender, race, ethnicity, identity, and sexuality studies

share a common interest in the expression and interrogation of such depictions, as well as their relationship to the prevailing power structures within a society.

A **Marxist** approach is derived from a specific scientific theory of human societies—namely, that history is the record of people engaged in struggles to free themselves from oppressive class and economic systems; and that history can be properly understood only in terms of a society's modes of production and the material life they afford—for all attitudes, values, and expressions of culture (e.g., its art) are necessarily linked to the economic conditions of daily life. Thus a Marxist interpretation of art would address itself not only to the more obvious depictions of the political and economic lives and struggles of individuals (as in, say, Delacroix's painting *Liberty Leading the People*, Hardy's novel *Jude the Obscure*, or Strindberg's play *Miss Julie*), but to subtler manifestations of these phenomena, such as the evolution of genres; the rise of new forms of artistic expression; and the means by which works were actually produced, marketed, and received by the public and by those in power. For instance, how does one explain the rise of the novel in the 18th century? The appearance of Cubism in painting? The use of polyphonic voices in Eliot's *The Waste Land*? The rise of the International Style in architecture? The movement from Naturalism to Expressionism in the European drama of the 1890s? How politics affected the translation of certain passages in the King James version of the Bible? Why Wordsworth chose to publish his poem *The White Doe of Rylstone* in the more expensive quarto format and how this decision affected the sales, reviews, and subsequent literary reputation of the poem? The Marxist critic would argue that all of the foregoing questions are answerable within a political, social, or an economic context.

More recent incarnations of this mode of analysis are the **New Historicism**, **Cultural Criticism, and Post-Colonialism**, all heavily historical and sociological in orientation but manifesting a postmodern skepticism about history and culture's somewhat deceptive self-fashioning. These modes of criticism seek to explore aspects of, and the relationship between, "high culture" and "low culture" (as they have frequently been described), recognizing that the identity of a society and its values are Influenced by both spheres. Since working-class voices and native voices (in the case of societies colonized by outsiders) have often been ignored, suppressed, or co-opted by the proponents of the hegemonic "high culture," the three critical approaches above focus their attention on these uneasy relationships and on the significance and vehicles of expression that emerge from mass culture.

Among the several institutional contexts, a **technological** or **materials-based** approach would examine the impact of a particular technological innovation upon a specific work, movement, medium, or discipline, such as the invention of color film or the ultra-high-speed lens upon photography or filmmaking; of tempered glass upon contemporary architectural style; of acrylic paint upon traditional easel-painting; or of digital technology on preserving glass-plate negatives.

(3) A **history-of-ideas** approach seeks to explain texts, artworks, and other intellectual developments in terms of a larger context of ideas characteristic of an age. These leading ideas can be philosophical, scientific, or religious in origin (e.g., positivism, evolution, evangelicalism) but are nonetheless profoundly influential upon many other areas of knowledge. Some scholars subscribe to the notion of a *Zeitgeist*, a "spirit of the age," which simultaneously permeates all intellectual disciplines; this method thus assumes a kinship of ideas among the several arts, philosophy, religion, the sciences, and various other creations of the human mind that comprise "culture" in a given age. Scholars have often traced the metamorphosis of a single idea through several ages and its appearance in various media (e.g., the concept of the "great chain of being," the idea of skepticism, the psychological principle of the association of ideas, the neo-Platonic concept of beauty). Under this same rubric we may place studies of the "**taste**" of an age; as well as of **movements**, of which, according to intellectual history, individual writers or artists formed a part (e.g., Neoclassicism, Romanticism, Dadaism, Russian Constructivism).

(4) A related approach concerns itself with the analysis of **myth, archetypes, folklore, iconography, iconology**, and **other patterns of visual or verbal imagery**, which occur as *leitmotifs* within individual works or groups of works. Extrinsic treatments of this subject often focus upon the historical origins of such stories or emblems,

their reappearance in various ages and media, their evolution from one kind of representation to another, and the social, political, or psychological causes that prompt their re-emergence (e.g., the creation story, Camelot, the leprechaun, the Madonna, the fisher-king, the vampire).

(5) Furthermore, charting the development of a specific **genre, medium, or category** of *objet d'art* (the sonnet, Victorian "moral art," the improvisational drama, the Greek amphora) and its attendant conventions or characteristics can prove a fruitful approach, particularly when analyzing a work according to the "horizon of expectations" that the genre sets for the reader/viewer, and the degree to which that work gratifies or thwarts those expectations (e.g., In what ways do John Donne's *Holy Sonnets* defy our expectations of the sonnet? On what generic grounds was Beckett's *Waiting for Godot* a shock to the typical theater-goer of the 1952 season? How did Beethoven's Symphony No. 3 ["Eroica"] depart from the earlier conventions of symphonic composition? How did Horne Tooke's notion of "abbreviation" revolutionize eighteenth-century concepts of grammar?).

(6) The methods known as **hermeneutics** and **reception theory** offer real challenges to the researcher; for both demand that one recreate as accurately and completely as possible the exact historical milieu in which a work was conceived in order to comprehend the intentions of the artistic or authorial consciousness that created it, as well as the audience's subsequent response to it.

The **hermeneutical** critic charts the *meaning* of the work through time; believing, however, that meaning itself is a historical—and therefore relative—construct, subject to changes from one period to another. (What Shakespeare's plays meant to the Renaissance audience is different from their meaning to a twenty-first-century one.) The author may intend to invest his or her text/artwork with certain meanings, but the audience will always endow it with additional ones; or to put it another way, the text/artwork will—as it continues through time—accrue further meanings, regardless of the author's original intentions. Interpretation is, therefore, *situational* and is necessarily a dialogue between past and present interpretations of a work. In this interpretive history, the hermeneutical critic must be well versed.

Reception theory focuses specifically upon the reader's role in actually helping to *create* the meanings of a text. The psychodynamics of the act of reading itself are explored, the means by which the reader actualizes or "concretizes" the literary work. Similar studies occur in the visual arts, such as Rudolf Arnheim's landmark work *Visual Thinking*, which explores the union between visual perception and the rational process of constructing meanings from the act of looking at a work of art. While these methods might seem to imply an anarchical "anything-goes" mode of interpretation, in reality both presuppose a substantial knowledge of history, psychology, and the various conventions of artistic forms, which serve as shorthand "codes" or "signals" utilized by the author/artist in the creation of a work, and which, if recognized, enable the reader or viewer to arrive at *reasonable* interpretations.

(7) In the fine arts, another important approach is referred to as **Connoisseurship**, which involves acquiring extensive knowledge of works of art chiefly for the purpose of attributing them to artists or schools, identifying sources, styles, and influences, and judging their quality in relation to the existing canon.

Intrinsic or Isolationist Approaches

Intrinsic or isolationist approaches concern themselves solely with the structure and materials that constitute the text, painting, sculpture, vase, photograph, film, building, play (or any other artifact). By "structure" and "materials" we mean not only the diverse elements that comprise **form** and **content** but the innate and unique **relationship**—indeed, the complex interaction—that those various elements have with each other, and that collectively produce and unify the aesthetic qualities of the artifact. Factors outside the text or artwork itself are banned from consideration (the author or artist, the facts of his or her life, the historical period in which the work occurred and all events and persons associated with it, the history of the genre or medium of the work under scrutiny, and so on). These methods are also referred to as "**textual**" (in the case of literary works) or "**formal**" (in the case of both art and literary works). The proliferation of intrinsic approaches in the 20th-century reflects a

backlash against the more traditional extrinsic ones, which seemed to subordinate the artwork to the artist and his or her times. Intrinsic approaches treat the work of art as an autonomous, unified system of structures or interdependent "signs," either linguistic or pre-iconographic (to use Erwin Panofsky's term), depending on the medium under consideration.

For the intrinsic study of literature, several general categories of inquiry—all language-based—can be used to analyze the many strata of a work. As suggested by René Wellek and Austin Warren in *Theory of Literature*, such analyses focus on the following: the **individual units of meaning**—from words and phrases to sentences and stanzas—that determine the formal linguistic structure of the work and its style (including its diction and its syntax); **sound-effects**—euphony, cacophony, rhythm, meter, alliteration, assonance, consonance, onomatopoeia, rhyme—and their role in creating the totality of a literary work; **literary devices**, such as image and metaphor, symbols and symbolic systems (myths), and the wide range of related figurative devices that contribute to a work's structure and meaning; the "**world**" or "**consciousness**" within the text, the interplay of "voices" (especially important to narrative fiction) and the tone they create (which, it can be argued, is the sum total of all the stylistic elements previously described—diction, imagery, syntax, sound, and rhythm). Literature is thus seen to be an artful arrangement of language, its content and form inseparable, realized through a variety of techniques—the detailed investigation of which leads the reader to a total experience of the work, without any need for extraliterary considerations. All of the foregoing are really modes of **linguistic** criticism. More specialized versions are described below:

(1) A **structuralist** approach concentrates upon the "structures" that comprise literary language and their complex relationship to each other; these structures are both grammatical and mythic in nature (the former with its roots in linguistics, the latter in anthropology). All entities (whether in a text or in a society) are seen to be comprehensible only in terms of the larger structure of which they form a part. Individual words (the "signifiers") are used arbitrarily to denote particular objects or abstractions (the "signified"). Together these "signs" constitute language, which is used to express ideas. Words or signs have **syntagmatic** or "horizontal" relations, that is, a linear relationship with the words that precede and succeed them in sentences, the positioning of which affects "meaning"; and **associative** or "vertical" relations, namely, a relationship with all the other words that might have been chosen to express an idea but were not and thus sharpen the meaning of those that were. Literary language, by virtue of its poetic nature and the devices it employs (metaphor, rhyme, and so on), self-consciously courts unique modes of expression, calling attention to its medium over its message, subverting the more "ordinary" linguistic system by extending and modifying it. The text consequently presents many levels of relationship and thus many levels of meaning. This is the aim of a structuralist approach to literature: to discover these relationships as well as these various levels of meaning (although with little of the conventional critic's concern for the *implications* of those various meanings).

(2) Similar to this method are **formalism** and **semiotics**, both of which—like structuralism—are described as "sciences" of literary or textual analysis.

Formalist approaches are likewise concerned with literary structure, with the recognition and objective description of their uniquely literary nature and use of phonemic devices. To underscore the "scientific" orientation of their analysis, the (Russian) formalist critics of the 1920s described the literary text using three relatively clinical metaphors: as a machine, as an organism, and as a system. Subsequent formalists have concentrated upon literary language's self-reflexive quality—its tendency to call attention not to the speaker, the addressee, or the meaning and purpose of their discourse; but to the words themselves and their complex patterns of opposition, similarity, and parallelism. Formalist analyses thus focus upon the processes and devices through which literary language "defamiliarizes" or estranges itself from ordinary language, foregrounding its own "literariness."

Semiotics, which means the systematic study of signs, is really a *field* of study, rather than a *method* (like structuralism and formalism). Terry Eagleton (in *Literary Theory: An Introduction*) has succinctly summarized its background and its complicated agenda:

> The American founder of semiotics, the philosopher C.S. Peirce, distinguished between three basic kinds of sign. There was the 'iconic,' where the sign somehow resembled what it stood for (a photograph of a person, for example); the 'indexical,' in which the sign is somehow associated with what it is a sign of (smoke with fire, spots with measles), and the 'symbolic.' Semiotics takes up this and many other classifications: it distinguishes between 'denotation' (what the sign stands for) and 'connotation' (other signs associated with it); between codes (the rule-governed structures which produce meanings) and the messages transmitted by them; between the 'paradigmatic' (a whole class of signs which may stand in for one another) and the 'syntagmatic' (where signs are coupled together with each other in a 'chain'). It speaks of 'metalanguages,' where one sign-system denotes another sign-system (the relation between literary criticism and literature, for instance), 'polysemic' signs which have more than one meaning, and a great many other technical concepts.
>
> (100-101)

A literary text is thus seen as the most complex form of discourse, an amalgamation of numerous systems—each containing its own inherent tensions and harmonies, which interact with those of all the other systems. A text's meaning is, furthermore, not simply an internal matter; rather, the text is related to larger systems of meaning in society, in readers, and in the entire history of literature, all of which amplify its meaning. A semiotic approach to a work seeks to discover this network of relations, which the text holds within it.

(3) **Deconstruction** or **poststructuralism** is a complex fusion of structuralism's emphasis upon the patterns and structures inherent in literary language—as well as its tendency to view linguistic and ideological phenomena in terms of binary oppositions or contraries (high/low, light/dark, masculine/feminine, truth/falsehood); assumptions from the field of psychoanalysis, which regards writing as the simultaneous expression and repression of desire; and the post-Enlightenment skeptical tradition in Western philosophy, which ultimately views indeterminacy, alogicality, and self-division as inevitable consequences of human existence and all human endeavor (including language and writing). Language is regarded as consistently subverting or contradicting its own assertions, evading its own apparent inner logic, and all attempts at generalization or systemization. Like the human mind itself, with its conscious and unconscious levels of mental activity (what Freud referred to as the "manifest" and "latent" contents of the mind), a literary work seems to posit certain ideas and relations on the surface (the "text"), which, when examined more carefully, reveals numerous "symptomatic" points—places where impasses of meaning occur because inherent in them are contradictory ideas left unresolved (the "subtext"). Deconstructionist criticism seeks out such oppositions within a text and charts their various configurations.

(4) A **phenomenological** approach (derived from the philosophy of Edmund Husserl known as "phenomenology") seeks a totally immanent reading of a literary text. Nothing but the authorial "consciousness" that the text embodies is considered—from its mode of stylistic expression to its ontological and epistemological assumptions. The purpose is to experience as fully as possible the world of this mind—how it perceives time and space, relations with others, and material objects. Critical judgments are suspended in this mode of criticism, its object being a pure, largely passive experience of the work.

In the fine arts, applied arts, and dramatic arts, the foregoing approaches are removed from a linguistic context and transferred to a **pre-iconographical** or **staging** context. In the fine and applied arts, the emphasis would be on pure forms, line and color, shapes, materials, techniques, poses, gestures, atmosphere, composition, and other such artistic motifs and categories. In dramatic arts (where both the written text of the play and its stage production[s] might be considered), set and costume designs, lighting, blocking, characterization, and other aspects of staging are examined in terms of their role in implementing the total aesthetic conception of the play.

With all of the approaches previously described, extrinsic and intrinsic, candidates should realize that many of the methods require substantial background research before it will be possible to employ them successfully.

Methods can be *combined* as well (e.g., a feminist-Marxist approach), if there is a logical reason—associated with the nature of a particular research problem—for doing so. Some of these methods are clearly more appropriate than others for certain types of research problems. **It is therefore important for students to consider fully the implications of their topic, the issues they wish to prove or elucidate, and the approach(es) that will yield the most fruitful results.**

Recapitulation: The Basic Steps in the Development of a Research Project

To reiterate, the entire procedure consists of these steps:

1. Consider a **variety of topics** that interest you and about which you have some questions.

2. Some **preliminary reading or observations** will enable you to select a single topic and a leading question or two upon which you will focus.

3. **Talk to the research advisor** to discuss the logic of your thinking and the feasibility of your project. This will save you from spending many hours developing a project that is too expensive or labor-intensive to be completed as a master's degree candidate.

4. **More extensive bibliographic research** will help you focus, refine, or (less often) quickly answer the question(s). If the latter, return to step 1; otherwise, continue.

5. A **hypothesis** must be formulated from the initial questions, set up to give unambiguous results.

6. A **proposal** must be written, and it must include:
   - the questions to be asked
   - the hypothesis
   - its background and theoretical framework
   - justification of research
   - methods that will be used
   - projected schedule

   There will likely be several interim drafts as well, often between 3 and 5 drafts.

7. To be accepted, the **final proposal** must incorporate comments and suggestions from the research advisor.

8. **Proposal approval and a thesis director** must be obtained.

9. The **nine-month thesis period** begins.

Chapter 3

The Research Proposal

Presentation of an acceptable proposal is not the beginning of the work on the thesis. Rather, it marks the end of the first major stage of the research process.

Before a proposal can be submitted, the student must have identified an appropriate research problem and developed realistic ways of exploring it. This process generally takes several months, and it should begin, as suggested earlier, shortly after the student has completed 6 courses for ALM credit.

The student should realize that preparing the proposal is both a formal and an intellectual exercise. Success in obtaining a thesis director will be significantly influenced by the quality and topic of the proposal. Therefore, all aspects of the proposal should be prepared as carefully as possible. Copies of some successful proposals are available in the Grossman Library, where there are also photocopying facilities, and on the ALM website. We strongly urge candidates to examine some of these proposals, as well as the completed theses that developed from them.

Beginning the Project

In reply to a survey of recent ALM graduates, a respondent emphasized: "Major commitments, both professional and personal, should be resolved before beginning work. You must think your way through completing the entire project, particularly in the early stages." This is excellent advice. A thesis cannot be successfully completed with less than full dedication to the task. Planning and completing a thesis, though ultimately among the most rewarding academic experiences, are also among the most difficult.

Financial Resources

The Extension School program does not have funds to support the thesis. Each candidate must be prepared to invest not only time but also money in this project. (One graduate wrote: "My suggestion is to buy two or three times the amount of supplies that you think you will need, especially paper and printer cartridges. . . . Running out in the middle of the night or on a weekend is immensely frustrating!") In preparing a budget, it is useful to include allocations for some or all of the following items: books, laboratory expenses or other equipment, travel, photocopying, postage, computer searches, thesis paper, word processing, and binding of the final copy of the thesis.

Computers are available at 53 Church Street and the Science Center for text processing of the research proposal and the final thesis. Further information can be obtained from the ALM office.

On Using Computers

Students who plan to prepare their manuscripts themselves on personal computers should ascertain, **well before beginning the thesis**, the capabilities of their machines. Many older computers have serious limitations. Some will not double space, some will not superscript, some have unadjustable margins, some are not compatible with laser printers, some will not allow the user to control the placement of page numbers. These limitations make it impossible to produce an ALM proposal and thesis that fulfill all of the technical requirements outlined here. **The limitations of one's personal computer in no way release the student from the necessity of preparing the manuscript correctly.** It may be necessary to lease a new computer or to pay a professional to word process and prepare the manuscript. Students should not use more than one software program when writing the thesis. Multiple versions are often impossible to reconcile, creating additional problems to be

corrected later on. Students who make these preparations early on will find that they can concentrate more fully on their research and writing, without the added frustration of technical problems to hamper their progress.

It is also a good idea to train yourself, from the outset, to employ the format required for the proposal and thesis—from correct spacing of margins and headings to the correct style of documenting notes and bibliography. Such practice will facilitate the preparation of your manuscript later on, when time and patience may suddenly grow short.

Introductory Reading

The most efficient way to explore a topic and to test one's interest is to read about it. In the initial stages, the reader skims or surveys a broad variety of materials with the purpose of gaining background knowledge in several fields of inquiry.

As a rule, much of this introductory reading may not be directly related to the final research project. Nonetheless, the reader is advised to make a few brief notes on each work read—library call number, author, title, publisher, date, and a brief synopsis of the most interesting points—so that the material can be found again if it is needed later. Useful quotations should be scrupulously documented and enclosed In quotation marks. Annuals, surveys, general histories, reviews, and specialized bibliographies, such as the *MLA Bibliography* and *Historical Abstracts*, are helpful sources for the exploration of many topics. Textbooks and research papers from previous courses also will assist in gaining sufficient background to begin identifying a suitable research problem.

At the beginning of this reading, you should establish a consistent method of documenting the research. For each item, **record full bibliographical information,** and make reference notes of some sort. Few things are more exasperating than the discovery that the documentation on a significant piece of research datum is missing. A methodical recording of the necessary information in a computer file, though tedious, should save much time and discomfort at later stages in the research process. The software programs called "EndNote" and "RefWorks" are particularly useful, for they can be modified to format all notes in APA, MLA, or other styles and will reproduce them in correct format each time you make new entries. Such citation tools also enable users to collect, store, and manage research notes and documents.

Identifying a Problem

It is most important to begin with an area or a topic of genuine and lasting interest. An ALM candidate wrote:

> Love your research. . . . There is no heavier cargo to bear than a waning interest. Read and re-read as much as you can before submitting your research proposal to ensure that you have a significant curiosity and commitment to the subject matter.

Another said: "Choose your problem as you would choose a mate. Be sure it is one you can live with day after day and that it has new and interesting facets to uncover as time goes by." Even the best thesis topic will try your patience from time to time; you should therefore attempt to ensure that you and the topic are as compatible as possible from the very start.

In general, candidates choose their research topic on the basis of prior reading and personal experience, but the interests of possible thesis directors may also be a consideration. When you submit your proposal, you will be asked to suggest names of potential thesis directors. You should therefore already have given some thought to how closely your proposal matches the research interests and capabilities of the Harvard faculty.

In this regard, we urge you to consult the online course catalogue for the Faculty of Arts and Sciences to ensure that there are faculty teaching courses in the general area of your proposed topic. The catalogue will also tell you the rank of the instructor involved. Thesis directors **must** hold the rank of **senior lecturer**, **assistant professor**, **associate professor**, **full professor, or professor emeritus/emerita** and be voting members of the Faculty of Arts and Sciences; or hold a senior-level teaching appointment in one of the other faculties (such as Law, Education, Medicine). *Not all instructors in the Extension program meet these requirements, so the fact that you had a certain professor in an Extension course does not necessarily mean that this person is eligible to direct an ALM thesis.*

How do you choose a research topic? Like any large undertaking, this one is easiest to approach if broken down into smaller steps. Your first step should be simply to brainstorm: make a list of topics that might interest you. They may be related to papers you have written for earlier Extension courses, to your reading, or to issues raised in connection with your work. Let the list take shape over several days or weeks until you have a number of topics. Then go down the list and rank the topics in order of preference.

Step two involves discussing your list with the research advisor for your field. Bearing his or her responses in mind, you are now ready to select one topic for step three. Take a blank piece of paper and write briefly what you know and what you would like to find out about the topic. It will be helpful to keep the following questions in mind:

- What has been said about this subject already?

- Which aspects of this topic remain unexplored or unresolved?

- Do any questionable or erroneous assumptions characterize the previous writings on this topic?

- Is there a particular method or approach to this topic that might shed new light on it?

Writing in this way tests your interest and also suggests how much you need to discover in order to begin to prepare a proposal on the chosen topic. If, for example, you are interested in medieval architecture but find that you cannot think of a single cathedral you know well, then you have a lot of work ahead of you, and you may want to rethink the topic. If your short essay proves to you that the topic is not worth pursuing, move to the next on your list of interests and write briefly again, and so on, until you feel satisfied with the topic you have selected.

Once a general research topic has been chosen, the next step should be to find ways to limit it, give it clearer focus, and shape it into a tightly defined research problem or question. If the problem is too broad, the research is likely to remain superficial. There will simply be too much material for you to investigate. Conversely, the topic may be so narrow that not enough material exists to do it justice. You may find yourself fascinated by a particular topic but discover that there is only one article on it and that it is written in a language you do not read. It is then wise to choose another topic.

All this does not mean, however, that the thesis cannot deal with important issues. It should. But the mark of a careful and competent researcher is to know how to pick the proper angle from which to approach an issue.

Consider, for example, the problem of utopias. No thesis could possibly encompass all the ramifications of this topic. Instead, the investigator might examine utopias created in a particular period or country, or the psychological or economic ramifications of particular utopian systems. Alternatively, one might focus on the

utopia created by a single author—Thomas More, for example, or B. F. Skinner—evaluating it within the context of a specific social theory.

Here are some examples of topics that were at first too broad or unfocused and were subsequently narrowed or focused by the student:

Unfocused:	"The American Constitution"
Focused:	"Definitions of Libel under the First Amendment to the Constitution"
Unfocused:	"American Expatriate Artists"
Focused:	"Three 19th-Century American Expatriate Artists and Their Critical Reception Abroad: Sargent, Whistler, Cassatt"
Unfocused:	"The Falklands War and Its Impact on the World"
Focused:	"The Falklands War and Its Impact on the British General Elections of 1983"
Unfocused:	"Japanese Shintoism"
Focused:	"The Idea of *Kami* and the Japanese Concept of Deity"
Unfocused:	"The Effect of Decreased River Pollution on Animal Life"
Focused:	"The Growth of the Cormorant Population on the Charles River Since 1980"
Unfocused:	"Early Intervention Programs"
Focused:	"The Effect of the Healthy Start Program on Infant Mortality in Massachusetts"
Unfocused:	"The Effects of Weather on Culture"
Focused:	"The Impact of El Niño on the Chimu Culture of Peru from 1000 to 1300 AD: A Comparison of Meteorological and Archaeological Data"
Unfocused:	"Shakespeare's Unconventionality"
Focused:	"Subversion and (Un)Containment: Homoeroticism in the Plays of William Shakespeare"
Unfocused:	"Can Computers Be Used in Psychological Testing?"
Focused:	"The Potential Utility of Computerized Adaptive Testing in the Domain of Personality Assessment"
Unfocused:	"Photography of Niagara Falls"
Focused:	"Stereographic Photography of Niagara Falls: The Forgotten Works of George Barker, Charles Bierstadt, and George E. Curtis"
Unfocused:	"Biochemistry of Sudden Infant Death Syndrome"
Focused:	"The Effect of Mullerian Inhibiting Substance on Biochemical Maturation of the Fetal Rat Lung"

Developing a specific research problem out of a more general topic is perhaps the most difficult and important phase of the entire research project. You have two sources of help in order to surmount this difficulty more easily. The first is the proseminar, numbered HUMA E-100 (in the humanities), SSCI E-100A (in the behavioral sciences), SSCI E-100B (in the social sciences), or BIOS E-200 (in biology). You must have satisfactorily completed a proseminar in your field before being accepted as an ALM candidate and embarking on the thesis. The principal aim of the proseminar is to help candidates learn how to identify appropriate research problems and develop the research skills necessary to investigate them.

The second resource is the research advisor, who assists students in formulating their research proposals after the completion of their formal course work but before they have begun working with a thesis director from the Harvard faculty. One of the chief functions of the research advisor in your field is to aid you in producing a successful proposal; another, equally important, is to help you find a thesis director once the proposal has been accepted. **You must meet with the research advisor at least once BEFORE you begin writing your proposal and gain tentative approval of your topic.** Since the research advisor must approve your proposal before sending it on to your eventual thesis director, it is clearly in your interest to find out whether he or she finds it a feasible topic before you have invested a great deal of time and energy in the project.

It should be added that the first version of even a well-defined research problem may be modified or amplified in one way or another over the course of the investigation. One never knows entirely what will be found until the research is complete. But a clear focus at the outset is essential for the project to succeed at all.

General Format for the Proposal

The style and content of the proposal, typically **fifteen to eighteen double-spaced and typewritten pages**, will depend upon the specific research problem and method. Examples of research proposals from years past, as noted above, are on reserve at Grossman Library and on the ALM website and should be consulted by the student before beginning. Each proposal should have a **title page** that includes the *field of concentration,* the *candidate's name, address, telephone number, e-mail address*, and the *date* on which the proposal is being submitted (see the sample proposal in Appendix 1). In terms of content, all proposals should include the following:

1. Tentative Title

2. Research Problem

3. Definition of Terms

4. Background of the Problem

5. Research Method(s)

6. Research Limitations

7. Tentative Schedule

8. Working Bibliography

1. Tentative Title

The first section, the tentative title, probably should be written last. A successful title will emerge only after it has been determined, often by trial and error, just what the investigator hopes to accomplish. The title should be specific and clear; you may want to accompany it with a subtitle. Ideally, it should summarize the research problem with efficiency and style. Avoid titles that are pretentious, vague, or wordy, or that repeat the hypothesis statement or the main question of the study. Expressions such as "An Investigation of" are redundant and should be omitted. Titles of just one or two words, on the other hand, are too brief to indicate the scope of the research problem. An overall rule is that the title should be explanatory but concise when standing by

itself. *Remember that it must fit on the spine of your bound copy.* Use key words that will make the thesis easily searchable by others.

Here are some examples of poorly worded titles that were effectively revised:

Original: "An Investigation of the Possibility of Improving the Tax Method of Many Massachusetts Cities and Towns for Raising Revenue to Cover Rising Expenses for Public School Education in Those Same Cities and Towns" (Too wordy)

Revised: "Improving Education Funding through Local Tax Revenues in Five Massachusetts Municipalities"

Original: "The Need for World Order" (Too vague)

Revised: "The Peace-Keeping Role of the United Nations in Lebanon since 1980"

Original: "Why, How, and When Did Black Readers Respond to the Works of Erskine Caldwell?" (Asks a multi-layered question)

Revised: "The Black Critical Response to Erskine Caldwell's Literary Works from 1931 to 1940"

Original: "Some Aspects of Animal Behavior in Monkeys" (Too vague)

Revised: "Group-Foraging Behavior in *Cercopithecus erythrotis*"

2. Research Problem

The statement of the research problem should be precise. Unless the problem includes specific subproblems, this section will not normally exceed **two to four pages**. *The first paragraph of this section should briefly introduce or set in context the subject of your research.* Then, simply state the problem or question the research will explore. Later, in the "Background" section of the proposal, you can describe more fully the sources to be used in analyzing this position and making the argument.

The statement of the research problem must include a clear **question,** a suggested **hypothesis,** supporting **evidence** (that is **types of sources with which to test and/or validate the hypothesis**), and the **conclusions** and **broader implications** of your research. It cannot simply present a description, like a book report. It should begin by asking a significant question, such as "Why did John F. Kennedy win the 1960 presidential election?" It should then present an answer to that question—an answer referred to as the "hypothesis," from the Greek word meaning "to suppose"—such as "John F. Kennedy won the election because of his superior performance in television debates." Next, it includes the evidence in favor of the hypothesis and shows logical flaws in alternative hypotheses. Finally, the conclusion of the study shows that you have considered the further ramifications of your hypothesis, in light of the evidence: "Kennedy won the election *principally* because of his television performance but *also* because of superior campaign polling—a dual emphasis that would reshape the nature of all subsequent US presidential campaigns."

When we refer to the conclusions you anticipate reaching, we mean the *broader implications* of your hypothesis, the "**so what**?" of your project's findings. We do not mean that, as in ordinary expository writing, you should merely reiterate your hypothesis to conclude your paper.

You do not, of course, actually have to present all of the evidence here (one paragraph or even two is far too short for that). You should, however, indicate what **kind** of evidence you intend to rely on and present an example or two to illustrate exactly how you expect the evidence to corroborate your hypothesis. In other words, the brief statement of the research problem should be like a road map, showing both where you intend to go and how you intend to get there.

Research Problem:

1. **Question** (*What is the question you seek to answer?*)

2. **Hypothesis** (*What is the tentative answer that your study will test?*)

3. **Evidence** (*What source material will you use to test your hypothesis?*)

4. **Conclusions and Broader Implications** (*What are the implications of your research for further study?*)

Since defining a suitable thesis subject is the hardest step in shaping a proposal, it is not surprising that this summary statement of the research gives ALM candidates the most difficulty and is most often sent back for revision. *A principal reason for this is that many students fail to understand that the research problem is not the same thing as a thesis topic.* Knowing how to select a problem that is both inherently interesting yet capable of being answered within limited space requires careful thought and experience. On a more practical level, the more well formulated and clearly focused your proposal, the better chance you have of finding a thesis director willing and even eager to work on it with you.

What do we mean by "research problem"? We mean that the thesis should make a clear point. And as we have seen, making a point, in turn, involves asking and answering a question. Furthermore, a research problem will suggest one or more subsequent questions to the skillful investigator.

Similarly, your research problem should raise a question for the reader. If you are not sure whether it does or not, try rephrasing the stated topic in question form. A student might wish to write about the use of the United Nations to solve world conflicts. Is this a research problem? No. You can, of course, make something of a question out of the topic by asking: "How is the United Nations used to solve world conflicts?" But this merely invites a description of the UN's role. A true problem would be: "What prevents the United Nations from being more effective in solving world conflicts?" Or, "Would the United Nations have contributed more to world peace if it had remained outside the conflict in Lebanon?" Each of those questions demands **an explanation,** not a description. There is no puzzle involved in asking what the UN does. At best, you would answer with a list of functions. A research problem never involves description alone.

The research problem must not only involve a question, but a **focused question.** Not every question is an appropriate one, because not every question can be answered within the time and page allotment or with the research materials readily available to ALM students. "Why did the American women's movement begin in the 1960s?" This question is too broad to permit a satisfactory answer. A better question would focus on a single person or issue: Betty Friedan, or the founding of NOW, or the starting of *Ms.* magazine.

A research problem must involve **original research**. The point of a thesis is not simply to put together the views of other people, in the form of a series of book reviews and article reviews—what someone aptly named "the book report approach." Although a legitimate stage in virtually everyone's research project, this method alone does not constitute true research. In addition, the project must show **independent thinking.** This is another reason to keep the question tightly focused—you cannot do original thinking on a subject if it has not yet been adequately defined.

Finally, a research problem involves not simply a tightly focused question and original research, but an **answer** to that question based on original thinking. You should try to make a well-reasoned point to **substantiate** the hypothesis advanced in your thesis.

It can be equally productive to look for evidence that **opposes** as well as supports your hypothesis and to deal with this information directly—e.g., conflicting critical interpretations of a complex novel, or government statistics that seem to contradict your own numerical data. If the hypothesis remains credible in the face of opposing evidence, you can defend your argument with perhaps even greater confidence and authority. Think of yourself not so much as a lawyer arguing a case as a judge evaluating the evidence on both sides of an issue in a trial. Through this kind of disinterested exploration of a question, the skilled researcher arrives at a position of relative certitude and is thus more likely to persuade the reader of the validity of his or her conclusions.

To recapitulate, an ALM thesis asks a question and answers it with a proposition or hypothesis supported by evidence, which may or may not include empirical research, but must include original thought. *What do we mean by "original thought"?* We do not mean that you must think of something that no one else has ever thought of before. We do mean that you should come up with a hypothesis and offer supporting evidence in the thesis that does not rely solely on the authority of others to support your point. You have not proved that the United States government should reduce its budget deficit simply because you can quote eminent professors who say that it should. You can **demonstrate** it only by bringing forward evidence and arguing the case on your own. Similarly, it is not enough to cite English critics who say that Robert Frost is a fine poet; you should be able to offer and comment on examples of Frost's verse and its unique linguistic or structural features in order to defend this point of view. The argument, in other words, involves an **interpretation** that is your explanation of why things are the way they are and offers evidence that you have gathered, the sum total of which makes a contribution to our knowledge and understanding of a particular subject.

In this context, candidates in all fields, especially in dramatic arts and visual arts, should understand the **research basis** of the ALM degree. While the independent project may include a creative element, or an analysis of certain works of art, it must be based upon a substantial research problem. The ALM degree is a liberal arts degree, not a professional degree that might allow more latitude for creative or applied components. The ALM thesis therefore must involve a research problem. The only exception to this rule is the final project in the literature and creative writing concentration.

Some appropriate research problems that include a creative contribution, actually proposed by present and former ALM candidates, are the following: the history of the staging difficulties of a particular play, with directions and justification for an original, revisionist staging; the identification of a particular technical problem in the history of photography, with original illustrative photographs; a *catalogue raisonné* of hitherto undescribed or uncatalogued *objets d'art*; a variorum edition or translation of a previously unedited or untranslated work, with appropriate commentary; a study of different styles of illustrations and their effectiveness as learning tools in science education, with original drawings.

3. Definition of Terms

In this section, all important terms and acronyms should be explained, especially those that may be ambiguous, not readily understood, or used in a special way. Examples include such terms as "romantic revolutionary," "embargo trope," "aggression," or "negative reinforcement." Often when you have worked closely with a topic for a while, it becomes difficult to believe that any terms could be ambiguous, since you think you have a clear idea in your own mind about what they should mean. If you are unsure which terms need definition, show your proposal to a friend unfamiliar with the topic or to your research advisor.

In the social, biological, and behavioral sciences it is especially important to establish operational definitions. "Crime," for example, might be defined by police reports, victim reports, vital statistics, arrest reports, self-reports,

or direct observation, or it might be defined as some composite measure of these instances. "Old age" would be defined as twelve years for dogs, but twelve days for the mayfly. How you define such operational terms will considerably affect the conclusions you reach in your thesis. Be sure also that you will be using these terms in a consistent fashion; the way you define "crime" in Chapter 1 of the thesis should be the way you still define it in Chapter 4, unless you have good and explicit reasons for not doing so.

4. Background of the Problem

The fourth section, the background of the problem, should explain the origins of the research question or problem, drawing on your preliminary reading. All cited materials should be presented with specific references, prepared according to one of the three methods shown later in this section of the Guide. In the background section, you should review what has been done already in this area of research and the way(s) in which the proposed project will differ from earlier work. You should show that you are familiar with the major current opinions or interpretations concerning the problem you have chosen so that you do not simply duplicate existing or outdated research.

The background section, usually several pages in length, must be directed specifically to the research problem and must indicate the carefully documented views of experts. The aim is not to provide simply a general overview of the topic or to present a string of references to others' works. Rather, it is to **demonstrate that a specific problem has been identified** and to **show its relationship to the research of other investigators.** If, for instance, you were writing about George Orwell, you should mention the work of his principal biographer, Bernard Crick, and show how your views about some aspect of Orwell's work differ from, corroborate, or extend Crick's views, as well as those of several other recent critics of the Orwellian texts on which you intend to write.

Longer than the statement of the research problem itself, this section must be well organized. Others' research should be considered in a systematic fashion, according to topic, date, perspective, or some other logical means. It cannot be an unorganized mass; it must have some obvious flow, a sense of continuity, and an overall theme or point(s). In order to write the thesis itself, you will have to impose order on large amounts of material. Here is your chance to show your research advisor—and ultimately your thesis director—that you have mastered the organizational skills required for the job.

Once you have established the focus of your own research *in relation to this prior scholarship*, one or more **detailed examples** should be presented that illustrate how your approach to the subject will illuminate it. These examples also demonstrate that you have begun to envision the kind of precise analysis expected in the thesis.

In the biological and behavioral sciences, this section uses current literature to demonstrate that your hypothesis is the most obvious next step in your field of inquiry. This part of your proposal is a robust section that will subsequently serve as the introduction to your thesis.

5. Research Methods

Depending upon the research problem, the two sections on methods and limitations might be combined. These parts of the proposal describe the procedures in the investigation, as well as their limitations. What kinds of materials will be used? Are they readily available? Can you read written materials if they are not in English? Are translations available? What kinds of difficulties will there be in sampling or collecting physical evidence? What standards of certainty can be expected? Is your sample size adequate? Will you need statistics? If so, which statistics? These are the issues you should address and answer here.

Especially for empirical research, you might wish to treat these sections separately, describing in detail the proposed subjects, apparatus, and procedures. Your proposal will be judged not only on the basis of its hypothesis but also on the proposed methods of data collection. Will you be using questionnaires? Observation?

If an original measuring device is to be used, a draft should be included, accompanied by a statement of the intended sampling procedure and a plan for establishing its reliability and validity. Note that you will also need a backup plan if the new measuring device does not prove to be a viable assessment. Once you have collected the data, how will you analyze it? You must explicitly show how the data collected will test the proposed hypothesis. Make sure you have thought out **all** the steps involved in your research before you begin.

6. Research Limitations

Without exception, all research is limited in several ways. There are internal or formal limitations, such as the materials and procedures used, the ways in which critical terms are defined, the scope of the problem explored and of the applicability of the results. There are external limitations as well, governed by constraints upon one's time or pocketbook; the inability to travel to special collections, museums, or libraries, or to speak or read other languages; or to consider an evolving political situation beyond a certain date. These limitations should be acknowledged; indeed, identifying them may help you to focus your topic. However, problems such as time and money difficulties do not relieve you of the responsibility of designing a study that can adequately test your hypothesis and measure its results. Proposals that include no mention of limitations suggest that the candidate has not really gone beyond a superficial consideration of the subject. This section of the proposal, therefore, will require considerable thought. But close attention now to these and related questions will save you much time and discomfort in later stages of research and writing.

7. Tentative Schedule

The schedule we are discussing here refers only to what happens **after** the proposal is submitted. Your tentative schedule should include the date of submission of the current proposal, the anticipated date of approval, the date you intend to submit a completed thesis, and the date you hope to graduate. **Be sure to allow enough time between these separate steps.** Many students submit an unrealistic timetable, which must then be completely revised.

In addition, **you should be aware that you will need to do considerable research before you even begin to draw up your research proposal.** How long it will take to decide on a topic and then to collect and read the articles and books required to prepare the proposal may vary, of course. But six months is a reasonable *minimum*. Many candidates take far longer. Thesis proposals do not come out of nowhere. They are typically the fruit of lengthy and patient efforts and a **substantial** amount of prior work, usually in consultation with the research advisor.

In general, approximately 75% of all the research that you will do must be completed before it will be possible to produce a sufficiently focused, detailed, and documented proposal. In fact, in the biological and behavioral sciences, the proposal will become the basis for the first and second chapters of your thesis and is expected to be written to the same standard.

Once you submit your proposal, **four to six weeks** are normally required for its evaluation by your research advisor, who will be simultaneously working on several other proposals—as many as two dozen in peak periods. Occasionally the research advisor may be able to read the proposal more rapidly; but your tentative schedule should allow for at least four weeks. *Students should not pressure the research advisor to rush their particular proposal along; the research advisor often works with as many as seventy-five candidates at a time, all of whom have an equal claim on his/her attention.* If the proposal needs revision, which is likely, you should allow for a second four-week period for the second reading after you have resubmitted the revised proposal, and so on. Allow for a reasonable amount of time to undertake your revisions as well, for you may need to undertake several more weeks of research before you will be ready to submit the next draft. *On average, three drafts of the proposal are usually required before an approval is forthcoming.*

After final approval has been obtained, the candidate and the research advisor will work together to recruit a suitable faculty thesis director. **Under no circumstances should candidates approach a professor about becoming their thesis director. Premature discussions of a proposed research project with a faculty member may also inadvertently jeopardize the candidate's opportunity to work with that person later on.** Locating a suitable faculty member is a process that may go quickly; but *most often it too takes at least four to six weeks.* If your proposal is approved during the summer, you may have to wait even longer, for many faculty are away from the university during this period. You should therefore be prepared for some time to elapse between the approval of the thesis proposal and the assigning of a director. You may, of course, begin work on an outline of the proposed thesis or a single chapter in the interim. It is frequently desirable to do so in order not to lose the momentum you have gained while researching and crafting the proposal. **Students should not, however, write the entire thesis before a director is found.** Most faculty members expect to assist the student in mapping out the design of the overall work and may take umbrage at the implication that their input is superfluous.

Once the proposal has received final approval and the thesis director has agreed to serve, Extension policy dictates that the candidate's thesis must be completed, read, and evaluated by the thesis director within a period of **nine months**. The tentative schedule should reflect this requirement. In exceptional circumstances, a short extension may be granted after petition by the student, but extensions are rare and are certainly not given automatically. When planning a date for graduation, the student should expect to complete the entire thesis, including approval of the final format by the research advisor and approval of the content by the thesis director, **six weeks** in advance of the graduation date.

There are three possible dates for graduation during the academic year. Those dates, and the time by which the thesis must be completed for graduation on those dates, are as follows:

For graduation in:	Thesis completed by:	Bound copy due:
May November March	April 1 September 15 January 15	May 15 November 1 March 1

> **Nota Bene**: Please note that if you hope to graduate in May, you should have your proposal **approved, at the very latest, by October 1**, six months before the thesis is due on April 1. Since it may take four weeks for the proposal to be read, the *revised or final draft* of the proposal should therefore be submitted **not later than September 1.** Students who submit proposals after that date cannot be assured of graduating in May and should alter their expectations accordingly. **Neither the ALM office nor the thesis director should be asked to rush a student's work along to compensate for a late start.**

8. Working Bibliography

The working bibliography should be selective. It should not simply include all the materials that **might** conceivably be used in the finished research. Rather, it should demonstrate that you have actually read the sources you cite, know which further sources you will need to consult, and why. The bibliography, in other words, represents an interim tally of your progress.

The working bibliography should include **most** of the materials that will actually be used in the finished research project. It should list under separate rubrics all works cited in the proposal (**Works Cited**); all works consulted

in preparation of the proposal (**Works Consulted**); and all works that the student intends to consult in further research and writing (**Works to Be Consulted**). Sources within these various rubrics can be further divided into *primary* and *secondary* works, or according to the various *media* they represent (books, journals, recordings, interviews, on-line databases), if you wish to do so. In the biological and behavioral sciences, sources must be listed alphabetically by author as in an APA style reference list. Titles listed under one rubric should not be repeated in another. Sources included under Works Consulted should be accompanied by a **brief description** of the work's contents and value for the investigation—the so-called "**annotated bibliography,**" formatted thus:

Art History and Its Methods: A Critical Anthology. Selection and commentary by Eric Fernie. London: Phaidon Press, 1996. An exceptional collection of essays presenting chronologically the range of art history methods from antiquity to the present.

Burgin, Victor. *The End of Art Theory: Criticism and Postmodernity*. Atlantic Highlands, NJ: Humanities Press International, Inc., 1988. Argues that traditional "art theory," dating from the Enlightenment through Modernism, has now been supplanted by the general postmodern goal of understanding how symbolic expression represents diverse forms of sociality and subjectivity.

In the past, some students have tried to satisfy the requirement for a working bibliography by simply appending a printout of titles generated by a computer search in the area of their topic. **This is not acceptable.** Students should not haphazardly compile a lengthy but meaningless bibliography. The bibliography should represent actual work done, and it should reflect an organized approach to the research problem. Thus it will assist the research advisor in assessing the nature and direction of the student's research and will facilitate suggestions for additional reading by the thesis director.

The working bibliography should be prepared in the precise form required for the finished thesis. All entries should be complete. All humanities students should use the MLA style. All social science students in the fields of history, government, international relations, and history of science, technology, and medicine should use the *Chicago Manual of Style*. All students in the biological and behavioral sciences should use the APA style. The three styles are described in detail below.

9. *Additional Sections*

You may feel that the proposal requires additional sections in order to explain your research fully. In the biological, behavioral, and social sciences, you might wish to include a description of the pilot study and proposed data treatment. In the humanities, the proposal also may include a tentative outline of the proposed chapters of the thesis, a chronological list of the works published by the novelist on whom you will focus, or a discussion of alternate approaches to the research problem. You should feel free to add whatever supplementary sections you deem essential. The one rule you should respect is that of brevity: do not pad the proposal with extraneous charts or long digressions simply to lend it an imposing bulk. Good research is clear and concise.

The Literature and Creative Writing Proposal

The literature and creative writing proposal should consist of two parts: **a critical essay** that considers the work of other writers and **a description of the original fiction** you are developing for the thesis. In the first part, the critical essay, you are asked to think about positioning your own work within the larger context of past literary achievements and especially the writers from whom you have learned—those who have influenced your work in demonstrable ways. It is an opportunity to consider in a very self-conscious way the issues with which your own fiction is concerned (whether a theme, a subject, a setting, a world-view, a way of manipulating time or point-of-view, the use of metaphor and symbol), and to discuss the techniques of other writers who have pointed the way for you. Some secondary sources should be consulted on these writers, although this isn't a "research paper"

per se; but since other critics have addressed some of the issues that are central to each writer's work (and by extension, to your own), it is helpful to gain some exposure to the way in which that work has been described and discussed by others, since this will give you a more sophisticated critical vocabulary—and perhaps even some interesting categories—to employ in your own discussion.

The second part of the proposal is a description and brief discussion of the original stories or novel you intend to present as part of your thesis. Collectively, the proposal should total fifteen to eighteen pages and include a bibliography and internal citations, formatted in accordance with the *MLA Handbook*. Some of the proposal sections that pertain to the other ALM concentrations are not relevant to the literature and creative writing theses such as Definition of Terms or Research Methods and Limitations. You will work with your research advisor, Dean Sue Weaver Schopf, in the development of the proposal. Once she has approved the proposal, you will then discuss your work with Dr. Pat Bellanca, Director of Writing Programs, who will consult with Dr. Gretchen Mazur about whether your creative work is yet mature enough to proceed to the thesis stage. Only when both of these parts are approved will you then be assigned a thesis director by Dr. Bellanca and allowed to enroll in the thesis course.

Revisions and Writing Style

It usually happens that the first draft of your proposal is not acceptable. As stated before, on average, three attempts are necessary, each of which will require four weeks for evaluation by the research advisor in your field, before the proposal is approved and the search for a thesis director can begin.

What are the most common reasons for which first proposals are sent back for further work? **THE MOST FREQUENT SINGLE REASON IS THE FAILURE TO ADEQUATELY FOCUS THE TOPIC.** This point cannot be stressed too strongly. What is meant by "adequately focus"? Perhaps it is easiest to answer this question by pointing to topics that would be considered inadequately focused.

A topic lacks focus if:

- **It deals with a complex issue studied over an entire century or more**, e.g., "Anglo-American diplomacy from 1880 to 1980" instead of "Anglo-American diplomacy from 1880 to 1890."

- **It deals with the complete works of a prolific author**, e.g., "The novels of Henry James" rather than *The Golden Bowl* and *The Ambassadors.*

- **It focuses on general rather than on specific problems**, e.g., "Urban housing" instead of "The Pierce Housing Estate."

- **It asks no question or presents no hypothesis**, e.g., "The marsupials of modern Australia" rather than "Can the marsupials of modern Australia compete successfully with eutherian mammals?"

Another reason for rejecting research proposals is that the student has not determined how the principal question can be answered or the hypothesis tested. Suppose that you have decided to investigate why the quality of secondary education in American inner cities is lower than that in more affluent suburbs. Further suppose that your hypothesis is that educational quality is directly related to the amount of money spent per pupil. How will you measure educational quality in testing this hypothesis? By comparing grades of inner city and suburban high school students? Or would you need a standardized test like the SAT? Does that test seem too culturally biased? For your proposal to be accepted, you would need to select one or more methods for testing your hypothesis and provide a defense for them. Some questions are virtually unanswerable and should therefore be eliminated, e.g., "How did Coleridge's opium addiction influence the imagery in his poem 'Kubla Khan'?" or "Would the US have become involved in the Vietnam War if JFK had lived?"

A final reason for rejection is that the proposal lacks the proper format or consistently demonstrates sub-standard usage of English. Be sure that **all** the sections required by the Guide have been included in the proposal and that your spelling, grammar, usage, and typing are accurate. Since the ALM is both a graduate degree and the highest academic degree awarded in Extension, standards for English usage are correspondingly strict. Non-native English speakers may need to allot extra time for the preparation of the research proposal in order to ensure that their language use meets ALM standards.

The writing style in all instances must follow the guidelines established in standard writing handbooks and must be at the same level expected in the final thesis. Acceptance of the proposal will depend at least in part on the adequacy of the presentation. Correct grammar, spelling, format, citations, and a meticulously proofread text are essential. **The pages of the proposal must be numbered.**

Some students assume that because the research proposal is only a first step in the thesis process, form does not count. This assumption is a mistake. It is the overall presentation of the proposal—i.e., its content and its form—that will determine whether a professor will consent to become your thesis director.

As a rule, use the first-person singular ("I") sparingly in the proposal and in the final thesis. Parentheses and successive one-sentence paragraphs should also be used only with discretion. Examine lengthy paragraphs carefully for coherence and economy, making sure that each paragraph conveys a separate, unambiguous point. Avoid using the passive voice, which leads to dull and soporific writing (e.g., "it has been argued," "these points were mentioned," "the paintings were viewed").

Unless the author of a particular work is a highly significant figure, references to that work should emphasize the topic of inquiry, not the author's name or the title of the work. Do not simply refer to the "Smith thesis"; tell us what Smith's thesis is. In other words, do not indulge in scholarly name-dropping. Demonstrate that you have read and understood the work in question by referring to its substance rather than its form.

Also, in a scholarly thesis based upon careful research, certain types of expressions should be avoided, like "the ineffectual Carter administration" or "the US foreign policy debacles." They are emotionally toned; the thesis becomes a polemic or a diatribe, and the research thereby becomes less convincing. Persuasion should be achieved with evidence and a careful, reasoned interpretation, not through force of rhetoric or the use of exclamation points. Polemical language belongs on the op-ed page of a newspaper or in the halls of Congress, but not in the ALM thesis. Its presence there can only detract from the seriousness of your presentation and prejudice the reader against your point of view.

Some of the most common mistakes in grammar, punctuation, and usage made by ALM students are listed in Appendix 4. Additional help is available through the Writing Center in the Extension School. Students are advised as well to consult the bibliography in Appendix 5.

Guidelines for Bibliography and Notes

As stated above, there are **three** different and distinct methods for notes and bibliography that may be used in the ALM thesis, depending on the candidate's field. All candidates **must** use one or the other in writing both the research proposal and the final thesis. (The only exception to this rule is a case in which the student and thesis director, in consultation with the research advisor, decide to prepare the thesis for publication in a journal that uses a particular notational style.) For the sake of convenience we will refer to them as the American Psychological Association (**APA**) method, the Modern Language Association (**MLA**) method, and the Chicago Manual of Style (**CMS**) method. Those degree candidates writing theses in biology, anthropology and archaeology, or psychology should use the APA method; those writing a thesis in all fields of the humanities should use the MLA method. Those in the social sciences fields of government, history, international relations,

and history of science, technology, and medicine should use the CMS method. Concentrators in Medieval and Middle Eastern studies, depending on whether they are focused in the humanities or the social sciences, may use either the MLA or the CMS method. The differences among these methods are explained and illustrated below. **Students must obtain the most current edition of these guides since each is subtly different from its predecessor;** *forms that were acceptable five years ago are not likely to be acceptable at the present time.*

> **Nota Bene**: Please note that when we refer students to the APA, MLA, and CMS handbooks, we do so **only** with reference to their advice on **mechanics** and their methods for **documenting sources** (i.e., notes and bibliography). For all other issues concerning content and format of both the proposal and the thesis, students must follow the guidelines specified in *A Guide to the ALM Thesis*, 7th edition.

Bibliography

The APA, MLA, and CMS methods all require that books, articles, and other materials to appear in the bibliography be cited alphabetically according to the author's last name. Where there is more than one author of a work, it is the **first** author's last name that determines where the entry appears. The order and the form of the information that follows the authors' names vary among the three systems, however, as the sample entries on the following page illustrate. In general, book and journal titles that were once underlined are now *italicized*.

Notice as well that the first line of each entry occurs flush with the left margin; the *second line* of an entry is *indented ½ inch.*

APA

Note that in the APA method, the author's last name only is spelled out in full; first and middle names are given as initials. The publication date follows in parentheses. In the title of an article or a book, only the first letter and proper nouns are capitalized. The title of the journal itself follows the usual rules of capitalization. The place of publication comes next but is not included for articles in APA format. In the case of a journal article, the volume number and the page numbers occur at the end of the entry.

Notes

There are no endnotes or footnotes as such in the APA method; instead, one uses citations made in brief form directly in the text. This brevity constitutes one of the major advantages of the APA approach to documentation. After each citation, the author's last name and the date of the publication are included. Thus the citation for the first work mentioned on page 47 would read: (Geertz, 1973).

In the APA method, when two or more works by different authors are cited within the same parentheses, all with reference to the same topic or point in the text, then they should be separated by semicolons (Able, 1980; Baker, 1982; Charlie, 1984). When there are two or more authors of the same work, an ampersand ("&") is used before the name of the last author (Red & Green, 1981; Blue, Brown, & Purple, 1985). After the first citation for three or more authors, in subsequent citations use only the name of the **first** author followed by "et al." (for the Latin *et alii*, meaning "and others") without underlining, and with no period after "et," followed by the year (Blue et al., 1985). For all citations, as demonstrated in the prior examples, the final punctuation appears **outside** the parentheses. For publications with six or more authors, cite only the first author followed by "et al." (Note: "et al." has a period after "al." only.)

If the same author has published more than once in a single year, the date is followed by a lower-case "a," "b," and so forth. Thus if Professor Newsome had published two articles in 1965, and both were to be cited in the bibliography and within the text, we would have (Newsome, 1965a) and (Newsome, 1965b). If both articles appear in the same parentheses, they are separated by commas (Newsome, 1965a, 1965b). Answers to further questions about APA form can be found in the sixth edition of the *APA Publication Manual* (2010), on reserve in Grossman Library.

Bibliography

Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.

Newsome, A. E. (1965). The abundance of red kangaroos in central Australia. *Australian Journal of Zoology*, 13, 269-287.

La Greca, A.M., & Spetter, D.S. (1992). Psychosocial aspects of childhood diabetes: A multivariate framework. In N. Schneiderman, P. McCabe, & A. Baum (Eds.), *Stress and disease processes: Perspectives in behavioral medicine* (pp. 17–43). Hillsdale, NJ: Earlbaum.

Chamberlin, J., Novotney, A., Packard, E., & Price, M. (2008, May). Enhancing worker well-being: Occupational health psychologists convene to share their research on work, stress, and health. *Monitor on Psychology, 39*(5), 26-29.

MLA

In the *MLA Handbook* (7th edition), footnotes and endnotes are no longer used to document sources referenced in the text. Instead, similar to the APA method, sources are cited parenthetically in the text and keyed to an alphabetical list of works that appear in the bibliography. The citation in the following example is typical of the MLA style:

An entire subgenre of Dutch still life paintings in the 17th century celebrates the sensuous and social pleasures

of tobacco smoking (Schama 195).

The parenthetical citation above tells readers that the information contained in the sentence derives from a work by Schama on page 195. If they turn to the bibliography, under the name "Schama" they will find the following work listed:

Schama, Simon. *The Embarrassment of Riches: An Interpretation of Dutch Culture in the Golden Age*. New York: Alfred A. Knopf, Inc., 1987. Print.

MLA-style citations should contain only enough information to enable readers to locate the source in the bibliography, and they should occur ideally at the end of a sentence. Keep parenthetical references as brief—and as few—as clarity and accuracy permit to avoid interrupting the flow of your writing.

If the author's name is mentioned in the text, only the page number appears in parentheses:

In his study of 17th-century Dutch culture, Simon Schama notes that an entire subgenre of still life

paintings celebrates the sensuous and social pleasures of tobacco smoking (195).

If the author has written more than one work listed in the bibliography, then the parenthetical citation should include a shortened version of the title: (Schama, *Embarrassment* 175).

Notes

However, footnotes or endnotes **can** be used in conjunction with parenthetical citations for two purposes: (1) to present additional content, commentary, explanation, or information; (2) to supply bibliographic notes containing a group of sources or evaluative comments on sources.

[1]The places described in this poem are now a living museum called *Esquina Homero Manzi*: a theater/café in the heart of Buenos Aires dedicated to the memory of Homero Manzi.

[2]See Augustine; Flannagan; Costello–Sullivan; Belanger, for arguments of this kind.

Bibliography

In the MLA method, names are spelled out as they appear on the flyleaf of the book, in reverse order. Upper-case is used for all letters normally capitalized in a title, followed by the place of publication. The date appears last. Journal articles are cited with the volume number followed by the year in parentheses, then the page numbers and the medium of publication consulted.

Geertz, Clifford. *The Interpretation of Cultures*. New York: Basic, 1973. Print.

Newsome, Alan E. "The Abundance of Red Kangaroos in Central Australia." *Australian Journal of Zoology* 13 (1965): 269–287. Print.

Thoreau, Henry David. "A Natural History of Massachusetts." *The Portable Thoreau*. Ed. Carl Bode. New York: Viking, 1964. 150-215. Print.

Electronic sources exist in many forms, but one common example is the online scholarly journal, the citation of which includes the name of the author, title of the article, name of the journal with the volume number and year, followed by "n.pag." (since web publications are often unpaginated). Next occur the medium of publication and the date of access (day, month, year), as in the following example:

Landauer, Michelle. "Images of Virtue: Reading , Reformation, and the Visualization of Culture in Rousseau's *La Nouvelle Héloïse*." *Romanticism on the Net* 46 (2007): n.pag. Web. 8 Nov. 2007.

CMS

The *Chicago Manual of Style* **(16th edition) presents several acceptable ways of documenting sources within the text, including the use of parenthetical citations that refer to items listed in the bibliography. For purposes of the ALM thesis, however, students in the social sciences fields of history, government, international relations, and history of science, technology, and medicine should plan to use endnotes or footnotes for documentation.**

Notes

Endnotes are a collective list of all the notes, which always precede the bibliography. **Footnotes** occur at the bottom of each page on which a reference occurs, and now—thanks to word processors—they are relatively

easy to format. All notes are numbered **consecutively** and, when first cited, contain all the information of the bibliographical entry—author, title, and in parentheses, place of publication, publisher, and date—plus the page number of the citation. *Unlike entries in a bibliography, notes do not invert first name and last name.* The author's name is given in a normal fashion, since notes are not alphabetized. Each citation should end with a period.

Please observe that, for purposes of economy in the ALM proposal and thesis, we ask that both bibliography and notes be formatted thus: single-spacing within entries and double-spacing between entries. The citations for the four works mentioned above, following CMS method, would thus read:

> [1]Clifford Geertz, *The Interpretation of Cultures* (New York: Basic, 1973), 17.

> [2]Henry David Thoreau, "A Natural History of Massachusetts," *The Portable Thoreau,* ed. Carl Bode (New York: Viking, 1964), 83.

> [3]Alan E. Newsome, "The Abundance of Red Kangaroos in Central Australia," *Australian Journal of Zoology* 13 (1965): 270.

> [4] Michelle Landauer, "Images of Virtue: Reading , Reformation, and the Visualization of Culture in Rousseau's *La Nouvelle Héloïse." Romanticism on the Net* 46 (2007): n.pag. Accessed November 8, 2010. doi:10.1086/589754. [A DOI (Digital Object Identifier) is preferable to a URL.]

Journal citations (as in example number 3 above) contain a volume number that precedes the date (or month plus date) in parentheses. Page citations do **not** include a "page" or "p." or "pp.," but are given as the page number(s) alone. Thus a quotation from Newsome's article is cited as "*Australian Journal of Zoology* 13 (1965): 270." Notice that here the *first line* of each entry is *indented ½ inch* before typing the superscripted number; the second line of the entry occurs flush with the left margin.

After the initial complete citation of a work, CMS-style notes can be reduced in length. In the second and subsequent citations of each work, it is customary to cite simply the author's name plus the page number. Thus if note two were also a reference to Geertz's book, the entry would read:

> [2]Geertz, *Interpretation*, 19.

Sometimes it may be necessary to quote multiple times from works of particular importance to your study (such as one or more novels, a collection of letters, the work of a historian whose theories you are opposing). In such cases, it may be more economical (and will certainly reduce the number of interruptions experienced by the reader) to cite the work fully in an endnote or footnote **the first time** you quote from it; then, at the end of the note, add a statement such as, "Hereafter cited parenthetically in the text"; or in the case of multiple citations of a work you wish to abbreviate (such as *The Adventures of Huckleberry Finn*), "Hereafter cited parenthetically in the text as *HF*." From that point on, when this work is quoted, a brief citation in the text—often simply a page number—will suffice.

The general rule to follow in notes is that they are designed to allow the reader to find the source of the quotation **easily**. So the notes' greatest virtue is clarity and consistency.

The CMS system provides for many other possibilities in citing references. Although it is impossible to anticipate all potential situations, here are some of the most frequently encountered, showing the different forms required for bibliography and notes:

Bibliography/Notes

Sample entry for a journal:

Bibliography:

Della Terza, Dante. "Italian Fiction from Pavese to Pratolini, 1950-1960." *Italian Quarterly*, 3, no. 1 (Fall 1959): 29-45.

Note:

[1]Dante Della Terza, "Italian Fiction from Pavese to Pratolini, l950-1960," *Italian Quarterly*, 3, no. 1 (Fall 1959): 37.

Sample entry for a newspaper:

Bibliography:

Wilson, James. "Tragedy in the Falklands." *New York Times*, April 18, 1987.

Note:

[1]James Wilson, "Tragedy in the Falklands," *New York Times*, April 18, 1987, A4.

Sample entry for a book with two authors:

Bibliography:

Douglass, Joseph D., Jr., and Amoretta M. Hoeber. *Soviet Strategy for Nuclear War.* Stanford: Hoover Institution, l979.

[Note that only the first author's name appears with the last name first; the second (and others in multiple-author books) appears in normal form, with the last name last.]

Note:

[1]Joseph D. Douglass, Jr., and Amoretta M. Hoeber, *Soviet Strategy for Nuclear War* (Stanford: Hoover Institution, l979), 29.

Sample entry for one volume of a multi-volume set:

Bibliography:

Keynes, John Maynard. *The Economic Consequences of the Peace.* Vol. 2 of *The Collected Writings of John Maynard Keynes*. London: Macmillan, 1971.

or

Keynes, John Maynard. *The Collected Writings of John Maynard Keynes.* Vol. 2, *The Economic Consequences of the Peace*. London: Macmillan, 1971.

Note:

[1]John Maynard Keynes, *The Collected Writings of John Maynard Keynes* (London: Macmillan, 1971), 2:45.

Sample entry for a series with all volumes published in the same year:

Bibliography:

Byrne, Muriel St. Clare, ed. *The Lisle Letters*. 6 vols. Chicago: University of Chicago Press, 1981.

Note:

[1]Muriel St. Clare Byrne, ed., *The Lisle Letters* (Chicago: University of Chicago Press, 1981), 4:243.

Sample entry for a series with volumes published in different years:

Bibliography:

The Complete Tales of Henry James. Edited by Leon Edel. 12 vols. London: Rupert Hart–Davis, 1962–64.

Note:

[1]*The Complete Tales of Henry James*, ed. Leon Edel, vol. 5, *1883-1884* (London: Rupert Hart–Davis, 1963), 32–33.

Chapter 4
The ALM Thesis

After the data have been collected and analyzed, the investigator is at last ready to write the thesis. William James has some excellent advice: "Draft in haste; revise at leisure" (1890). Prepare a broad first effort as quickly and efficiently as possible, with the understanding that successful writing inevitably requires multiple revisions.

Style of the Thesis

Any successful thesis will appear in a consistent and recognizable style. The reasons are obvious. Interested readers will be able to examine it efficiently and will be stimulated to learn more about the subject. Also, they will be able to find the resources, allowing them to think for themselves about these materials.

Content and Organization

At the end of the research process, the investigator is usually confronted with a wealth of information. The most difficult and often the most satisfying part of the process is about to begin or to begin anew: the organization of these materials.

Many writers want to use almost all these materials in the first draft of the thesis, and many thesis directors agree that this approach is reasonable. Including as much as possible in the first draft allows the writer to organize all the material in some preliminary way. Further, these data are less likely to be lost if they are included in a draft. Each piece of research material, of course, should be documented completely when it first appears.

Beginning researchers should realize that they probably will not use all the information they have accumulated. As draft succeeds draft, materials will be deleted, rearranged, or added—a normal part of any writing process. It is useful, however, to **keep copies of earlier drafts**, for they then can be compared and information in them retrieved easily. You might consider keeping drafts as separate documents or files so that you can subsequently "cut and paste" from one draft to another.

Throughout the process—from the moment you begin to consider a research problem to the time of the first draft of a thesis—some rough organizational scheme guides both the research and the writing. As the work continues, this scheme inevitably becomes more coherent, more logical, more orderly. The data, interesting in isolation, only become fully significant when their arrangement reveals something about the hypothesis that prompted the research initially. Henry David Thoreau's wry comment distinguishing between the two is worth recording: "Let us not underrate the value of a fact; it will one day flower in a truth" (1842).

A research advisor of a most ambitious thesis project remarked: "The main weakness of the piece is that it lacks a general framework." This framework, he emphasized, would have facilitated comparisons among various data and perspectives. Many writers feel that the **preparation of an outline** is of great help. Often they prepare an outline before they begin to write, and they use it as a way of keeping track of their use of research data. In fact, your thesis director may first wish to see an outline of the entire thesis, as you envision it, before you begin to submit whole chapters.

An outline can be used in another way. After a first draft, many writers make an outline based strictly on the thesis itself. This outline is often a sentence outline—a one-sentence summary of each paragraph. It helps the writer recognize a paragraph that is too long, too full of information, or out of place. If it is difficult or impossible to summarize a paragraph in one sentence, divide the material into two or more paragraphs. In addition, the sentence outline helps the writer gain a quick overview of the entire thesis. Material that appears in several

places is easily identified and consolidated. Work to strengthen your argument and to sharpen your introduction and conclusion. The organization of a thesis, as revealed through the outline, is always subject to revision.

Mechanics of Writing

Once the first drafts have been completed, the writer can turn to the mechanical details of grammar, spelling, and punctuation, and to the more subtle questions of prose style. *The Elements of Style* by William Strunk and E. B. White, the MLA's *Line by Line: How to Edit Your Own Writing* by Claire Kehrwald Cook, and the APA publications are useful here. These and other basic guides to writing style are listed in the appendix at the back of this Guide. Students should carefully review the rules governing the use of basic marks of punctuation, the more specialized elements such as hyphens, italics, parentheses, brackets, and ellipses, and the mechanics of long and short quotations from poetry, prose, and drama.

As with the research proposal, good English is essential in the final thesis. Errors in language, spelling, or usage quickly destroy a reader's confidence. The writer is urged to check these elements of style meticulously at all times. Theses have been rejected in the past in part because their authors clearly had not achieved an appropriate standard of grammatical and spelling accuracy. It is as much your responsibility to write carefully as to research accurately. Non-native English speakers should be especially careful in crafting their written work, and consider having their drafts reviewed by a native speaker if they feel the need for some assistance. Most word processors now have spell-checks and grammar-checks that can aid writers in achieving correctness in their work. Candidates are also cautioned to use nondiscriminatory, nonsexist language in their writing (Appendix 4, "Nonsexist Language").

Periodicals in the field can be efficient guides for content, organization, and style. The ALM candidate is encouraged to consult these journals in the preparation of the final thesis and to discuss these matters with the thesis director. The tone or style in a professional publication, however, which derives from certain assumptions about the reader, is not necessarily appropriate for the ALM thesis. A student intending to submit the thesis for publication in a professional journal may, with the permission of the research advisor and thesis director, prepare the thesis in a particular journal style. In this case, on an extra page preceding all front matter including the title page, the following should be stated and presented as shown here:

The style and format of this thesis follow the standards in *Title of Journal*,

to which this work is being submitted for publication.

> In no event may a thesis be presented for the ALM degree that has already been published or submitted toward any degree, either at Harvard or elsewhere, in substantially the same form and content.

Citations, Notes, and Bibliography

As stated in the previous chapter, there are three different and distinct methods for citations, notes, and bibliography that may be used in the ALM thesis, depending on the candidate's field. All candidates must use one or the other in writing both the research proposal and the final thesis. In Chapter 3 we referred to them as the American Psychological Association (APA) method, the Modern Language Association (MLA) method, and the Chicago Manual of Style (CMS) method. Candidates in the biological and behavioral sciences use the APA method. Those in all fields of the humanities should use the MLA method. Candidates in the fields of

government, international relations, history, and history of science, technology, and medicine should use the CMS method. Those writing a thesis in one of the interdisciplinary fields, such as Medieval or Middle Eastern studies, depending on whether they are in the social sciences or humanities, should use either the CMS or MLA method. The differences among the three methods are explained and illustrated in Chapter 3.

> **Note:** The MLA, CMS, and APA handbooks should be used as a guide only to mechanics and documenting sources. *A Guide to the ALM Thesis* must be followed in all other matters pertaining to the formatting of the thesis.

Copies of the *MLA Handbook,* the *Chicago Manual of Style,* and the *Publication Manual of the APA* are available in most Harvard Square bookstores and are on reserve in Grossman Library. They also can be ordered directly from the publishers (and from amazon.com or barnesandnoble.com):

Modern Language Association of America
26 Broadway, 3rd Floor
New York, NY 10004-1789
www.mla.org

American Psychological Association
750 First Street NE
Washington, DC 20002-4242
www.apa.org

The Chicago Manual of Style
The University of Chicago Press
1427 East 60th Street
Chicago, IL 60637
www.press.uchicago.edu/press/contact.html

There are specific guides for most of the major fields. The writer is advised to consult these sources. The address of the national headquarters for any major discipline can be obtained from a reference librarian, and some of these publications are available in the Grossman Library.

> **Note:** ALM candidates are expected to be thoroughly familiar with all University Extension regulations involving plagiarism, the proper use of sources, and the preparation of academic papers. These regulations are described on the Extension School website under the section entitled "Academic Policy." Students should also consult the Harvard publication *Harvard Guide to Using Sources*, available free online at http://usingsources.fas.harvard.edu/icb/icb.do.

Structure and Format of the Thesis in the Biological and Behavioral Sciences

Theses in the biological and behavioral sciences are generally organized similarly to the sections in an empirical research report. There are *four standard sections*, and these are the only chapters to be included unless the thesis director requests otherwise. **Chapter I** is called **Introduction**. The aim of this chapter is to show how your hypothesis relates to the current research in your field. It contains the literature review and the justification for the hypothesis. Most often, this section is the background section from the proposal. However, an alteration and/or an elaboration of your background may be required.

Chapter II is the research method; in the behavioral sciences it is called **Method** and in biological sciences **Materials and Methods**. For the behavioral sciences, Chapter II outlines exactly what was done and is broken into the sections called Participants, Measures, and Procedures per APA format. For the biological sciences, this chapter may be broken down into subheadings reflecting the experiments done. This chapter is also largely based on the proposal, with everything now in the past tense because you already completed the investigation.

Chapter III is called **Results**. This is where you report the results of your experiment or investigation. The data are presented, and any statistical analyses are reported. There is no conceptual or theoretical analysis or interpretation here, and this chapter may be very short. First, describe the actual population or sample, be it a cell line, a kindergarten classroom, or all of the fruit flies in a specific location. Be as specific as possible. Second, provide the relevant descriptive statistics before moving on to the hypothesis testing. For the behavioral sciences, please follow APA conventions for data that are in the text versus in a table and the correct way to report each statistic.

Chapter IV is called **Discussion**, and this is where you discuss the meaning of your findings. Begin by reiterating your hypothesis and briefly stating your supportive argument. You must explicitly state whether or not your predictions were supported by the data, and then place the results back in context. What new questions are raised? What are the conclusions one might draw? What about the limitations and future directions? This chapter closes with a conclusion, both about your findings and about your field of inquiry.

The difference between a thesis and a research report in a professional journal is the level of detail provided. Chapters I and IV are both longer in the thesis and are able to provide more exhaustive coverage of the topic. In an article, there might be four or five background sources. In your thesis you are expected to include all of the major sources. In an article, you might highlight one finding, but in the thesis, you describe every statistical test that was done. When organized in this manner, taking all of your results and producing a finished thesis is relatively straightforward, and most faculty members will be familiar with this organizational style.

The Literature and Creative Writing Thesis

The literature and creative writing thesis will consist of *two parts*. **The critical essay** contextualizing the creative work should be expanded to 25 pages or so. **The creative work** should be a minimum of 50 pages in length. Only your thesis director will read the thesis and decide when it is finished and ready to be given a grade. Once he or she has done so, you must submit the completed, correctly formatted thesis to Dean Sue Weaver Schopf for format review. It is a good idea to look at some of the past theses on file in Grossman Library before beginning this process.

Preparation of the Manuscript

The early drafts have been completed. Now the thesis is approaching its final form. The following comments are basic guidelines; in cases of ambiguity the final arbiter should be the thesis director in matters of content and the research advisor in matters of format.

NOTE: The title should be as concise as possible.

Margins and Pagination

The **left-hand margin** should be **1 ½ inches throughout** to accommodate the binding. The **top, bottom, and right-hand margins** should be **one inch**, with one important exception: **On pages with new chapter headings or other major headings** (such as front and end matter) **the top margin is 1 ½ inches from the top of the page.**

> NOTE: The easiest way to achieve this 1 ½ inch top margin is to (1) simply put your cursor at the top of the page, (2) hit the button for center justification, (3) set your format to double spacing, (4) set your format to 1 inch top margin, (5) hit enter once, and (6) start typing your chapter heading (i.e., Chapter 1 or Bibliography or whatever). For most fonts, this simple double spacing will achieve a 1 ½ inch top margin for this page. However, you should measure it with a ruler, just to be sure.

The right margin of the text should **not** be justified, unless your formatting program and printer have proportional spacing. Otherwise, a ragged-right margin is preferred.

Page numbers can be **centered at top or bottom, ½ inch from the edge, or placed in the upper right-hand corner, ½ inch from the top and right edge**. Whatever the format, the placement of the page numbers must be consistent throughout. It is customary to **omit** the page number from a page containing a new chapter heading; however, the number may be **centered at the bottom of the page** (½ inch from the edge), if the student wishes to retain the page number. If using **footnotes** in the thesis, page numbers should be **centered at the top** or **placed in the upper right-hand corner**, rather than at the bottom of the page where they might interfere with the spacing of the footnotes. *The first page of the text of the thesis is always page one.* All pages must contain text or images, except for the single blank page between the title page and the abstract.

> **Your thesis will be double spaced throughout**, except for long quotations and references, which are single-spaced (see "Text of the Thesis" below). When we refer to headings with **quadruple spacing** after the title, we mean *two* of your double spaced lines. Simply hit return twice. If the instructions are to double space after a heading, before beginning a text, we mean hit return *once*.

Front Matter

The materials preceding the text, such as the **title page, abstract, acknowledgments, and table of contents**, are collectively known as the **front matter**. There are precise requirements for the format and sequence of the front matter in theses. With the exception of the title page and blank page, **all headings for these pages must be formatted in a consistent manner, with each occurring 1½ inches from the top of the page.**

After each heading, quadruple space (i.e., double space twice) and start your text.

The manuscript begins with a **title page**, followed by a **blank page** (also known as the **copyright page**), and then the **abstract page**, on which appears a summary of the whole thesis. **These first three pages are unnumbered** but counted in the pagination. Thus, in the following order and on separate pages, there appear:

1.	title page	6.	optional dedication
2.	blank page	7.	optional acknowledgments
3.	abstract	8.	table of contents
4.	optional frontispiece	9.	list of tables
5.	author's optional biographical sketch	10.	list of figures

Pages four through nine of the front matter are counted in the pagination and **numbered** consecutively with **lower-case Roman numerals centered at the bottom of the page, beginning with "iv"** for the first page after the abstract.

If the student wishes **to copyright the thesis**, the statement "Copyright 2011 Author's Name" (but reproduced without quotation marks and using the current year) should appear at the bottom of the blank page, item 2 in the list above. Or the word "Copyright" may be replaced by an upper-case "C" within a circle (©), followed by the date and the full, legal name of the author. Do not print a page number on the copyright page. It is understood to be page ii for counting purposes only.

On the **title page**, which is entirely double-spaced, the **title of the work** appears **two inches from the top**, in appropriate upper-case and lower-case letters. The **author's name**, including initials, appears centered on the page, **2 ½ inches below the first line of the title (the title may, in some cases, require 2 lines)**. A standard statement concerning the **field of concentration** appears **2 inches below the author's name. The name of the university and the author's date of graduation** appear **one inch** below the field of concentration with the last line showing the date, **2 ½ inches from the bottom of the page**. Nothing on the title page is underlined or typed in boldface. The date is always November, March, or May depending upon the time of graduation.

In the literature and creative writing thesis, the title should make reference both to the prefatory critical essay and the original fiction; if the fiction collection itself has a title (*Talking with Chekhov*), it should be given.

A sample title page may be found on page 58, followed by a sample title page for a literature and creative writing thesis on page 59:

↕

(2 inches from top of page)

↕

The Legend of Ker-Is and the *Lai de Graelent*:

Water, Women, and Wickedness in Two Breton Narratives

↕

(2 ½ inches from the first line of the title)

↕

Doria A. P. Hughes

↕

(2 inches below the author's name)

↕

A Thesis in the Field of Celtic Languages and Literature

for the Degree of Master of Liberal Arts in Extension Studies

↕

(1 inch below the statement)

↕

Harvard University

May 2011

↕

(2 ½ inches from bottom of the page)

↕

$\updownarrow$

(2 inches from top of page)

$\updownarrow$

Clara Weick–Schumann: Muse and Artist in Her Own Right

An Introductory Essay

and an Original Feature–Length Screenplay, *My Clara*

$\updownarrow$

(2 ½ inches from the first line of the title)

$\updownarrow$

Antonia M. Ellis

$\updownarrow$

(2 inches below the author's name)

$\updownarrow$

A Thesis in the Field of Literature and Creative Writing

for the Degree of Master of Liberal Arts in Extension Studies

$\updownarrow$

(1 inch below the statement)

$\updownarrow$

Harvard University

May 2011

$\updownarrow$

(2 ½ inches from bottom of the page)

$\updownarrow$

The **abstract** is typically a one-page, double-spaced summary, although a second page is also acceptable. It presents a succinct overview of the thesis including (1) the hypothesis or basic goal of the project, (2) the relevant background, (3) the research methods employed, (4) the chief results, and (5) the author's overall conclusion(s) **in that order**. An outline of the thesis is **not** a satisfactory substitute for the abstract. A sample abstract from an Area C thesis in the field of English is shown below. Two additional samples from Areas A and B are found in Appendix 2.

↕

(1 double space down from top margin, 1½" total)

↕

Abstract

(Text begins here, 2 double spaces below the title. This is what is meant by quadruple spacing.) This study investigates the causes for the rise of statistical thinking during the 19th century and questions the extent to which the subsequent popular fascination with statistical studies influenced the literary art of Charles Dickens. If Dickens shared a healthy ambivalence about statistics with his Victorian readers, did that feeling shape his art in some way? Data drawn from contemporary literature, personal correspondence, and Dickens' own work all show evidence of a progressive and parallel interest in mathematical and statistical language and themes. That is to say, as statistical inquiry grew more popular in the real world of Charles Dickens, statistical rhetoric grew in the world of his fiction. This study traces that progress through "The Mudfog Papers" (1836–37), *A Christmas Carol* (1843), and *The Chimes* (1844) to its culmination in *Hard Times* (1854). The investigation concludes that in *Hard Times* Dickens perfected the rhetoric of quantification— the use of statistical and mathematical language and imagery—and employed it as an integral satiric element. With the rhetoric of quantification as a satiric device, Dickens raised to an art form the language of numbers, or quantification, so pervasive in popular culture. Through the rhetoric of quantification Dickens expressed another unique feature of his genius for transforming real–life fact into fiction.

> **Note**: As in the research proposal, the abstract asks and answers a question. If the rest of the thesis were missing, the abstract could stand alone as a summary of the research, and would be comprehensible to a reader unfamiliar with the text.

The **optional biographical sketch** is written in the third person (*e.g.*, "The author is a 1968 graduate of the University of Chicago . . ." or "John Wilson Davies is a native of South Dakota") and includes whatever personal data you deem interesting or relevant. In some cases, the information establishes the scholarly expertise of the writer. The sketch should not be used as an advertisement for your company or place of employment (*e.g.*, John Wilson Davies works at Genzyme, which recently developed a drug that will rid the world of the common cold.)

The heading for the **table of contents** should be typed **1 double space from the top margin**, with **quadruple spacing (i.e., two double spaces)** before the first line of text. The table of contents is entirely **double-spaced**.

Each **chapter title** should appear **exactly** as it does in the text, using upper- and lower-case with no underlining or boldface. Each **a-head** should be indented **½ inch** under its numbered chapter title, and each **b-head** should be indented **½ inch** under the preceding a-head, and so on. The number of the beginning page should be indicated in each instance, connected to the title by a continuous line of spaced periods with no gap between the last period and the page number. Page numbers should be exactly aligned. (It may be necessary to produce the table of contents as a separate document in order to achieve exactly aligned page numbers.)

If a lengthy chapter title requires two lines, the second line of the title should be aligned under the first word of the title. The first line of the title should be extended nearly to the right margin before the title drops to the second line; the spaced periods and page number occur on the second line of the title. No words should appear directly above or below the column where the aligned page numbers occur, as in the following example:

VI.   Critical Interpretations of Skepticism toward God–belief Interpretable as Directed at Egotism and

    Anthropocentricity 119

The table of contents for a literature and creative writing thesis is organized somewhat differently, while following the standard format requirements. In general, these theses will consist of two main divisions—the critical essay and the body of original fiction. Each will likely have subsections, however, particularly the second main division under which individual stories may be listed.

Sample Tables of Contents. The figures on the next pages are sample tables of contents, illustrating format only. Note that the table of contents is a numbered page but that it is **not shown** in the actual table of contents. Thus, after the acknowledgments, the pagination in the table of contents goes from page v to page vii, instead of to page vi. Note also the indentations used to distinguish a-heads, b-heads, and c-heads from major chapter headings. Chapter numbers are represented by Roman numerals, without the word "Chapter" preceding them. Double spacing follows the Roman numeral and the period, before the chapter title is typed. In the humanities and social sciences, it is also acceptable for the Introduction and Conclusion to be unnumbered.

The first, on page 62, represents a Table of Contents suitable for all fields of concentration except Literature and Creative Writing.

The second, on page 63, is a Table of Contents for a Literature and Creative Writing thesis only

Table of Contents

Table of Contents

The **list of tables** and **list of figures** should follow the format of the table of contents. Each table or figure should be numbered consecutively, given a title or other appropriate legend, and the page number on which each table or figure occurs. The title is connected to the page number by a line of continuous spaced periods.

(1 double space from top margin, or 1½" total)

List of Figures

Headings

If the completed thesis can be readily reduced to an outline, it is probably well organized. A question then arises concerning the use of this outline to form headings. To what extent, if any, should the thesis contain major and minor headings to guide the reader? The answer will vary with the different fields, specific research problems, and the investigator's inclination.

The ALM thesis is divided into chapters. The word "Chapter" and its number are centered and typed **one double space from the top margin.** The chapter title is also centered and placed, with **one double space**, directly under the word "Chapter" and its number. A new chapter always begins on a new page. *If the chapter title is more than one line long, it should be double-spaced.* After the chapter title, **two double spaces (quadruple space)** precede the text. The chapter title uses upper-case and lower-case letters, with no underlining or boldface, as in the example below.

(1 double space from top margin, or 1½" total)

Chapter II

William Shakespeare's Early Works

William Shakespeare's early works are his comedies. In these plays, he demonstrates a keen awareness of . . .

In some theses the chapters are subdivided, and each subdivision is marked with its own heading. The headings for the major subdivisions, equivalents so to speak of the capital-letter divisions of an outline, are called **a-heads**; subsections of these rubrics (equivalent to the Arabic-numeral divisions of an outline) are called **b-heads**; and subsections of these (equivalent to the lower-case-letter divisions of an outline) are called **c-heads**:

(1)   The **a-heads** are centered using upper-case and lower-case, with the usual **double spacing** after the heading.

(2)   The **b-heads**, also upper-case and lower-case with **double spacing** below, appear flush to the left margin.

(3)   If still more subordinate headings are included, the **c-heads** are run-on heads, beginning a paragraph. They appear in lower-case, except for the first letter, and they are followed by a period. The c-heads must be underlined or *italicized* in order to separate them from the rest of the paragraph. C-heads are not indented.

When beginning a new section within a chapter, *quadruple space* (*i.e.*, double space twice) **before the a-head or the b-head.** There is **no extra spacing** before the c-head, which consists simply of a few words at the start of a paragraph, underlined or *italicized*, and followed by a period. **Please note that these headings are not interchangeable units; they must be used** *in sequence***:** first a-heads; then, if necessary, b-heads; and finally, c-heads, *each group of which represents a subdivision of a preceding rubric*. The text should be **double-spaced** throughout.

As the example below indicates, **in no instance should headings appear consecutively without interspersed text.** After the chapter title, for example, there should be some introduction to the first a-head. After an a-head, there should be some general introductory statements before any b-head appears. The issue here is successful transitions, which are a mark of clear and careful writing. Without such transitions, the presentation becomes an outline. **Note as well that all subheadings appearing in the thesis must appear exactly as they do in the table of contents and that they must be formatted accordingly.**

Examples of a-heads, b-heads, and c-heads:

Reasoning and Problem Solving *[a-head]*

We have previously considered the formation and use of concepts, noting that concepts are employed in thinking and that they are developed through thinking. We now consider the process of reasoning and problem solving.

Computer Simulation *[b-head]*

The computer is an assembly of mechanical and electronic components that can engage in symbolic processes. Given some numbers, letters, or other symbols, the computer manipulates them in various ways and produces a result.

Use of computers. *[c-head]* In a broad sense, computer techniques and the programs associated with them are used for two general purposes. They are primarily designed for solving problems. But psychologists and other scientists also use computers for another purpose—to study the reasoning process.

Headings should not serve in place of prose transitions. A well-written text that includes headings should flow smoothly even without the headings, which serve simply to ease the reader's task. In some cases they may interfere with the flow. If so, ask, "Is a subsection needed?" If the answer is **yes**, use the next-lower heading and give that section a title. Do not use successive dashes, all capital letters, a row of circles, extra spacing, or some other impromptu device to indicate a subsection. If the answer is **no**, continue with uninterrupted text.

Text of the Thesis

The text of the thesis follows these preliminaries. Each page is numbered consecutively with Arabic numerals, following the formatting explained under "Margins and Pagination." Double spacing is expected throughout the manuscript. All **new paragraphs** must be **indented ½ inch** from the left margin, with **no additional spacing between paragraphs**. Typeface must be 12-point font for the text and no smaller than 10-point font for the notes. Times New Roman is preferred. Full justification of the text is not recommended. Students should take care that the same style of font and typeface that appears in the main body of the text is also used in all headers, page numbers, footnotes, and bibliography.

Single-spacing is acceptable in those few instances where it may improve readability, as in **long bibliographic entries**, **long quotations** (more than four typed lines), and **extensive figure captions**. (The *MLA Handbook* suggests that long quotations be double-spaced; but for purposes of economy we recommend single spacing in the ALM thesis, since numerous lengthy quotations often occur.) Introduce the quotation with a sentence, typically followed by a colon; then double-space before beginning the quotation. In order to distinguish them visually from ordinary new-paragraph indentions, long quotations are **indented 1 inch** from the left-hand margin.

Notes, headings, references, bibliographic entries, and all other mechanics must be presented in a consistent manner throughout the thesis. Unless the thesis is being prepared for publication in a journal that uses a particular notational style, students **must**, depending on their field, use the APA, MLA, or CMS style of citation outlined in detail in Chapter 3. Students should be attentive to all of the details involved in correctly citing sources, from the arrangement of the required items of information to their proper spacing. The successful thesis always shows careful attention to these details.

Manuscripts that follow an MLA or CMS approach employ Arabic numerals for citations, notes, cross-references, and other documentation. These numerals appear as **superscripts**, elevated above the text and **following** the final punctuation, as illustrated here.[1] They begin with the number 1 and continue consecutively throughout each chapter or throughout the entire manuscript. Especially if the thesis is short, it is preferable to number notes consecutively throughout the manuscript and place them at the end. To use the documentation, the reader consults the relevant note.

The format for correct documentation has changed enormously in recent years. Thus a style learned by students in high school or college several years ago is probably no longer acceptable. One of the major changes in the most recent *MLA Handbook* (7th edition) is the abandoning of notes for anything but **discursive** purposes and the shorthand use of a bibliography as a means of citing works parenthetically within the text (*e.g.*, Smith 23). Students must use *the most current edition* of the appropriate style manual.

Manuscripts prepared in an APA mode usually include the name of the author and the date of the work in parentheses following the first mention of the reference. There is no chronological order, for the reader consults the bibliography or list of references. In this approach, as illustrated in this Guide, the parenthetical reference appears **before** the final punctuation. For further details on the MLA, CMS, and APA styles, see Chapter 3, "Guidelines for Bibliography and Notes."

Use of Tables, Figures, and Other Displays

In some cases tabular, graphic, and other types of displays are useful in the presentation. These should be placed as soon as conveniently possible after the first mention of the data in the text. If they are small, they may appear on the same page; if large, the next full page may be appropriate.

They may be placed on a page with no text above or below, or they may be placed directly into the text. If a table or figure is alone on a page (with no narrative), it should be centered within the margins of the page.

However, if there are many tables or figures, they are sometimes presented in an appendix following the text of the thesis, if inserting them into the text would be too disruptive or distracting. They may not be placed at the end of the chapter. If they appear on the same page with the text, **quadruple space (*i.e.*, double space twice) both before and after the table or figure** to clearly distinguish it from the text (see next page). **All tables or figures interleaved with text should be counted in the pagination, but page numbers need not necessarily be typed on these pages if they interfere with the display.** A consistent method must be followed throughout, however, either typing page numbers on all these pages or omitting them. If placing page numbers on the page, they appear in the same "portrait" orientation as the other pages in the text, regardless of the orientation of the table or figure.

The purpose of these displays is to amplify but not to repeat the text. The text should indicate the main points of the topic in question; further details are presented in the display. Whether a table or figure, it should include a **number**, **title**, and **legend** (*i.e.*, a description or explanatory caption). The legend should be placed at the bottom of the figure. The heading for a table should be placed at the top of the table. Figure and table numbering must be either continuous throughout the thesis or by chapter (e.g., 1.1, 1.2, 2.1, 2.2).

Horizontal figures and tables (i.e., those landscaped onto the page) must be positioned correctly and bound at the top, so that the top of the figure or table will be at the left margin. Figure and table headings/captions are placed with the same orientation as the figure or table when on the same page. When on a separate page, headings/captions are always placed in vertical orientation, regardless of the orientation of the figure or table.

Illustrations of all kinds should be positioned to fit vertically on the page ("portrait" layout). Large tables may be positioned horizontally, if necessary ("landscape" layout). In this case, page numbers must be omitted from **all** pages containing illustrations. In the behavioral sciences, APA format permits only vertical illustrations.

In the behavioral sciences, details of a statistical test are often displayed in a table. However, as in all fields, if all of the data are already contained in the text, a table is superfluous (See APA Manual).

Amid the diversity of displays today, and with the continually increasing capabilities for typesetting, the long-time distinction between tables, which were typeset, and figures, which were not, have changed. **Tables** are simply textual or numerical material, while **figures** are graphic or pictorial.

Each table or figure must be connected with a specific portion of the text in systematic fashion, and labeled with sufficient clarity to be understood independently of the text description. In the APA style this keying or reference commonly occurs in parentheses at the end of the sentence, like any other reference. Thus it is available to the interested reader, but it does not interfere with the flow of the text, as in the example of this sentence (Table 1).

[number] [title]
Table 1. Types of display.

Type	Advantage	Disadvantage
Data Display • Chart • Diagram • Table	Direct comparison of information	Difficulty of comprehension
Visual Display • Drawing • Graph	High attention value	Expensive and sometimes imprecise

This table presents a comparison of data and visual displays.
[legend]

Information on the construction of tables and figures can be found in the APA publication manual or in Nicol and Pexman's (1999) *Presenting Your Findings: A Practical Guide for Creating Tables*. The basic rule is to use titles and headings that are not cumbersome but sufficient in length to be informative.

Tables should be typed directly or offset printed or digitally reproduced on thesis-quality paper. They should be numbered serially throughout the thesis or by chapter.

Illustrations in a thesis may consist of line drawings, graphs, maps, photographs, facsimiles of manuscript pages, works of art, musical scores, or other types of displays. These are acceptable, as long as the media used to produce them (paper, inks, digital printing processes, traditional photographic processes, and adhesives) are permanent. Figures can be numbered serially throughout the thesis or by chapter. **All displays should include a figure number, title, and legend**. Images such as art works taken from books may be in several formats, two of which are shown below. Again, you should be consistent in the method you select to present your images. The entire bibliographical reference for the work from which the image was taken is not included in the legend but is cited in the bibliography; the last name of the author and the title of the book are sufficient. Each page containing an illustration should be counted in the pagination.

> Fig. 1. Michelangelo Buonarroti. *The Libyan Sibyl*, 1508-1562. Fresco, The Vatican, Sistine Chapel. Rpt. in Bulloz, *Feminism and Art History*.

<div align="center">*or*</div>

> Fig. 1. Edward Hopper. *Early Sunday Morning*. 1930. 35 x 60". Whitney Museum, New York. Rpt. in Jansen, *A History of Art*.

Line drawings or any other **hand-lettered illustrations or labels** must be done in India or other permanent black ink or reproduced by offset printing on high-quality paper consistent with the other pages of the thesis.

Photographs included in the thesis may be originals or maximum-quality photocopies. Original black-and-white photographs should undergo "archival" or "optimum" processing to ensure reasonable permanency. Original color photographs should **not** be used since they are impermanent; however, color xerographic reproductions **are** acceptable. Photographs should be mounted on 8 ½ x 11-inch long-lived and durable paper, using good quality commercial paste, dry-mount tissues (ironed on with a warm iron), or dry-mounting adhesive sheets. The Scotch brand No. 568 adhesive sheets provide excellent permanent mounting for several types of photographic papers. Original photographs should be digitally reproduced on **high-quality paper**, consistent with that required for the text of the ALM thesis, and should have **high contrast and (when applicable) accurate color**. **Fine arts prints** should generally be reduced to a 5 x 7-inch format, which will leave adequate space for the required 1½-inch margin on the left, the 1-inch margin on the other three sides, and for the figure number, title, and legend. Prints should be mounted on thesis-quality paper, using the same kinds of mounting systems described under **Photographs**. Page numbers (if used) and identification of figures must be typed onto each sheet of paper **before** the prints are mounted.

Do not use any gummed or cellophane tapes or rubber cement for mounting, since these materials deteriorate rapidly. **Avoid also the dry-mount cements**, which often spot and peel away from the mounting sheet. **Photographic corners and acetate pockets are also unacceptable as mounting**. The following adhesives are acceptable for mounting illustrations on 8½" x 11" paper:

• Acid-free polyvinyl acetate white glue

• Dry-mount adhesive available through suppliers of archival products

Other types of illustrations such as maps, manuscript pages, musical scores, or autographs should be presented or reproduced in accordance with the specifications outlined above for the use of photographs, fine arts prints, and original drawings. They can be photographically or digitally reproduced or offset printed. All such copies must have **high contrast** and must be presented on **high-quality paper** consistent with that required for the text of the thesis. Black and white photocopies are acceptable if produced on paper that meets the same standards

required for the text of the thesis. Images can be copied onto acid-free buffered paper. Color photocopies made on a laser copier are acceptable.

Reduction and Enlargement. When drawings need reduction or enlargement, the author should make sure that the scale chosen will allow at least one-inch margins on each of the three open sides of the page and 1½-inch on the binding side. In addition, space should be left for page and figure numbers, and for a legend if one is to be typed beneath the figure.

End Matter

Like the front matter, the materials at the close of the thesis have a special format and sequence. Known as **end matter**, their headings are formatted and paginated in a manner consistent with the other major headings throughout the thesis, beginning 1 double space (2 lines) from the top margin, with quadruple spacing after the heading. They appear in the following order and begin on separate pages:

1. appendices or supplements
2. endnotes
3. bibliography or references
4. optional index

Any **appendix** or **supplement** should be prepared and formatted as a chapter, including a title. If there are several, they should be numbered.

While the *MLA Handbook* suggests completely double-spacing entries in the **bibliography**, we recommend **double-spaced** *between* **entries but single-spacing** *within* **entries,** as in the example below. Because an ALM thesis typically contains numerous notes and an extensive list of source materials, this alternative method of formatting them will help somewhat to reduce the overall pagination of the thesis.

<div align="center">Bibliography</div>

Entelis, John P. *Algeria: The Revolution Institutionalized*. Boulder, CO: Westview, 1986.

Mortimer, Robert A. "Algeria and the Politics of International Economic Reform," *Orbis* 3 (Fall 1977): 687.

A **list of references** contains only those works specifically cited in the thesis. The **bibliography** includes the foregoing but can, in addition, contain sources for background or further reading. As with the bibliography for the research proposal, the list of sources can be divided into Works Cited and Works Consulted. Further division into primary and secondary sources is also permitted, if you wish to arrange your source material into an even more detailed list. However, there are important differences between the MLA, CMS, and APA methods. Biological and behavioral sciences candidates should note that the APA manual generally recommends a list of references, not a bibliography. For further details on these methods, we again urge you to consult Chapter 3. **Works appearing under Works Cited do not appear again in Works Consulted.**

The bibliography should be consecutively paginated after the text.

Format Review and Format Approval

The candidate submits one *unbound* copy of the thesis to the thesis director, who evaluates the overall work. A second *unbound* copy of the final draft is submitted to the research advisor for evaluation of the format. The latter copy should be as nearly complete as possible, printed exactly as it will be when it is bound, and formatted precisely according to the requirements outlined in *A Guide to the ALM Thesis*, so the research advisor can evaluate the appearance of the thesis.

The unbound copy for the research advisor should **include a cover letter** that gives the following information:

- What citation source you used (MLA, Chicago, APA, etc.)

- An updated address

- Updated e-mail

- Updated phone number

- Whether you wish to pick up your corrected thesis draft when the research advisor has made his/her corrections or if you wish to have it FedEx'd to you. Note: FedEx does not deliver to PO Box addresses.

> In addition to submitting an unbound paper copy of the thesis with cover letter to the ALM Office, **students should also submit an electronic copy of their approved title page and abstract.** You can send yours as an e-mail attachment to alm@dcemail.harvard.edu.

Format review involves more than making sure the margins are correct. It is, in fact, the final crucial stage in the editing process. The research advisor will carefully examine the thesis and will not give it final approval if there are errors in the format of the front matter, end matter, or chapter headings; or if the text contains errors in spelling, punctuation, grammar, and usage. Such errors must be corrected and the corrections resubmitted to the research advisor before final approval will be given. **All theses inevitably contain some errors**, so students should not be alarmed if they are asked to make some corrections at this final stage. Most are quickly and easily rectified, especially if the student pays careful attention to the instructions given in this chapter. **It is therefore wise to submit the final copy printed on ordinary paper, not the more expensive thesis paper that will be used for the bound copy. Students should submit a sample of the thesis paper they intend to use for the approved bound copy when they submit the thesis to the research advisor for final approval.** The research advisor will want to see **both** the original copy of the thesis and the corrected copy so that comparisons can be made quickly and efficiently. The corrected copy can be safely printed on thesis paper once the research advisor approves the thesis.

> **Note:** Appendix 3 in this Guide contains a list of items that the research advisor will be checking for correct format. We recommend that you use it from the beginning of the process as a checklist in the preparation of your thesis.

Students wishing to graduate in May should be prepared to work quickly and hard through the final weeks of March and the entire month of April, being mindful of the April 1st deadline to submit the thesis to the research advisor and the May 15 deadline to submit the bound copy to the ALM office. The research advisor will likely keep your thesis for up to two weeks (remember, s/he is probably reading about 20 during this period). **Students should not pressure the research advisor with unnecessary telephone calls at this time to inquire whether their thesis is ready.** The research advisor will contact you as soon as the format review has been completed. Once it is returned to you, work rapidly to make all of the necessary corrections and to resubmit the thesis to the research advisor for what will most likely be final approval this time. Then you must upload or deliver your manuscript to the bindery without delay. At this stage, **no additional changes** should be made that have not been approved by the research advisor.

The Final Manuscript

The final manuscript must be prepared on a **laser printer**, **using double spacing and thesis-quality paper.** The thesis should be typed or *printed on one side of the page only*. The bound copy submitted to Extension may be either an original or a thesis-quality photocopy. Typeface must be 12-point for the text and no smaller than 10-point for the notes. The manuscript must be free of mechanical errors and meticulously proofread.

> **NOTE:** Text has a tendency to shift with any type of electronic transfer. Be especially careful when changing printers to be sure that all formatting of the final draft is correct.

As you use the computer to produce drafts of your text, be sure to eliminate all unnecessary spaces from it. These are especially noticeable if your printer does not have proportional spacing. Most laser printers have proportional spacing, while many ink-jet printers do not. See "Margins and Pagination."

No space is needed between the em dash (—) and the words they connect ("this—that").

Thesis Paper

The thesis must be *laser printed* (single-sided) on a high-quality, long-lived, and durable paper, 8 ½ x 11 inches in size and at least 20-pound substance. All pages of the thesis must be a high-contrast, dark image on white paper. The best available paper is Crane's Thesis Paper, a 100% cotton rag content, acid-neutral paper of long life expectancy and high durability. Other papers such as Permalife, Perma-Dur, Hollinger Acid-Free, University Products' White Bond Paper—20-lb. weight, Strathmore Writing, Southworth Fine Business, Mohawk Synergy, and Xerox XXV Archival Bond are also acceptable and work well in photocopying machines. **Erasable paper is not acceptable for any part of the thesis**. Students should make sure that the photocopying agency they use to reproduce the thesis uses a paper that is **at least 20% rag content, acid-neutral**, and **of permanent, durable quality**. Paper lacking **any** of these attributes is not satisfactory thesis paper. Binderies such as Acme Bookbinding and Wells Bindery always have thesis-quality paper in stock, *but you must ask for it.*

Binding the Thesis and Final Approval of the Bound Copy

The revised and approved final copy of the manuscript must be bound in a **sewn Class A library binding** with a traditional **Harvard-red buckram** cover. No other color is acceptable. The **title of the thesis** (abbreviated **only** if necessary), the **author's name**, and the **year of graduation** must be stamped in gold lettering on the spine of the binding. **One copy** of the bound thesis is then submitted to the Extension Office for placement on the Grossman Library shelves.

If the author wishes to include a CD-ROM with supplemental data, a pocket in the binding should be requested from the bindery.

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