

**Whose Knowledge is it Anyway?
Feminist Epistemology and Science
*An Annotated Bibliography***

"Representation of the world,
like the world itself,
is the work of men;
they describe it from their own point of view,
which they confuse with the absolute truth."¹

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Information Sources and Services
LIS 620

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1 December 2005

¹ Simone de Beauvoir. *The Second Sex*. Translated by H. M. Parshley. New York: Vintage Books, 1989, p. 143.

WHOSE KNOWLEDGE IS IT ANYWAY? FEMINIST EPISTEMOLOGY AND SCIENCE

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Introduction

Philosophers seek to create a systemic view of the world that explains the universe and people's existence within it. There are many ways philosophers take these matters into account. These different methods have led to several branches of philosophy. For example, ethics deals with how one ought to live, metaphysics considers the nature of reality, political philosophy questions with how a government ought to be run, and epistemology concerns itself with the nature of knowledge.

Epistemologists focus on the nature, the sources, and the limits of what can be known. Knowledge, in an epistemologist's understanding, is "true belief," which is actually true, rather than just what one truly believes. Epistemologists focus on what is required for knowledge.

Many contemporary epistemologists are interested in the social aspects in knowledge production, discovery, and creation. These philosophers fall into the school of "social epistemology." This field is still new enough that there isn't one general stance in which all social epistemologists work from. Generally, though, social epistemology is the study of the relevance of social relations, interests, and institutions to knowledge. These things have traditionally been viewed as secondary in philosophy, but social epistemologists give them attention as important factors in the understanding of knowledge.

In some ways these new perspectives have arisen from the critiques of the postmodern movement. As postmodern critiques have emerged in literature, history, and art, they have also appeared in philosophy and epistemology. These assessments generally do not place the high authority on "objectivity" and "neutrality" that traditional epistemology has, as these new studies of epistemology question the achievability of such perspectives. Instead, postmodern critiques of epistemology consider context and power as key to seeing through to the truth about knowledge.

Feminism has also interplayed with these social investigations of knowledge. Feminist epistemology is concerned with "whose knowledge" is being considered. Feminist epistemologists critique traditional epistemology and argue for ways of understanding knowledge that focus on context and situation. Feminist epistemologists do not suggest that empirical evidence is wrong, but rather that it is necessary to understand that most beliefs are as much a result of their social context as they are factually true. The particulars of knowledge construction are the main focus for feminist epistemologists, rather than universal circumstances for justifying knowledge. These philosophers are often working on undertakings that are political in addition to intellectual.

Feminist epistemology is a broad field. Today it addresses nearly every discipline and there is a significant amount of scholarly work done in the subject. To allow for a thorough investigation, this bibliography will address one specific area of feminist epistemology: the feminist critique of scientific knowledge.

The feminist critique of science is an extremely controversial subject. Many academics are worried that the sciences will be negatively impacted by postmodern or feminist critiques in a similar way to the humanities and social sciences. The roots of this controversy are in the debates over realism versus relativism. Realism is a philosophical stance that there is an objective world which people learn about. Relativism is the idea that truth is "relative" in one way or another. It is easy to fall into the trap that a feminist social epistemology—and any field which it makes a statement about, even science—is relativist, and many thinkers have addressed this, either making cases that relativism is correct or making claims for a realist feminist science.

Contemporary leaders in the critique of scientific rationality are scholars such as Sandra Harding, Evelyn Fox Keller, Donna Haraway, and Helen E. Longino. These critiques are

overwhelmingly designed not to diminish the presence of women and other minorities in the sciences, but to argue that traditionally marginalized people have had to adopt characteristics of the people in power in order to have a place at the table in science and in other matters. These arguments typically do not make a claim that there are fundamental differences between women and men, but that differences are a result of socialization. Feminist epistemologists of science typically argue that the way science is done includes cultural and social standards in the description of nature. Gender is both part of the cultural idea that shapes how nature is described and is also described by the process of science. Feminist epistemologists concerned with gender and science do not wonder about how to correct "bad science," but how the gendered nature of science, from definitions to scientists to the scientific method, has fashioned scientific assertions.

Several relevant feminist tools have been developed for the study of gender, science, and knowledge by feminist theorists. One is standpoint theory, which is the idea that a perspective is one among many. Standpoint theory does not give every perspective authority, but requires an intellectual and political position for any standpoint claims. Standpoints are created from thorough analyses of the systems that validate oppressive systems and are located within a context. Standpoints are not accepted blindly as truth and may be criticized and evaluated.

Another useful feminist tool is the idea of dichotomy. Western philosophy is built around the idea of binary oppositions such as reason/emotion, mind/body, universal/particular, objective/subjective, and male/female. These are typically hierarchical with the first term given privilege. This dualistic thinking has led to the association of maleness with reason, mind, objectivity, and universals while femaleness is associated with emotion, body, subjectivity, and particulars. Feminist scholars often argue that these dichotomies create one type of knowledge

that is masculine. These theorists argue that the period for singular methodology and theory has passed, and it is time to incorporate new standpoints into our way of understanding truth.

Feminist social scientists also study the intersection of gender and science, but from a more practical perspective. Sociologists studying knowledge seek to discover many different aspects of knowledge within a social context. They use social science to understand the ways in which people are educated, the bodies which do education, the ways in which the knowable world stays stable, how changes are managed and settled, the conditions of employment, and status and membership criteria for assumed beliefs. These membership measurements can be something like professional and amateur, doctor and patient, etc. Sociologists of knowledge tend to use sociological methods to create studies in which to prove a point within a specific case.

Feminist social scientists often focusing their research on six areas:

- What obstacles have existed for entrance, retention, and advancement of women in science and where are they in scientific institutions?
- Are scientific applications and technologies sexist, and is this built into science or merely a misuse?
- Does research have a logic that distorts science through silencing the feminist or feminine perspective?
- How do gendered models of nature, scientists, and research change the representations of nature and social relations?
- Has the dominant group conceptualized traditional scientific notions (such as objectivity, good method, rationality) in their own favor?
- How has science education, at all levels, worsened these problems?

The study of these areas has given rise to significant quantitative, as well as qualitative, research on the status of women in the sciences. Some of this has in turn been useful for those studying the epistemological perspective for the feminist critique of scientific knowledge.

Scope

This bibliography is a collection of works dealing with the intersection of gender, science, and knowledge. As this is a relatively recent field, much of the work has been published in the past twenty years. Where it is useful, works are included that were foundational and written before scholars started publishing regularly in the field. Also included are a few works that are not directly tied to the feminist critique of science, but rather deal with a specific aspect of the study such as realism or the history of women in science. These tangent topics are included when their argument is significant enough to counterweigh the absence of discussion on the other aspects of the feminist critique of knowledge debate.

Much of the work in the feminist critique of knowledge exists in book form. Articles tend to be shorter and are recycled into books after a period of time. For this reason most of the texts included in this bibliography are books. Articles, chapters, and dissertations are included when they address something unusual, give an exceptionally good overview, or were the beginnings of truly foundational work.

Since the feminist critique of science is relatively new, this bibliography also includes information on special collections, conferences, publishers, and journals. New information is produced through these venues on a regular basis. Truly interested scholars should investigate these opportunities to find the most current information and debates.

Subject Headings and Classification

The following subject terms and classification numbers are most useful in searching for material dealing with the feminist critique of science:

Library of Congress Subject Headings

Feminist Epistemology

Feminist theory
Knowledge, Sociology of
Knowledge, Theory of
Philosophy of mind
Social epistemology

These subject headings will return philosophical works on epistemology. All deal with the nature of knowledge, but "feminist theory" will return only works dealing with a feminist perspective.

Feminist Critique of Science

Feminism and science
Science Philosophy
Science Social aspects.
Women in science

To find discipline-specific information it is useful to consider these subject headings dealing with the feminist critique of science. "Feminism and science" and "women in science" will return gender specific works while "science philosophy" will return philosophy of science compositions and "science social aspects" will return works dealing with the social contexts for science.

Library of Congress Call Numbers

BD143-237	Epistemology and the theory of knowledge
GN357-367	Culture and cultural processes
GN451-477.7	Intellectual life including philosophy, knowledge, etc.
HM621-656	Culture
HM701	Social systems
HQ1075-1075.5	Sex role
HQ1088-1090.7	Men
HQ1101-2030.7	Women and feminism
Q130	Science (general)
Q175	Science (general)

As the feminist critique of science is an interdisciplinary field, Library of Congress call numbers can be found in several different areas. Philosophical works are found in the "B" classification, social sciences in the "H" section, and sciences in the "Q section." Though all the call numbers listed above are promising for researchers looking for information on the feminist critique of science, B175, HQ1101, and HQ1190 are particularly fruitful areas containing many of the foundational works dealing with gender, science, and knowledge.

Dewey Decimal Classification

- 120 Epistemology, causation, humankind
- 121 Epistemology (Theory of knowledge)
- 301 Sociology & anthropology
- 302 Social interaction
- 303 Social processes
- 305 Social groups
- 501 Philosophy & theory of science
- 506 Organizations & management of science

The feminist critique of knowledge is an academic topic and researchers in the field will primarily use research libraries that utilize Library of Congress classification. However, in the case that a researcher might visit a smaller special collection or a university using the Dewey Decimal System, it would be useful to know relevant Dewey Decimal call number for their investigation. Most of the applicable materials would likely be found in the 100s, philosophy, the 300s, social sciences, or the 500s, natural sciences and mathematics.

Special Collections

James Ray Newman Collection
Duke University, William R. Perkins Library
<http://library.duke.edu/about/depts/>

The James Ray Newman collection, located in Perkins Library at Duke University, contains several thousand books and more than 8,000 manuscripts broadly related to philosophy. Within this collection scholars can find emphasis in mathematics, philosophy, logic, and the history and philosophy of science. Works on the history of science may give researchers insights into the beginnings of Western scientific culture. Works in the philosophy of science would contain discussions of realism, relativism, and various critiques of science.

National Reference Center for Bioethics Literature
Georgetown University, Kennedy Institute of Ethics
<http://www.georgetown.edu/research/nrcbl/>

This collection is particularly strong in the following subject areas: applied ethics, philosophy of medicine, technology and society, and the sociology of medicine. Though topics do not directly relate to gendered critiques of science, interested scholars can find relevant social critiques that could be useful in the context of a feminist analysis. Users can request a personalized bibliography from this center.

General Collection
Mount Saint Vincent University Library
<http://www.msvu.ca/library/>

Mount Saint Vincent University emphasizes the study of women's issues, and their library collections reflect this interest. Collections focus on cultural, sociological, and professional women's studies issues, among others, and are international in scope. Researchers in the feminist critique of science may be interested in the sociology of knowledge, which this collection could support. This collection would also provide for research in sociology and women professionals. Western cultural studies may also be useful for researchers as a context within which science operates.

Conferences and Lectures

Feminist Epistemologies, Methodologies, Metaphysics and Science Studies (FEMMSS)

<http://myweb.dal.ca/lt531391/findex.html>

FEMMSS is a new organization that hosts bi-annual conferences on feminist epistemologies, methodologies, metaphysics, and science studies. Virtually every significant contemporary scholar in these fields spoke at the first FEMMSS conference: Lorraine Code, Sandra Harding, Nancy Tuana, and many more.

The Minnesota Center for Philosophy of Science

<http://www.mcps.umn.edu/>

The University of Minnesota hosts the Minnesota Center for Philosophy of Science, the oldest such center in the world and one of the world's largest repositories on the topic. The *Minnesota Studies in the Philosophy of Science* series originates from this center. The upcoming volume will be useful for those looking for the most contemporary discussion of feminism in the sciences. This volume will contain articles on scientific pluralism, and one of the editors is Helen E. Longino, a leading feminist scholar. The center also hosts a number of colloquia every year. Nancy Tuana, a philosopher who studies the intersection of gender and science, will be a lecturer on March 31, 2006.

National Women's Studies Association Conference

<http://www.nwsaconference.org/>

The National Women's Studies Association hosts annual conferences on a wide variety of issues of importance to women's studies scholars. These issues often delve into the sciences or construction of knowledge. The topic this year is "Critical Issues in Women's Studies," which will undoubtedly include sessions and papers on women in the sciences.

Rutgers Epistemology Conference

<http://philosophy.rutgers.edu/EVENTS/EPIS2005/main.html>

The Rutgers University philosophy department hosts this conference, which focuses on pure epistemology. Some of the papers delve into social issues and their implication for knowledge. Some papers investigate gender issues. Papers from previous conferences are available as PDF files on the conference website.

Publishers

Cornell University Press

Sage House / 512 East State Street / Ithaca, NY 14850
607-277-2338 / <http://www.cornellpress.cornell.edu/>

Cornell University Press has the honor of being the first university press in America. This press produces about 150 new titles a year. Even though the number is small, there are many that are relevant to this bibliography. Useful topics generally fall within anthropology, cultural studies, history, philosophy, and women's studies.

Indiana University Press

601 N. Morton St. / Bloomington, IN 47404
812-855-8817 / <http://www.iupress.indiana.edu/catalog/>

Books selected for publication by Indiana University Press are expected to be relevant in the long-term. For this reason Indiana University Press often publishes cutting edge works dealing with emerging topics. More than 170 books and 21 journals come from this press annually, many of which deal with cultural studies, women's and gender studies, bioethics, and philosophy. Indiana University Press has the distinction of being the second-largest public university press.

Oxford University Press

198 Madison Avenue / New York, NY 10016
212-726-6000 / <http://www.oup.co.uk/>

Publishing in nearly every field, the Oxford University Press covers cultural studies, philosophy, sociology, and many sciences. This well respected press produces *Feminism and Science* through the *Oxford Readings in Feminism* series, an excellent introduction and an important collection of essays by leading scholars in the field.

Routledge

Taylor & Francis Group Ltd. / 2 Park Square / Milton Park
Abingdon / Oxford OX14 4RN, UK
44-0-20-7017-6000 / <http://www.routledge.com/>

Routledge is known in women's studies and in philosophy to be an excellent press that publishes on interesting and relevant topics. Many of the works in this bibliography were published by Routledge including the outstanding *Routledge Encyclopedia of Philosophy*. Routledge publishes around 1,000 new books each year.

State University of New York Press

194 Washington Avenue, Suite 305 / Albany, NY 12210-2384
518-472-5000 / <http://www.sunypress.edu/>

The State University of New York Press publishes roughly 200 books per year. Most works are in the humanities and social sciences and the press has national recognition in the areas of philosophy and social sciences. The press is working to increase growth in the field of women's studies.

The University of Chicago Press

1427 E. 60th Street / Chicago, IL 60637 USA
773-702-7700 / <http://www.press.uchicago.edu/>

As one of the original divisions of the University of Chicago, the University of Chicago Press was founded in 1891. Its mission is to publish the highest standard of scholarship that encourages education, furthers public understanding, and enriches cultural life. Books published by this press are often interdisciplinary, which is particularly useful in the case of this bibliography. The University of Chicago Press also seeks to define new areas of intellectual work, and therefore has published several works in the feminist critique of science.

University of Minnesota Press

Suite 290 111 Third Avenue South / Minneapolis, MN 55401
612-627-1970 / <http://www.upress.umn.edu/>

The University of Minnesota Press publishes pioneering work in social and cultural thought, critical theory, and feminist criticism. Many of the books published by this press are critiques and focus attention on re-examining well-established topics, such as science.

University Press of New England

37 Lafayette St. / Lebanon, NH 03766-1446
800-421-1561 / <http://www.upne.com/>

Northeastern University Press, another important press in the dissemination of scholarship dealing with the feminist critique of science, joined with the University Press of New England. This press is a collective effort among Brandeis, Dartmouth, New Hampshire, Northeastern, Tufts and Vermont. Works published by this press include cultural studies as well as some works on the environment. The most relevant works for this bibliography were published under the Northeastern University Press.

Westview Press

Perseus Books Group Customer Service / 1094 Flex Drive / Jackson, TN 38301
800-371-1669 / <http://www.perseusbooksgroup.com/westview/home.jsp>

Primarily a publisher of humanities, social sciences, and science textbooks, Westview Press produces many books that are good introductions or overviews to topics of interest to those working on a feminist critique of science. This press has published several useful titles in philosophy and sociology.

Journals

Behavior and Philosophy

Published twice a year by the Cambridge Center for Behavioral Studies Publication Office
336 Baker Avenue / Concord, Massachusetts 01742-2107
978-369- 2227 / http://www.behavior.org/journals_BP/

Behavior and Philosophy focuses on "philosophical, metaphysical, and methodological foundations of the study of behavior, brain, and mind." Many of the articles deal with issues of epistemology or how people understand the world. This journal has an impact rating of .111 and an immediacy factor of .083.

Episteme: Journal of Social Epistemology

Published three times a year by Edinburgh University Press / 22 George Square
Edinburgh EH8 9LF, Scotland, UK
0131-650-4218 / <http://www.episteme.eu.com/>

Focusing on all areas of analytical social epistemology, *Episteme* publishes articles dealing with social aspects of knowledge from philosophical epistemology to economics to political theory to information science. This journal includes topics such as social models of science, analytical feminist epistemology, and epistemological contextualism. *Episteme* also hosts annual conferences on issues of social epistemology.

European Journal of Women's Studies

Published quarterly by SAGE Publications with The European Women's Studies Association
2455 Teller Road / Thousand Oaks, CA 91320, USA
805-499-9774 / <http://ejw.sagepub.com/>

The *European Journal of Women's Studies* publishes articles focusing on the relationships between women and Europe. Articles often deal with feminist philosophy, feminist epistemology, and feminist theory. This journal has an impact rating of .163 and an immediacy factor of .036.

Hypatia: A Journal of Feminist Philosophy

Published quarterly by Indiana University Press
601 N. Morton Street / Bloomington, IN 47404
812-855-8817 / http://www.iupress.indiana.edu/catalog/index.php?cPath=519_580

The only journal for scholarly research dealing with the philosophy and women's studies, *Hypatia* publishes articles that reclaim the work of women philosophers. As a philosophy journal, *Hypatia* occasionally publishes articles dealing with epistemology. This journal is known as one of the best sources for the growing field of feminist philosophy.

Signs: Journal of Women in Culture and Society

The University of Chicago Press, Journals Division

P.O. Box 37005 / Chicago, IL 60637

773-753-3347 / <http://www.journals.uchicago.edu/Signs/home.html>

Signs is a leader in the discussion of gender and science. Articles are often interdisciplinary, approaching issues from a variety of perspectives. The editors seek articles from a wide range of voices and essays that will encourage debate. *Signs* also will publish articles that are in emerging fields of study, making it an early publisher of articles dealing with the intersection of knowledge, gender, and science. This journal has an impact rating of .772 and an immediacy factor of .128.

Social Epistemology

Published quarterly by Taylor & Francis

325 Chestnut Street / Suite 800 / Philadelphia, PA 19106, USA

800-354-1420 / <http://www.tandf.co.uk/journals/titles/02691728.asp>

Steve Fuller, a founder of social epistemology, founded the journal *Social Epistemology*. This journal addresses all aspects of social epistemology, including objectivity and feminist critiques. It is one of the longest running journals on the topic.

Bibliographies

Kusch, Martin. 1998. *Social Epistemology* [on-line]. Cambridge: University of Cambridge; available from <http://www.hps.cam.ac.uk/research/se.html>; Internet; accessed 10 November 2005.

Though this is not an incredibly thorough bibliography, it is still a useful one. Martin Kusch included entries divided into ten areas dealing with social epistemology. For researchers looking for more information on the context for feminist epistemology, this resource includes useful sources on introductions to the field, the history of social epistemology, and the direction social epistemology might take.

Ogilvie, Marilyn Bailey, and Kerry Lynn Meek. *Women and Science: An Annotated Bibliography*. Vol. 859. Garland Reference Library of Social Science. New York: Garland Publishing, Inc., 1996.

This bibliography is comprehensive and covers nearly every aspect dealing with women and science. Ogilvie and Meek alphabetized 2700 entries by author and assigned each a unique number. There are indexes by fields, nationality, periods, persons and institutions, reference, and themes, with each index entry linking to the identifying numbers. Researchers interested in gender, science, and knowledge would find the "fields" and "themes" indexes most useful. "Fields" pointed towards useful entries under terms like "epistemology" while "themes" included articles under topics such as "knowledge."

Wylie, A., K. Okruhlik, S. Morton, and L. Thielen-Wilson. "Philosophical Feminism: A Bibliographic Guide to Critiques of Science." *Resources for Feminist Research; RFR = Documentation sur la Recherche Feministe; DRF* 19, no. 2 (1990): 2-36.

This bibliography was created to aid research in the intersection of feminist epistemology and scientific methodology. Wylie, Okruhlik, Morton, and Thielen-Wilson conducted a systematic review of feminist critiques of science for this bibliography. It is organized by the core literature, discipline-specific critiques, and background literature. Though the works are not annotated, this bibliography is very thorough and includes long introductions to each section.

Reference Sources

Code, Lorraine. *Encyclopedia of Feminist Theories*. London: Routledge, 2003.

This one volume encyclopedia includes entries on all the major scholars in feminist epistemology, feminist science studies, and the feminist philosophy of science. It also contains articles dealing with many relevant topics including philosophy of science, knowledge, empiricism, fact/value distinction, naturalized epistemology, and objectivity. This is a comprehensive resource that includes cross references and bibliographies for each entry.

Craig, Edward, ed. *Routledge Encyclopedia of Philosophy*. 10 vols. New York: Routledge, 1998.

This is an incredible ten-volume resource for reference in philosophy. The entries are thorough and concise: they aren't overwhelming to someone just learning about the topic, but they give enough information for those with more than a beginning interest, but. This source does a good job of including feminist critiques and feminist philosophers along side traditional philosophy of science and social epistemology entries. Articles include "see also" references, bibliographies, and each entry is authored by a leader in the field.

Crossley, Nick. *Key Concepts in Critical Social Theory*. SAGE Key Concepts. London: SAGE, 2005.

This resource covers topics such as "epistemological break," "knowledge constitutive interests," "power/knowledge," and "social constructions/social constructivism." The entries are much longer than dictionary but still introductory. Entries include footnotes and recommendations for further reading.

Humm, Maggie. *The Dictionary of Feminist Theory*. 2nd ed. Columbus: Ohio State University Press, 1995.

This reference source offers entries that average just under a page. The information is more thorough than a traditional dictionary, yet brief enough for those who don't need an entire encyclopedia entry. Topics range from knowledge and epistemology to thinkers in the field such as Evelyn Fox Keller and Sandra Harding. This source would be most useful when used to supplement another source. For example, if one wanted to know the background of an author or have a better understanding of a topic that is only addressed tangentially within another article or book, this source would provide the needed level of information to become acquainted with a new concept.

McFadden, Margaret, ed. *Women's Issues*. 3 vols. Ready Reference. Pasadena, Calif.: Salem Press, 1997.

This encyclopedia is extremely thorough. Topics such as "science" are covered in many pages giving depth not found in some of the other listed reference texts. There are many black and white illustrations for topics included within some entries. Each entry includes a list of relevant issues, "see also" references, and a bibliography for further research.

Winqvist, Charles E., and Victor E. Taylor. *Encyclopedia of Postmodernism*. New York: Routledge, 2001.

The feminist critique of science takes place within the current postmodern system. Postmodernism and feminism share some characteristics, though they also differ in some aspects. This source provides the researcher with simple introductions to postmodern thinkers and ideas. The entries seem somewhat haphazard. For example, there isn't an entry for epistemology but there is for science and feminism. "See also" references and bibliographies for further reading are included with all entries. This book would be most useful when trying to understand parallel issues in postmodernism that are sometimes raised in scholarship on the feminist critique of science.

Zalta, Edward N., ed. *The Stanford Encyclopedia of Philosophy* [on-line]. Stanford: Center for the Study of Language and Information; available from <http://plato.stanford.edu>; Internet; accessed 2 September 2005.

The Stanford Encyclopedia of Philosophy is a dynamic reference source. For the last decade experts or groups of experts have maintained entries within their fields. All entries in the encyclopedia are refereed before publication. This source carries in-depth articles dealing with many of the topics included in this bibliography and are written by many of the authors included in this bibliography. Users can utilize keyword searching or browse the alphabetical list of entries. Entries are very thorough, include a list of sources both in print and on the Internet, and include links to related entries.

Books

Alcoff, Linda, and Elizabeth Potter. *Feminist Epistemologies Thinking Gender*, ed. Laura Nocholson. New York: Routledge, 1993.

The essays in this volume are written by some of the leaders in feminist epistemology as well as the feminist critique of science. Authors include Lorraine Code, Sandra Harding, Bat-Ami Bar On, Helen E. Longino, and Lynn Hankinson Nelson. All of these women are fundamental thinkers in their fields. The collected works support the theory that there is an intersection between politics and traditional epistemology. The common theme among chapters is that it is fundamentally flawed to think that knowledge can be studied without considering the involvement of politics. The essays illustrate the need to pay attention to how social values influence knowledge and support the case for studying the implications of a political structure in which the masculine is privileged. This is relevant for researchers in the feminist critique of knowledge as science can be viewed as a political structure that has privileged traditional masculinity in scientific methodology.

Antony, Louise M., and Charlotte Witt, eds. *A Mind of One's Own: Feminist Essays on Reason and Objectivity*. 2nd ed. *Feminist Theory and Politics*, ed. Virginia Held and Alison Jaggar. Boulder, Colo.: Westview Press, 2002.

Cited in many books, articles, and other texts listed within this bibliography, this is a foundational work in the field. It includes four chapters that deal directly with epistemology: "Essential Tensions—Phase Two: Feminist, Philosophical, and Social Studies of Science" by Helen E. Longino, "Quine as Feminist: The Radical Import of Naturalized Epistemology" by Louise M. Antony, "The Politics of Credibility" by Karen Jones, and "Though This be Method, Yet There is Madness in it: Paranoia and Liberal Epistemology" by Naomi Scheman. These chapters add to the discussion on feminist thought and traditional philosophy. They explore the pros and cons associated with reason and objectivity in philosophy and discuss the feminist thesis that these characteristics are gendered concepts allied with maleness.

Bar On, Bat-Ami, ed. *Engendering Origins: Critical Feminist Readings in Plato and Aristotle State University of New York Series Feminist Philosophy*, ed. Jeffner Allen. Albany: State University of New York Press, 1994.

The articles in this book focus on gender, but they also deal with science, dualism, and epistemology. The aim of this book is to introduce readers to feminist works on Platonic and Aristotelian texts. These texts are foundational to Western philosophy, culture, and ways of doing science. Many of the articles suggest that these foundational texts are plainly sexist and that has led to our culture having inherently sexist qualities. Since science exists within this culture, it can be extrapolated that science may also have inherently sexist qualities.

Bart, Jody. *Women Succeeding in the Sciences: Theories and Practices Across Disciplines*. West Lafayette, Ind.: Purdue University Press, 2000.

Women Succeeding in the Sciences: Theories and Practices Across Disciplines arose from a conference by the same name. The aim of this collection is to provide an appropriate venue for discussing gender and science. Since the study of gender and science is interdisciplinary, this work extends to science studies, sociology, philosophy, and anthropology. The second half of the book is most useful to those studying the gendered construction of knowledge in science with essays such as "Gender Bias in Biological Theory Formation," "Defending Feminist Territory in the Science Wars," "Strong Objectivity and the Language of Science," and "Feminist Theories of Knowledge: The Good, the Bad, and the Ugly."

Beauvoir, Simone de. *The Second Sex*. Trans. H. M. Parshley. New York: Vintage Books, 1989.

Some would argue that *The Second Sex* is the foundational work in the study of feminist epistemology. The book initiated the discussion of women as "Other" and set the stage for feminist knowledge studies. De Beauvoir discusses how women's status as outsiders looking in has impacted their participation in society and she overtly argues against the idea of absolute truth in a system in which men have primary power and control.

Bleier, Ruth. *Science and Gender: A Critique of Biology and Its Theories on Women*. Athene Series, eds. Gloria Bowle and Renate Duelli-Kleine. New York: Pergamon Press, 1984.

Ruth Bleier was one of the early feminist critics of science. She wrote this book in order to examine how science has participated in the creation of an "elaborate mythology" in Western culture that women are biologically inferior. The bulk of this book is useful to the scholar who is interested in how science is gendered (and how it perpetuates gendering) as a thorough case study of a particular science. The final chapter also discusses objectivity, truth, and the dualistic quality of Western thought. Bleier suggests that a feminist science would include an understanding of constant change, complexity, contextuality, and an understanding of the interaction between the natural and the social aspects of the world.

Bleier, Ruth, ed. *Feminist Approaches to Science*. Athene Series, eds. Gloria Bowle and Renate Duelli-Kleine. New York: Pergamon Press, 1986.

This collection of essays includes works by Ruth Bleier, Hilary Rose, Donna Haraway, and Sue V. Rosser and addresses topics such as "Critiques of Modern Science: The Relationship of Feminism to Other Radical Epistemologies" and "'Beyond Masculinist Realities: A Feminist Epistemology.'" Many of the included papers were first presented at a symposium, *Feminist Perspectives on Science*, at the University of Wisconsin, Madison, in 1985. The collection explores how science could be different, better, and feminist.

Bondi, Liz, Hannah Avis, Ruth Bankey, Amanda Bingley, Joyce Davidson, Rosaleen Duffy, Victoria Ingrid Einagel, Anja-Maaike Green, Lynda Johnston, Susan Lilley, Carina Listerborn, Shonagh McEwan, Mona Marshy, Niamh O'Connor, Gillian Rose, eds. *Subjectivities, Knowledges, and Feminist Geographies: The Subjects and Ethics of Social Research*. Lanham, Md.: Rowman & Littlefield Publishers, 2002.

These articles in *Subjectivities, Knowledges, and Feminist Geographies* are divided into four main sections: "Embodiment, Emotions, and Subjectivities," "Dualisms, Bodies, and Subjectivities," "Knowledges and Subjectivities," and "Intersubjectivities in Research Practice." The articles explore subjectivity and challenge the traditional idea that there can be a rational and bounded subject. The authors suggest that subjectivity is "spatialized" and embodied in fractured ways. The volume contains a usefully thorough index.

Bordo, Susan. *The Flight to Objectivity: Essays on Cartesianism and Culture*. State University of New York Series in Philosophy, ed. Robert C. Neville. Albany: State University of New York Press, 1987.

Bordo offers a different perspective on Descartes' Meditations: she considers the context and culture in which they were written. This is important to the study of gender, science, and epistemology, as Descartes epitomizes the modern idea of a rational, disembodied thinker. When Descartes made the statement, "I think, therefore I am," he was stating that his existence was real because of his thinking. Many feminist scholars argue that this leaves out the bodily experience required for the mind's existence and ignores those who made it possible for Descartes to be able to sit and think his thoughts. Bordo questions the masculine nature of contemporary science from this perspective of this critique of Descartes.

Clough, Sharyn. *Beyond Epistemology: A Pragmatist Approach to Feminist Science Studies*. Lanham, Md.: Rowman & Littlefield Publishers, 2003.

This pragmatic approach to feminist science studies is unusual in that Clough argues that feminist epistemologists are working on unanswerable problems. Clough contends that those creating a feminist critique of science should consider logical, empirical research and focus on the causal relationships that exist between academic feminist theories and the world.

Code, Lorraine. *Epistemic Responsibility*. Hanover, N.H.: Published for Brown University Press by University Press of New England, 1987.

This book was a recipient of the Brown University Press First Book Prize Award. Code states that this book grew from a feeling that there was something missing in philosophers' discussions of epistemology. She argues that it is necessary to consider who is making claims, when they are making them, and the circumstances in which they are made. She considers this book to be an important contribution to the discussion of epistemology as an addition of a new perspective. Researchers will find that the section on realism and understanding would be most useful in researching the feminist critique of science.

_____. *What Can She Know? Feminist Theory and the Construction of Knowledge*. Ithaca, N.Y.: Cornell University Press, 1991.

Code continues her project with *What Can She Know*. In this work she focuses on Simone de Beauvoir's claim that men, from their position of power, have described reality from their point of view and confuse this view with truth. She suggests that philosophy, as any institutional

discipline, has been ascribed with this masculine view of the truth. This is precarious as philosophy creates knowledge about women that impacts them. For this reason Code recommends a feminist understanding of knowledge construction and its impact on women. Specifically, she considers how mainstream philosophical and epistemic claims create a specific "terrain" in which women's knowledge and philosophical positions exist.

Creager, Angela N. H., Elizabeth Lunbeck, and Londa L. Schiebinger, eds. *Feminism in Twentieth-Century Science, Technology, and Medicine. Women in Culture and Society*, ed. Catharine R. Stimpson. Chicago: University of Chicago Press, 2001.

The aim of this collection of articles is to refocus on the ways that feminism has changed science, technology, and medicine and how those fields are now understood. The articles also consider how feminism has impacted women and the sciences.

Dolby, R. G. A. *Uncertain Knowledge: An Image of Science for a Changing World*. Cambridge: Cambridge University Press, 2002.

Dolby asks, "What is science? How is scientific knowledge affected by the society that produces it? Does scientific knowledge directly correspond to reality?" and "Is there such a thing as feminist science?" This text explores connections between history, philosophy, and the sociology of science. Case studies are included to illustrate some of the issues that are typically addressed in the abstract.

Duran, Jane. *Toward a Feminist Epistemology*. Savage, Md.: Rowman & Littlefield Publishers, 1991.

Jane Duran writes with a lofty goal: she aims to present an explanation of the possibility of a "rigorous feminist epistemology" as well as discuss the androcentrism that exists within traditional epistemology. She begins her work with an exploration of what counts as a theory of knowledge in feminist theory. She finishes by discussing how epistemology, though androcentric, can add to feminist theory.

_____. *Philosophies of Science/Feminist Theories*. Boulder, Colo.: Westview Press, 1998.

In this work, Duran write for anyone in the philosophy of science, philosophy, feminist theory, or sciences' who are interested in the feminist critique of science and the philosophy of science. For this reason the book is quite accessible to people who are looking for a broad introduction to the field. Duran's aim was to give readers an overview of areas that are crucial in this study including the radical critique of science. This book would be useful to those studying a specific aspect of the gendered nature of science as it would provide a wider context in which to place the issue.

_____. *Worlds of Knowing: Global Feminist Epistemologies*. New York: Routledge, 2001.

In *Worlds of Knowing*, Jane Duran examines philosophy in different feminist cultures. This book offers a different perspective, as it provides an understanding of feminist cultures in Asia,

Mexico, and Africa. Researchers may be interested in understanding how knowledge is perceived in different areas of the world in order to have a better idea of how Western epistemology is similar or different from other epistemologies. This can give researchers insight into Western ideas about knowledge and allow researchers to learn how different cultures view women's issues in epistemology.

Etzkowitz, Henry, Carol Kemelgor, and Brian Uzzi. *Athena Unbound: The Advancement of Women in Science and Technology*. New York: Cambridge University Press, 2000.

Science is presented as a social activity in this book. *Athena Unbound* doesn't address some of the more epistemic issues of interest to the feminist critique of science but it does address the practical side of the issue. This book covers topics such as the differences in education, graduate school, faculty experiences, and science culture for men and women. Though this work doesn't focus specifically on the gendered nature of knowledge, it does focus on what it is about the gendered experience that might lead to gendered knowledge.

Fricker, Miranda, and Jennifer Hornsby, eds. *The Cambridge Companion to Feminism in Philosophy*. New York: Cambridge University Press, 2000.

This work has several particularly useful articles including "Feminism in Epistemology: Exclusion and Objectification" by Rae Langton, "Feminism in Epistemology: Pluralism Without Postmodernism" by Miranda Fricker, and "Feminism in Philosophy of Science: Making Sense of Contingency and Constraint" by Alison Wylie. These writers were asked to contribute a chapter which would be an introduction to the feminist debate in an entire area of philosophy while contributing something new to the discussion. The papers were written for a general audience, so though there is original scholarship this paper are also good introductions to their topics.

Gergen, Mary McCahey, ed. *Feminist Thought and the Structure of Knowledge*. New York: New York University Press, 1988.

Born from the conference by the same name, held at the Delaware County campus of Penn State University in April of 1986, this book is comprised of chapters written by invited scholars from America, England, France, and the Netherlands. This conference was held at a relatively early time in the discussion of a feminist theory of knowledge, and marks an important step in the creation of new types of knowledge, as well as new theories and methods. Two particularly useful chapters are "Some Thoughts About the Masculinity of the Natural Sciences" by Ruth Hubbard and "Feminist Critique of Science and the Challenge of Social Epistemology" by Kenneth J. Gergen.

Goldman, Alvin I. *Knowledge in a Social World*. New York: Oxford University Press, 1999.

This book has long been considered one of the cornerstones of social epistemology. The book focuses on expanding epistemology to include social factors. This is a direct challenge to traditional Cartesian thinking where inquiry is the domain of independent thinkers. Goldman hopes to expand the consideration of epistemology to include interpersonal and institutional contexts in which thinking takes place.

Haraway, Donna Jeanne. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge, 1991.

Simians, Cyborgs, and Women is cited in much of the literature dealing with science and gender. This book specifically deals with the invention and reinvention of nature. Haraway divides the book into parts, where the first part examines the feminist debates on knowledge creation, the second part explores the power to "determine stories" about nature and experience, and the final part explores gender and cyborg embodiment.

Harding, Jan, ed. *Perspectives on Gender and Science*. New York: Falmer Press, 1986.

This book is a collection of articles from the 1985 meeting of Section X of the British Association for the Advancement of Science as part of the Women Into Science and Engineering (WISE) campaign. Several of the articles speculate, "Would science be different if more women were involved in its creation?" Experts in the field such as Evelyn Fox Keller contributed to this volume and essays deal with issues such as difference between women and male scientists, how to overcome dualistic world views, and several articles discussing whether gender really matters.

Harding, Sandra G. *The Science Question in Feminism*. Ithaca, N.Y.: Cornell University Press, 1986.

This work laid the foundation for feminist thought on knowledge and science. Sandra Harding has been a leader in the field for decades and began the articulation of her arguments in this work. In *The Science Question in Feminism*, Harding begins the discussion of inadequacies in the scientific community and how problems, theories, methods, and interpretations are influenced by gender.

_____. ***Whose Science? Whose Knowledge? Thinking from Women's Lives*. Ithaca, N.Y.: Cornell University Press, 1991.**

Whose Science? Whose Knowledge? is one of the foundational text on the topic of philosophy of science and gender. Section two deals with specifically with epistemology and discusses, at length, how the field should define feminist epistemology. Sections also deal with strong objectivity and socially situated knowledge. Harding discusses links to postmodernism. She also gives examples of situations in which "normal" science seems "strange" when viewed from a feminine perspective. This book builds on Harding's previous *The Science Question in Feminism*.

Harding, Sandra G., and Merrill B. Hintikka, eds. *Discovering Reality: Feminist Perspectives on Epistemology, Metaphysics, Methodology, and Philosophy of Science*. Vol. 161. 2nd ed. Synthese Library: Studies in Epistemology, Logic, Methodology, and Philosophy of Science, eds. John Symons et al. Boston: Kluwer Academic Publishers, 2003.

There are several useful works in this text including "Woman is Not a Rational Animal: On

Aristotle's Biology of Reproductions" by Lynda Lange, "Gender and Science" by Evelyn Fox Keller, "The Mind's Eye" by Evelyn Fox Keller and Christine R. Grontkowski, and "Why Has the Sex/Gender System Become Visible Only Now?" by Sandra Harding. This particular edition is a reissued edition, two decades after it was first published. Interestingly, the content is still relevant, but much more mainstream than when the work was first published. Many of the junior scholars who published in this text went on to be leaders in the field.

Harding, Sandra G. and Jean F. O'Barr, eds. *Sex and Scientific Inquiry*. Chicago: University of Chicago Press, 1987.

This book is the first volume of essays on the topic of gender and science from *Signs: Journal of Women in Culture and Society*. The second volume is titled *Gender and Scientific Authority*. There are five sections in this book. These five are all relevant to researchers in the feminist critique of science, particularly those who are looking for early works in the field. The five sections are: "The Social Structure of Science," "Misuses and Abuses of Science and Technology," "Bias in the Sciences," "Sexual Meanings of Science," and "Epistemology and Metatheory."

Hartman, Joan, and Ellen Messer-Davidow, eds. *(En)Gendering Knowledge: Feminists in Academe*. Knoxville: University of Tennessee Press, 1991.

This book specifically addresses gendered knowledge in biology and the physical sciences and includes works by leaders in the feminist critique of science such as Joan E. Hartman, Patricia Hill Collins, Sandra Harding, and Elizabeth Potter. The invited authors were scholars who were already critically examining their own fields. They were asked to focus on the foundation of their discipline and the way their fields were structured by sex-gender categories. The authors argue that people who create knowledge need to take responsibility for the cultural costs of their study.

Hartsock, Nancy C. M. *Money, Sex, and Power: Toward a Feminist Historical Materialism* Longman Series in Feminist Theory. New York: Longman, 1983.

This book changed the landscape of feminist theory. Nancy C. M. Hartsock uses this text to explore power: how people experience and understand it. She argues that Marx's social economic theory is inadequate because it doesn't address race or sex. Hartsock says that her primary concerns in *Money, Sex, and Power* are the relationship of gender to power and how social understandings of power have been distorted by gendered relationships. Though this book does not directly address science, the text is useful in its foundational role and as a framework from which to view science. If one considers who has power in science and how science is valued in society, this book can provide fruitful information on how that power is gendered.

_____. *The Feminist Standpoint Revisited and Other Essays*. Feminist Theory and Politics. Boulder, Colo.: Westview Press, 1998.

Feminist Standpoint Theory has widely been accepted (and debated) as an important feminist contribution to scholarship. Hartsock is one of the foundational thinkers in this specific theory. This book discusses some of the ties to Marxism and the idea of objectivity through a Standpoint

Theory lens. In general, this work considers political and social factors in knowledge production and discusses the work of Louis Althusser, Karl Marx, Levi-Strauss, Gayle Rubin, Richard Rorty, and Michel Foucault.

Harvey, Elizabeth D., and Kathleen Okruhlik, eds. *Women and Reason*. Ann Arbor: University of Michigan Press, 1992.

Women and Reason examines critical questions about the relationship between rationality and femininity and discusses the typical linkage of masculinity and science. The essays contained in this volume were collected with a focus on the idea that general explanations of rationality should be supplemented with or corrected with more specific, disciplined analyses.

Hekman, Susan J. *Gender and Knowledge: Elements of a Postmodern Feminism*. Northeastern Series in Feminist Theory. Boston: Northeastern University Press, 1990.

Many academics think that postmodernism has caused a crisis in contemporary Western thought. This is, in part, because postmodernism suggests a relativism in which it is impossible to know absolute truth. Feminism often takes a similar stance as postmodernism. Like postmodernism, feminism challenges fundamental, androcentric, and epistemological aspects of Western thought, but feminism is also slightly different. Despite differences, this book argues that both postmodernism and feminism offer a challenging perspective of the foundation of epistemology and a coalition between the two schools of thought would strengthen both their causes.

Keller, Evelyn Fox. *Reflections on Gender and Science*. New Haven: Yale University Press, 1985.

Evelyn Fox Keller is a leader in this field. She wrote this book early in the discussion of gendered scientific knowledge and began questioning the connection of reason as masculine versus subjectivity as feminine. She discusses how these gendered notions color the pursuit of science and scientific knowledge. Starting with a discussion of a gendered foundational philosophy, Keller finishes with an exploration of the possibilities of a gender-free science.

Keller, Evelyn Fox, and Helen E. Longino, eds. *Feminism and Science*. Oxford Readings in Feminism. New York: Oxford University Press, 1996.

This important collection of essays includes works by Evelyn Fox Keller, Donna Haraway, Sandra Harding, and Evelyn E. Longino. This book was compiled with a plan to assemble the most important articles in the field of feminism and science in the last decade and a half. The essays question if science be gender-neutral. Sociologists, scientists, historians, and philosophers contribute to the discussion of gendered science and analyze topics from the stereotype of the "Man of Reason" to the "romantic" language of reproductive biology.

Knorr-Cetina, Karin D. *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science*. Pergamon International Library of Science, Technology, Engineering, and Social Studies. New York: Pergamon Press, 1981.

Scholars who study the intersection of gender in science in knowledge production often focus on

the "manufacturing" or "creation" of truth, rather than the "discovering" truth that objectivists focus on. This book specifically focuses on this creation of information and uses an anthropological approach in its exploration. Knorr-Cetina specifically wrote this book to be a realist account of the gendered nature of science. This is particularly important as most thinkers automatically associate feminist critiques with relativist arguments and will often dismiss them as such.

Laslett, Barbara, Sally Gregory Kohlstedt, Helen Longino, and Evelyn Hammonds, eds. *Gender and Scientific Authority*. Chicago: University of Chicago Press, 1996.

This book is a second collection of essays from *Signs: Journal of Women in Culture and Society*. It builds on the first volume of these essays, *Sex and Scientific Inquiry*, edited by Sandra Harding and Jean F. O'Barr. This book contains an entire section on "Rethinking Knowledge" including Patricia Hill Collins's classic "The Social Construction of Black Feminist Thought." The authors share a feeling that gender issues need to be reintroduced to those with authority in knowledge creation, production, and dissemination. Particularly useful to the issue of gender, science, and knowledge is Mary E. Hawkesworth's "Knowers, Knowing, Known: Feminist Theory and Claims of Truth" which explores feminist epistemology and postmodernism's relevance to the movement.

Lederman, Muriel, and Ingrid Bartsch, eds. *The Gender and Science Reader*. New York: Routledge, 2001.

This book could be used as a text for a class on the topic of gendered science and knowledge. Many sections in the book are tangentially related to a gendered way of knowing. However, the most useful section is the third, "Analyzing Gendered Science." This section includes articles by Sue V. Rosser, Sandra Harding, Donna Haraway, and Helen E. Longino. This section delves into situated knowledge, feminist standpoint theory, and issues of power and knowledge.

Lloyd, Genevieve. *The Man of Reason: "Male" And "Female" In Western Philosophy*. Minneapolis: University of Minnesota Press, 1984.

The Man of Reason is an early work in the field. Genevieve Lloyd discusses the challenge of relativism to reason's claim to truth. Lloyd does not claim that women have their own truth or feminine criteria for belief, but rather that within Western philosophy, reason is perceived as masculine.

Longino, Helen E. *Science as Social Knowledge: Values and Objectivity in Scientific Inquiry*. Princeton: Princeton University Press, 1990.

Helen E. Longino is another leader in the feminist critique of science. This work filled a gap in the discussion in the early 1990s between the philosophy and social studies of science. This book shows science to be a process that exists within specific context. Longino argues that people need to understand the way that social expectations shaped science.

_____. *The Fate of Knowledge*. Princeton: Princeton University Press, 2002.

The Fate of Knowledge discusses the increasing recognition of social aspects of science as well as the growing understanding of plurality in scientific fields. This book aims to discuss the social context for scientific knowledge creation. Longino takes the stance that one doesn't have to choose between realism and relativism, that there can be a coexistence of both.

Maynard, Mary, ed. *Science and the Construction of Women*. Pennsylvania: UCL Press, 1997.

This collection of essays grew from a sense that feminist critiques had not reassessed the sciences in the same way they had in other disciplines. The essays explore the idea of science as a "male preserve" and the early feminist critique of male knowledge. Essays also tend to address the relationships between science and power, particularly in Western culture, where science gains some of its power from the exalted status of the scientific method as a truth seeking technique.

Megill, Allan, ed. *Rethinking Objectivity*. Post-Contemporary Interventions, eds. Stanley Fish and Fredric Jameson. Durham, N.C.: Duke University Press, 1994.

The essays in this book deal with the issue of objectivity and subjectivity. The aim of the essays is the discussion of subjectivity, as much of the contemporary discussion on objectivity is centered on issues that surround subjectivity. The feminist perspective on subjectivity and objectivity is addressed in this book in Mary E. Hawkesworth's "From Objectivity to Objectification: Feminist Objections" and Lorraine Code's "Who Cares? The Poverty of Objectivism for a Moral Epistemology." These two scholars emphasize that subjectivity is involved in many areas, even in those where it seems antithetical to the field.

Merchant, Carolyn. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. New York: Harper & Row, 1983.

This is another work that deals with the association of masculinity and rationality while femininity is considered subjective or feeling. Merchant takes this argument in a different direction, discussing how masculine sciences tend to view nature as a machine or something to be conquered, so it is leading to environmental destruction. She also discusses how the tie of femininity and "mother earth" allows for women to be viewed as something to be conquered. This school of thought inevitably leads to the ecofeminism movement. Researchers on the feminist critique of knowledge may be interested in this text as an example of how misplaced epistemologies may cause harm.

Morse, Mary. *Women Changing Science: Voices from a Field in Transition*. New York: Insight Books, 1995.

This text explores a number of theoretical topics relevant to the issue of gendered scientific knowledge. The first chapter, "From Isaac Newton to Ecofeminism: Bringing Women's Relevance to Science," discusses knowledge as gendered, the context of science, feminist empiricism, standpoint theory, and postmodernism. Other chapters question if there is a difference in gendered scientists and explore scientific culture. This book is accessible to people

who are new to the field, as it arose from *Utne* magazine. One of the editors encouraged Mary Morse to write the book because at the time there wasn't much popular media attention paid to women in the sciences.

Nelson, Lynn Hankinson, and Jack Nelson, eds. *Feminism, Science, and the Philosophy of Science*. Vol. 256. Synthese Library: Studies in Epistemology, Logic, Methodology, and Philosophy of Science, ed. Jaakko Hintikka. Boston: Kluwer Academic Publishers, 1996.

Feminism, Science, and the Philosophy of Science brings together original essays by feminist and philosophers of science that examine issues at the intersections of feminism, science, and the philosophy of science. This collection includes articles by Nancy Tuana and Sandra Harding. Contributors explore parallels and tensions between feminist approaches to science and other approaches in the philosophy of science. Authors explore ideas at the heart of the philosophy of science and epistemology including the nature of objectivity, truth, scientific method, and the relationship of science and values.

Noble, David F. *A World Without Women: The Christian Clerical Culture of Western Science*. New York: Oxford University Press, 1993.

This book explores the origins and implications of Western science's masculine culture. The synopsis on the cover ends with, "*A World Without Women* is essential reading for anyone concerned not only about the world of science, but about the world that science has made." This book tends to focus more on the facts of the exclusion than the epistemic outcomes of such exclusion

Rose, Hilary. *Love, Power, and Knowledge: Towards a Feminist Transformation of the Sciences*. Race, Gender, and Science, ed. Anne Fausto-Sterling. Bloomington, Ind.: Indiana University Press, 1994.

Love, Power, and Knowledge grew out of the article from *Signs*, "Hand, Brain and Heart." Hilary Rose grew up with a feeling of conflict between the hyper rational Nazi scientists and the scientific "promise" of a nuclear bomb. Rose felt that science, as it was, was not the whole picture. She formed a career of writing around these issues. Chapters in this volume deal with issues such as feminism and the academy, gender in the production of science, and considering what sciences might be like in the future.

Schiebinger, Londa. *The Mind Has No Sex? Women in the Origins of Modern Science*. Cambridge, Mass.: Harvard University Press, 1989.

This book was written to investigate the tensions between science and Western "femininity." Schiebinger questions why men don't want women in science and focuses on the beginning of the exclusion of women in the origins of modern science. This book is particularly useful to the feminist critique of science because it provides a focus on the beginnings of the masculine scientific culture and also because it explores the social aspects of science.

Schott, Robin May. *Discovering Feminist Philosophy: Knowledge, Ethics, Politics*. Feminist

Constructions, eds. Hilde Lindemann Nelson, Sara Ruddick and Margaret Urban Walker. Lanham, Md.: Rowman & Littlefield Publishers, 2003.

The task of this work includes an examination of feminist debates about theories of knowledge. This book deals generally with feminist philosophy and ideas about knowledge. It was written for professional philosophers as well as those who feel feminism could give them useful intellectual tools for their own studies. Schott explores feminist criticisms of knowledge discovery and the issues of knowledge/power relationships and how to de-center dominant discourse. The most useful section for those looking for information on feminist ideas about truth would focus on chapter two: "Feminist Epistemologies."

Searle, John R. *The Construction of Social Reality*. New York: Free Press, 1995.

This book is a classic in the area of the social construction of information. It considers this study in terms of reality. Searle asks how a world made up of social constructs like money, property, or power, can exist in a seemingly physical world of atoms, fields of force, and space. This book allows for realism while addressing issues typically addressed with relativism.

Sheffield, Suzanne Le-May. *Women and Science: Social Impact and Interaction*. Science and Society, ed. Paul Lawrence Farber and Sally Gregory Kohlstedt. Denver: ABC-CLIO, 2004.

Women and Science is an extensive book. There are many sections that would be useful to a researcher in this field. "Constructing a New Science: The Masculine Tradition" examines the beginnings of modern science and the maleness of it all. "Women's Bodies, Women's Minds: The Science of Women" discusses women as perceived as the "weaker sex" and biology as social destiny. "Women Doing Science" studies women scientists in a masculine science community. "Women's Education in Science," "Professionalizing Women Scientists," and "Women's Advancement in Science since World War II," discuss the beginning of the feminist critique of science. "Creating a Future for Women in Science" discusses "female-friendly science," and if there can be a feminist or feminine science. This book looks through a historian's lens and includes a chronology, glossary, documents, bibliography, and illustrations. Each chapter ends with a bibliographic essay in which relevant books, articles, and journals are discussed.

Shepherd, Linda Jean. *Lifting the Veil: The Feminine Face of Science*. Boston: Shambhala, 1993.

Lifting the Veil discusses the traditional masculine nature of science and argues for a less hierarchical version of science, one that includes a feminine perspective. Shepherd thinks that this inclusion would add a dimension of humanity to science as well as add an understanding of social responsibility to science.

Stolte-Heiskanen, Veronica and Feride Acar. *Women in Science: Token Women or Gender Equality?* ed. Nora Ananieva. New York: Berg Publishers Limited, 1991.

International in perspective, *Women in Science* deals with the status of women in science. Essays

discuss why the scientific community is reluctant to change. Authors suggest that science is a way of seeing things and that women represent a "blind spot." The writers of this volume explore why women are invisible in science and the power dynamics within the field.

Tuana, Nancy, and Sandra Morgen, eds. *Engendering Rationalities*. State University of New York Series in Gender Theory, ed. Tina Chanter. Albany: State University of New York Press, 2001.

This book addresses the philosophical discussion of rationality. Essays are divided into four sections: "Rethinking Epistemology: Realism, Truth, Objectivity," "Unveiling Rationality," "On the Matter of Knowing," and "Whose Stories? Which Biases?" Contributors include Lorraine Code and Nancy Tuana. These papers came out of the enGendering Rationalities conference, from the Center for the Study of Women in Society at the University of Oregon in 1997. Though the conference was multidisciplinary, this text focuses on philosophical works.

Tuana, Nancy, ed. *Feminism & Science*. Race, Gender, and Science, ed. Anne Fausto-Sterling. Bloomington: Indiana University Press, 1989.

This collection of essays includes works by leaders such as Sue V. Rosser, Sandra Harding, Helen E. Longino, and Evelyn Fox Keller. Articles are divided into two main categories: feminist critiques of the practice of science, which focuses on the feminist analysis of the epistemological "framework of modern science," and feminist theories of science, which focuses on critiquing how science is affected by and reinforces sexist, racist, homophobic, and classic biases. Notably, Keller and Longino emphasize that "feminine" and "science" are both social constructs. Harding, Keller, and Longino state that feminist science shouldn't be the goal—science should just be corrected so that it isn't sexist.

Varela, Francisco J., Evan Thompson, and Eleanor Rosch, eds. *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge, Mass.: MIT Press, 1993.

If there were a common ground between "mind in science" and "mind in experience," the authors of *The Embodied Mind* argue that we'd have a better idea of cognition. This book deals with a broad array of topics. Most useful to those interested in gender and knowledge would be chapters dealing with "Cartesian anxiety" which deals with the implications for the way subjectivity is understood in Western culture.

Wyer, Mary, Donna Cookmeyer, Mary Barbercheck, Hatice Ozturk, and Marta Wayne, eds. *Women, Science, and Technology: A Reader in Feminist Science Studies*. New York: Routledge, 2001.

A reading group at North Carolina State University gave rise to this book. The reading group was comprised of one social scientist and the rest were "hard" scientists. The book acknowledges barriers to integrating women and feminist studies into science. Since there are so few women there isn't a critical mass to discuss them as most women's studies people come from humanities or social sciences. Another issue that hinders feminist science studies is that other faculty enforces boundaries between disciplines and scientists don't normally have the training for

scholarship in gender issues. Section three, "Constructing Gender, Constructing Science: How Ideas about Women and Men Shape Science and Technology," and section four, "New Science, New Knowledge: Bringing Feminist Perspectives into Science and Technology Studies" are most useful for those seeking information on feminist scientific knowledge.

Zinsser, Judith P., ed. *Men, Women, and the Birthing of Modern Science*. DeKalb, Ill.: Northern Illinois University Press, 2005.

This book is a collection of essays from a conference sponsored by Miami University and the University of Cincinnati. There are three sections: one dealing with women who were natural philosophers or scientists, another dealing with the language of science and the interactive role that language has had with science, and the final section on the scientific establishment, which begins to discuss contemporary issues.

Special Journal Editions

Tuana, Nancy, ed. *Hypatia*. Vol. 2 issue 3 Special Edition of *Hypatia: A Journal of Feminist Philosophy Devoted to Feminism and Science*, 1987.

This issue of *Hypatia* deals with feminism and science. Feminist science scholar, Nancy Tuana, edited the issue and wrote the introduction. The many useful articles are as follows: "Feminist Scholarship in the Sciences: Where Are We Now and When Can We Expect A Theoretical Breakthrough?" by Sue V. Rosser, "The Method Question" by Sandra Harding, "The Gender/Science System: or, Is Sex to Gender as Nature is to Science?" by Evelyn Fox Keller, "Can There Be a Feminist Science?" by Helen E. Longino, "Is the Subject of Science Sexed?" by Luce Irigaray, "Uncovering Gynocentric Science" by Ruth Ginzberg, "Justifying Feminist Social Science" by Linda Alcoff, and "John Dewey and Evelyn Fox Keller: A Shared Epistemological Tradition" by Lisa Heldke.

Tuana, Nancy, ed. *Hypatia*. Vol. 3 issue 1 Special Edition of *Hypatia: A Journal of Feminist Philosophy Devoted to Feminism and Science*, 1988.

Nancy Tuana returned to edit this issue of *Hypatia*, also dealing with feminist issues in science. Articles in this issue are: "Science, Facts, and Feminism" by Ruth Hubbard, "Modeling the Gender Politics in Science" by Elizabeth Potter, "The Weaker Seed: The Sexist Bias of Reproductive Theory" by Nancy Tuana, "The Importance of Feminist Critique for Contemporary Cell Biology" by Athena Beldecos, Sarah Balley, Scott Gilbert, Karen Hicks, Lori Kenschaft, Nancy Niemczyk, Rebecca Rosenberg, Stephanie Schaertel, and Andrew Wedel, "The Premenstrual Syndrome 'Dis-easing' the Female Cycle" by Jacquelyn N. Zita, "Women and the Mismeasure Of Thought" by Judith Genova, "Dreaming the Future" by Hilary Rose, "Feminist Perspectives on Science" by Barbara Imber and Nancy Tuana, "Bibliography: Women in Science," and "The Feminist Question of the Science Question in Feminism" by Jacquelyn N. Zita.

Dissertations

Haely, Karen Cordrick. "Objectivity in the Feminist Philosophy of Science." Ph.D. diss., Ohio State University Press, 2003.

This dissertation addresses objectivity in the feminist philosophy of science. The author acknowledges that science is socially and culturally influenced. Haely discusses how many theorists think that these social and cultural factors should be considered in scientific work in order to have a better understanding of the world. She also discusses objectivity in philosophy of science and in epistemology. Finally, Haely considers feminist "warnings about "idealized" concepts of objectivity" and the power that plays a role in determining which areas of science are seen as objective.

Hundleby, Catherine. "Feminist Standpoint Theory as a Form of Naturalist Epistemology." Ph.D. diss., University of Western Ontario, 2001.

Catherine Hundleby's "Feminist Standpoint Theory as a Form of Naturalist Epistemology" argues that epistemology be more accurate if scholars thought it included feminist standpoint theory. Standpoint theory comes up in science and gender studies, as it is a theory of knowledge that arose out of feminist science studies but is also usually associated with Marxism. Hundleby also argues that the ways of getting to a belief, themselves, can be epistemically useful.

James, Christine Alicia. "Objective Knowledge in Science: Dialectical Objectivity and the History of Sonar Technology." Ph.D. diss., University of South Carolina, 2000.

This dissertation focuses on different areas within the philosophy of science and epistemology. Christine Alicia James discusses different definitions of "objectivity" with attention to objectivity in the sciences. James argues for a dialectical sense of objectivity. Her case uses the interaction between subject and object, and considers subjects in their social/historical context. Philosophers from Hegel to Latour and Adorno are examined to show the history of ideas leading to her claims. James concludes her dissertation by arguing that there is a relationship between the dialectical sense of objectivity and Sandra Harding's strong objectivity.

Janack, Marianne. "Objectivity Humanly Conceived: Subjectivity, Interpretation and Interest in Moral and Scientific Knowledge." Ph.D. diss., Syracuse University, 1996.

This dissertation discusses specific philosopher's beliefs: John Dewey's pragmatism, Richard Rorty's anti-foundationalism, Nietzsche's *Genealogy of Morals*, and several feminist thinkers. Chapter three focuses on Helen Longino, Lynn Hankinson Nelson, and Sandra Harding, who are working to build an objectivity which addresses feminist critiques. Their epistemology emphasizes the social nature of knowledge. Chapter five focuses on Lorraine Code. This chapter discusses the interrelationship of moral reasoning and scientific reasoning, that both effect how we understand the world, that feminist insights should be taken seriously, and that disagreements can sometimes enhance our understanding.

Linker, Maureen. "Rationalizing Epistemology: An Argument against Naturalism in Feminist Philosophy of Science." Ph.D. diss., City University of New York, 1996.

The dissertation examines recent work in social epistemology. It specifically focuses on how a person's social position plays into their judgment of beliefs. Maureen Linker investigates feminist epistemology and philosophy of science. She defends the involvement of feminist epistemology for analytic philosophy and examines feminists' reliance on naturalistic models of theory. Linker concludes that there should be a relationship between rationalized epistemology and feminist theory.

Rolin, Kristina Helena. "Gender, Emotions, and Epistemic Values in High-Energy Physics: A Feminist Challenge for Scientific Methodology." Ph.D. diss., University of Minnesota, 1996.

Kristina Helena Rolin's dissertation consists of two main parts. One develops a framework for philosophers to analyze gender influences on science even when the science is far removed from gender issues. In this section she argues that there is a possibility for gender to influence even the most "objective" sciences. The second part is a case study of high energy physics and the influence of gender on the field. She concludes that there needs to be supplemental tools in order to take into account how epistemic values are justified in science, as there aren't sufficient methods for identifying gender ideology in science.

Sherron, Catherine Elizabeth. "Critical Values: Feminist Philosophy of Science and the Computing Sciences." Ph.D. diss., University of Cincinnati, 2003.

Catherine Elizabeth Sherron's dissertation considers the junction of epistemology, philosophy of science, and feminist theory. This author focuses on using feminist philosophy of science to examine science, as it includes both the feminist critique and also philosophy of science. She focuses on the computing sciences. She examines the epistemological structure of scientific inquiry and explores the nature of objectivity. A main point in this dissertation is that social values do play a role in the discovery or creation of knowledge in science. Sherron merely uses gender as a perspective to use to find those values.

Vizedom, Amanda Jennifer. "Philosophical Knowledge as Social Knowledge: A Case Study in Social Epistemology." Ph.D. diss., University of Minnesota, 2000.

This dissertation, by Amanda Jennifer Vizedom, argues that philosophical knowledge is social knowledge. Vizedom takes the stance that philosophy can only be objective if philosophers pay attention to social factors—just as feminist critiques of science claim for that field. The aim of this work is to broaden feminist critiques of knowledge to another field in order to gain more ground for social epistemology. Vizedom focuses on social epistemologies in fields other than science, then science, itself, and then concludes with an argument for social epistemology rather than just epistemology.

Essays and Book Chapters

Code, Lorraine. "Voice and Voicelessness: A Modest Proposal?" In *Philosophy in a Feminist Voice: Critiques and Reconstructions*, ed. Janet A. Kourany, 204-230. Princeton: Princeton University Press, 1998.

This chapter begins with a starting point that if theorists could take stories into account, some of the "rifts in continuity" could be repaired. These rifts exist between moral theory and moral experience as well as between a theory of knowledge and cognitive experiences. Code discusses how knowing is a way of engaging with the circumstantial, social, physical, and material world.

Collins, Patricia Hill. "Moving Beyond Gender: Intersectionality and Scientific Knowledge." In *Revisioning Gender*, ed. Myra Marx Ferree, Judith Lorber, and Beth B. Hess, 261-284. Thousand Oaks, Calif.: Sage, 1999.

Patricia Hill Collins has written on feminist analyses of science since the mid 1980s. She argues that science was a driving force behind social policies on such damaging movements as colonialism, imperialism, slavery, and other social hierarchies. She asks if Western science continues to move us in this position and if feminist critiques challenge this negative aspect of science. Collins discusses how science, as a major role in Western thought, constructs practices that shape our reality.

Harding, Sandra. "Gender, Development, and Post-Enlightenment Philosophies of Science." In *Decentering the Center: Philosophy for a Multicultural, Postcolonial, and Feminist World*, eds. Uma Narayan and Sandra Harding, 240-261. Bloomington, IN: Indiana University Press, 2000.

In this chapter, Sandra Harding explores how "Enlightenment philosophies" and Western science have failed Third World development policies and the environment. She discusses how science is "androcentric" and "economistic." As a leader in the feminist critique of science, Harding raises many points from a feminist perspective and talks about real-world consequences of the gendered knowledge that is created.

Kourany, Janet A. "A New Program for Philosophy of Science, In Many Voices." In *Philosophy in a Feminist Voice: Critiques and Reconstructions*, ed. Janet A. Kourany, 231-262. Princeton: Princeton University Press, 1998.

This chapter begins with a discussion of how science was born of a masculine culture. Kourany describes how the 1960s saw a shift from a proscriptive to a descriptive philosophy of science. She says that though this was a good development, we won't see an outcome from it if philosophers of science do not acknowledge it. She says that most of the work done in this area has been by women scientists. She aimed to change that with this essay.

Longino, Helen E., and Evelyn Hammonds. "Conflicts and Tensions in the Feminist Study of Gender and Science." In *Conflicts in Feminism*, eds. Marianne Hirsch and Evelyn Fox Keller, eds., 164-183. New York: Routledge, 1990.

The aim of this essay is to find the "intellectual roots" of the difference in scope of feminist analysis and activism in the feminist critique of science. This team is particularly well suited to address this as Helen E. Longino is a feminist philosopher who often deals with science and Evelyn Hammonds is a physicist who has turned to studying the history of science. Part one of this essay addresses the political aspects of epistemological critiques and discusses the work of Ann Fausto-Sterling, Evelyn Fox Keller, Donna Haraway, and Sandra Harding. Part two deals specifically with the state of women in science.

Lowe, Marian. "The Impact of Feminism on the Natural Sciences." In *The Knowledge Explosion: Generations of Feminist Scholarship*, ed. Cheri Kramarae and Dale Spender, eds., 161-171. New York: Teachers College Press, 1992.

Marian Lowe discusses women's participation in science, the history of women in science, critiques of biological determinism, reproduction and the women's health movement, and finally feminist science and epistemologies. The article concludes with a discussion of where feminist science and epistemology might lead and an evaluation of objectivity and feminist epistemology. Lowe does not argue for relativism, but an acceptance that the dominant group defines the questions of science as well as the criteria that is used to judge the answers.

Nagl-Docekal, Herta. "Reason: A Concept with Connotations of Masculinity." In *Feminist Philosophy*, 87-132. Boulder: Westview Press, 2004.

Nagl-Docekal wrote this chapter with the premise that reason is "connotated" in a masculine way. "Reason" and "emotion" are seen in a binary opposition with "masculine" though, putting reason in a privileged position. Nagl-Docekal suggests that Evelyn Fox Keller doesn't always analyze scientific rationality and reason in plausible ways, and the author discusses what she believes to be a more plausible one.

Saul, Jennifer Mather. "Feminism, Science, and Bias." In *Feminism: Issues and Arguments*, 232-260. Oxford: Oxford University Press, 2003.

This is a good, basic, introduction to the topic. Saul explains terms without a lot of jargon. The chapter discusses standpoint theory, scientific communities, and feminist epistemology. There is a basic, but thorough, list of recommended reading for different topics including feminist criticism of scientific practices, standpoint theory, scientific communities, and feminist naturalized epistemology.

Winders, James A. "Writing Like a Man (?): Descartes, Science, and Madness." In *Gender, Theory, and the Canon*, 24-47. Madison: University of Wisconsin Press, 1991.

James A. Winders argues that it is "long overdue for gender questions to become the central preoccupation of intellectual history." This chapter is part of that challenge and starts by discussing Descartes' Meditations. Winders explores the Cartesian model of knowledge and discusses feminist thinkers such as Evelyn Fox Keller and Luce Irigaray.

Selected Journal Articles

Anderson, Elizabeth. "Feminist Epistemology: An Interpretation and a Defense." *Hypatia* 10, no. 3 (1995): 50-84.

Elizabeth Anderson explores the predominant ways of understanding feminist epistemology. She argues that though it has often been comprehended as feminine "ways of knowing," feminist epistemology can be better understood as part of naturalized, social epistemology. In this branch of philosophy feminist epistemologists can study influences of gender and gendered interests on the creation of knowledge. This way of understanding feminist epistemology also removes the issue of fundamental gendered differences in thinking and allows serious critiques of mainstream research.

Bleier, Ruth. "The Cultural Price of Social Exclusion: Gender and Science." *NWSA Journal* 1, no. 1 (1988): 7-19.

Ruth Bleier was a pioneer in the feminist critique of science. Before its publication in the *NWSA Journal*, this paper was the last that Bleier completed before her death and was read for her at the American Historical Association meeting in Washington DC in December 1987. This paper considers how women and minorities have been excluded from the sciences, which led to the sciences giving primary attention to the interests of the dominant, white, male practitioners. Bleier argues that there is a "cultural price" that society pays for the exclusion of women: if science were more inclusive it wouldn't focus on dominance, power, superiority, control, and other interests of the masculine in science.

Crary, Alice. "A Question of Silence: Feminist Theory and Women's Voices." *Philosophy* 76, no. 297 (2001): 371-395.

This article considers recent movements in feminist epistemology. Crary focuses on whether, and in what ways, knowledge is biased by gender. She has two aims in her article. One goal is to demonstrate the problems within feminist epistemology. The other is to illustrate useful methodologies that can lend to practical feminist thought as well as feminist action.

Gorham, Geoffrey. "The Concept of Truth in Feminist Sciences." *Hypatia* 10, no. 3 (1995): 99-116.

"Truthlikeness" is a concept that is introduced in this article. In this way, Geoffrey Gorham suggests a change in the terminology. He argues that the aim of feminist science is truthlikeness. He says that truthlikeness, instead of absolute or relative truth, can show an objective advance from feminist epistemology. Gorham specifically suggests a non-linguistic theory of truthlikeness that complements predominant scholars such as Sandra Harding, Donna Haraway, and Helen E. Longino.

Harding, Sandra. "How the Women's Movement Benefits Science: Two Views." *Women's Studies International Forum* 12, no. 3 (1989): 271-283.

Sandra Harding asks, "What resources does the women's movement bring to the growth of scientific knowledge?" In this article she discusses different perspectives of women in science, feminist politics, and feminist theories about science. She describes the differences between the arguments against "bad science" and the arguments against "science as usual," laying the foundation for her later books.

_____. "Women as Creators of Knowledge." *American Behavioral Scientist* 32, no. 6 (1989): 700-707.

Sandra Harding questions what "professional education" for women in the sciences should be in the context of science in contemporary culture. She says that though feminist critiques of science have provided useful research, they lead to a loss in the assurance of science. Today, in the West as well as in the Third World, science is seen by some as a negative power that diminishes the quality of life, and creates a problematic morality.

Hawkesworth, Mary E. "Knowers, Knowing, Known: Feminist Theory and Claims of Truth." *Signs* 14, no. 3 (1989): 533-557.

There is a movement for feminist to save their claims from trivialization by demonstrating the truth and consequences of them. There is also a growing movement of those who see science as androcentric. These trends lead to a need to find the difference between knowledge and prejudice as well as a recognition that what we have perceived to be true about the nature of knowledge actually has political implications. The author of this article argues that in this situation there are political and intellectual reasons to select critical feminist epistemology instead of postmodernism.

Hekman, Susan. "Truth and Method: Feminist Standpoint Theory Revisited." *Signs* 22, no. 2 (1997): 341-365.

This article discusses the movement from feminist standpoint theory of the early 1980s to the feminist theories of the 1990s and their epistemologies. The 1990s found feminism as a way to approach life and politics. Susan Hekman notes that feminist standpoint theory can be described as "situated and engaged knowledge" and still has a lot to offer. She suggests describing it as the ideal epistemology.

Holler, Linda. "Thinking with the Weight of the Earth: Feminist Contributions to an Epistemology of Concreteness." In *Hypatia* 5, 1-23, 1990.

Linda Holler's article argues that feminist epistemology needs to move toward an "embodied rationality" that understands knowing as a specific relationship between two entities. She argues that postmodernism needs to stop looking at the world and ground cognition within it.

Keller, Evelyn Fox. "Feminism and Science." *Signs* 7, no. 3 (1982): 589-602.

Evelyn Fox Keller argues against relativist feminist theory that would separate women from mainstream culture. In this article she suggests that feminist thought should clarify elements of science. Keller says that this move would save the things that we have learned from science, as well as add another dimension to that knowledge. This article also examines different feminist criticisms of science.

_____. **"Feminism as an Analytic Tool for the Study of Science." *Academe* 69, no. 5 (1983): 15-21.**

Keller wrote this article for the bulletin of the American Association of University Professors. As such, the intention is that this work is for a general, well educated audience, and it is a wonderful introduction to the beginnings of the discussion of the feminist critique of knowledge. Keller starts by explaining that feminism is a lens through which to examine human experience. She uses the lens to view science and to see where science excludes women or makes subjective claims appear to be objective. She describes the social community of science, the use of dominance and conquest as a large part of the vocabulary of science, and aggression in science.

Kukla, Rebecca, and Laura Ruetsche. "Contingent Natures and Virtuous Knowers: Could Epistemology Be 'Gendered'?" *Canadian Journal of Philosophy* 32, no. 3 (2002): 389-393.

The authors of this article explore traditional epistemology to find different ways of rationality that have been part of the discussion all along. They then examine these rationalities in light of feminist epistemologies and argue that there can be a rational epistemology that addresses feminist epistemological concerns.

Leavitt, Judith Walzer, and Linda Gordon. "A Decade of Feminist Critiques in the Natural Sciences: An Address by Ruth Bleier." *Signs* 14, no. 1 (1988): 182-195.

This article comes from an address given by Ruth Bleier. It explores several issues such as why there are so few women who are doing a criticism of science: how women scientists see themselves (as like men), how women's values and viewpoints have been rejected as irrelevant to science, how it is unusual for an experimental scientist to also be a sociologist or philosopher or critical theorist, how often if there is a woman interested in these issues she is often alone in her department, and how there haven't been as much work in the realm of women's studies on science as there have been in others.

Longino, Helen E. "Multiplying Subjects and the Diffusion of Power." *Journal of Philosophy* 88, no. 11 (1991): 666-674.

This article argues for a method of epistemology that exposes aspects of knowledge construction that are not seen in traditional epistemology. To do this Helen E. Longino argues that the structures of cognitive authority need to change. She makes a case that no group within a community can claim privilege with relation to truth and that to remove privileged structures scholars need to have an understanding of the role of power in knowledge creation.

_____. "In Search of Feminist Epistemology." *Monist* 77, no. 4 (1994): 472- .

Longino goes on to argue in this article that feminist epistemology should be seen as a practice rather than an object. She says that to do so will lead to an evaluation of the analysis that comes from feminist epistemology, but that it wouldn't necessarily counter the arguments of epistemology.

Nelson, Alan. "How Could Scientific Facts Be Socially Constructed?" *Studies in History and Philosophy of Science* 25, no. 4 (1994): 535-547.

Case studies have been used in this article to illustrate the constructive nature of science. Alan Nelson says that though the scholars studying these types of case studies are typically sociologists or historians, they sometimes have made meaningful contributions to the philosophy of science. This article evaluates this type of scholarship on the issues on which constructivists and rationalists differ. This article is useful to the feminist epistemologist or feminist philosopher of science because it is essentially about relativism.

Nelson, Lynn Hankinson. "The Very Idea of Feminist Epistemology." *Hypatia* 10, no. 3 (1995): 31-49.

This article discusses the reactions to feminist epistemology by feminist theorists as well as more mainstream thinkers. The article considers the reasoning for these reactions and the implications the reactions have. Nelson ends by arguing that feminist epistemology shows that the philosophy of science and epistemology are not "dead" as some have proclaimed. She argues for a feminist epistemology that that can be used to organize, explain, help people understand their experiences, and be used to improve current epistemic practices.

Pinnick, Cassandra L. "Feminist Epistemology: Implications for Philosophy of Science." *Philosophy of Science* 61, no. 4 (1994): 646-657.

Cassandra Pinnick examines the work of Sandra Harding, which are the best contemporary arguments for a feminist epistemology of scientific knowledge. She asserts that feminist epistemology cannot break away from relativism, and so is not a good method. Pinnick claims that relativism, which is wide spread in the social sciences and in the humanities, now takes aim at science. Of the possible feminist epistemologies, Pinnick says that standpoint feminism is the best option.

Rolin, Kristina. "Why Gender Is a Relevant Factor in the Social Epistemology of Scientific Inquiry." *Philosophy of Science* 71, no. 5 (2004): 880-891.

Kristina Rolin suggests that feminist philosophers of science contribute to the field in two main ways. One is that they have given gender-sensitive analyses of the social aspects of science. The other is that they examine the usefulness of these critiques for normative issues in philosophy of science.

_____. "Gender Equality in Science: A Philosophical Perspective." *Higher Education in Europe* 25, no. 2 (2000): 201-204.

Scientists often see feminist critiques as a social policy intrusion on objective science. This article discusses how feminist critiques can reach the science community when put in terms that the community understands such as objectivity, rationality, and truth. If arguments are put in this context, the scientific community may begin to understand feminist critiques and then gender equality might become a possibility within science.

Rosser, Sue V. "Good Science: Can It Ever Be Gender Free?" *Women's Studies International Forum* 11, no. 1 (1988): 13-19.

This argument examines the tension between the idea that there can be a feminist science and the idea that good science should be gender neutral. Sue V. Rosser examines some feminist discussions of gender free science that points towards a false binary opposition between nature and nurture. She also argues that while society is gendered (as well as differentiated according to class, race, and sexual orientation), science has to be assumed to be affected by the gender (class, race, or sexual orientation) of the scientists. She concludes that it might not be necessary to develop a feminist science if science were more inclusive.

_____. "Are There Feminist Methodologies Appropriate for the Natural Sciences and Do They Make a Difference?" *Women's Studies International Forum* 15, no. 5/6 (1992): 535-550.

This article considers the questions that surround feminist methodology for the sciences. Rosser finds that the answers are complicated and often depend on the feminist theory that the methodology is founded on. The article points out that there is a patriarchal context for science, so it is likely that feminist methodologies would impact the scientific culture.

Tuana, Nancy. "Material Locations: An Interactionalist Alternative to Realism/Social Constructivism." [on-line]. Eugene, Oreg.: University of Oregon; available from <http://www.uoregon.edu/~uophil/faculty/ntuana/material.html>; Internet; accessed 2 September 2005.

Located on Nancy Tuana's former personal page hosted by the University of Oregon, "Material Locations" is based on an earlier version that was written for a session on feminist epistemology that was held at the University of Cincinnati with Lorraine Code, Sandra Harding, and Lynn Hankinson Nelson. This analysis was written to contend with the idea of the social construction of ideas around the material location of items. She suggests that feminist epistemology and science have identified the necessity to examine the implications of embodiment and the relationship of the knower to the known object.