Book Reviews

*Essays About the English Language, Western Science, Patterns of Thought*

Sometimes an editor feels a serendipitous symbiosis among essays received and/or books sent for review. That has happened with papers received and considered for this issue of *Women and Language*. And for that reason, the following group of papers is presented together. We have first an essay by M. J. Hardman, in which she provides fundamental insights into the connections among gendered thought patterns reflected in the English speaker's talk. Then we present two reactions to the collected essays of Evelyn Fox Keller, *Secrets of Life, Secrets of Death: Essays on Language, Gender and Science*. For that reason, we devote more space than usual to book reviews. We combine two original reviews of Keller's book with excerpts from a review by Anne Fausto-Sterling in the May 1993 *Women's Review of Books*. At the same time, we invite your attention to the summary of Julia's *Penelope's Speaking Freely* and to the review of that book we previously published (Fall 1991). We hope to stimulate ideas and commentary on the usually unseen patterns of thought that perpetuate gender bias even when the words themselves may appear to have been "cleansed" of such biases.

*Gender through the Levels*

By M. J. Hardman

"To act in a way that is both sexist and racist, to maintain one's class privilege, it is only necessary to act in the customary, ordinary, usual, even polite manner."

Joanna Russ

Language permeates all we are as human beings, both within ourselves and in all our interactions without. As humans, our language provides for us the necessary structure for perception and for action. Different languages provide different structural principles for their respective speakers. By the time we are six years old we quite naturally assume the structural principles provided by our own language to be those of the universe; such an assumption is necessary to the acquisition of one's first language and culture. Some of the structural principles of English, the linguistic postulates of English, lead us to what I call 'derivational thinking' which makes it difficult for us to perceive women or the work women do as autonomous.

In working with the Jaqi languages of the Andes of South America, I gradually became aware of how the structural principles of these languages contrasted sharply with those of my own language in precisely the areas which make our perceptions of women so difficult.

I have developed the concept of the *linguistic postulate* to account for the way in which themes/concepts are manifested structurally across all the levels of a grammar within a given language and culture.

The grammar of any given language will typically demand that high-level linguistic postulates be specified in virtually every sentence of the language. In this way, by the time that a child has acquired her language, and her culture as well, her cognitive system automatically encodes the relevant linguistic postulate features from any experience. Thus, we accept the linguistic postulates of our mother tongue without argument or discussion, as natural parts of the universe, an example of nurture becoming nature for the participants. In fact it is so difficult to imagine 'real' human beings operating without one's own linguistic postulates that it verges on the impossible. Linguistic postulates form the major structuring and selecting grids for the perception/cognition within any given language/culture.

Linguistic postulates must, however, be taught to children. As underlying assumptions they are particularly powerful, and they are also typically reflected in proverbs, sayings, and/or typical admonitions to children. For example, English speaking children are admonished with a sex reference, typically 'Be a good girl' or 'Be a good boy'. In the Jaqi languages, with the linguistic postulate of human/non-human, children are admonished to 'Act like a human' or they are accused of not treating someone else as a human.

Linguistic postulates are also built into the vocabulary structure as well as the grammatical structure. For example, verbs and nouns in the Jaqi languages carry a covert mark of human or non-human, like many of our English terms carry such a covert gender mark, e.g. Mary, ship. Frequently the postulates also serve as major classifying devices for other types of behavior, most frequently without intellectual and/or conscious justification. When challenged, the most common native reaction is 'But it's natural!' When one discovers, at last, a linguistic postulate while doing field work, and shares such a marvel with one's consultants, the usual reaction is—well, of course, everybody knows that, or well, only 'gringos' could be so dumb as to not know. It
has even been argued that surely we make such a distinction, even if it is not visible in our grammar. (Cf Carpenter, 1981.)

One such postulate in English is number. It is difficult to produce a sentence in English in which there is no singular or plural mark, and correlatively, we think of the unmarked number, singular, as being primary. If you doubt this, try thinking of a such a sentence. It is possible, but such sentences can't say much.

Marked versus unmarked is a linguistic concept referring to the fact that for some grammatical categories one form is the base on which the other form is constructed, i.e. one form is unmarked, the other marked. In English number, the unmarked (singular) is the primary.

Number, specifically singular versus plural, is a major postulate for all Indo-European languages. Some languages mark it more overtly than others; some limit it to nouns and verbs, some include adjectives, marking number in both morphological and syntactic constructions by agreement and/or governance. English marks number overtly in nouns, pronouns, and verbs and requires syntactic agreement. For English, cultural correlates of the number postulate are immediately obvious: in proverbs (one thing at a time); in our adulation of linear work; in our obsession with monotheoretical stances in academia and its concomitant throwing out of all else in favor of the new one, with monotheism in religion, with singular causes in history; in the sponsoring of monocropping in agriculture, even to single species of a single crop; in seeing singular causes of diseases with singular cures. Consider the epithet some have tried to make of 'eclectic.'

These Indo-European postulates contrast with those of the Jaqi languages of South America, for example. The Jaqi languages include Aymara, the native language of a third of the population of Bolivia and the major language of southern Peru and northern Chile, and two languages in Peru with very few speakers, Jaqaru and Kawki. These languages are the remnant of what was, before the Incas, the largest of the economic 'empires' of ancient Peru (Hardman, 1985). My own work among the Jaqi peoples now spans more than a quarter of a century (Hardman, 1966, 1983; Hardman et al., 1975, 1988). The two major postulates of these languages are Data Source and Humanness.

The linguistic postulate of Data Source means that the speakers indicate, in virtually every sentence, the source of the knowledge the sentence imparts. The three basic categories of data source in the Jaqi languages organize experience for the Jaqi speakers as singular and plural do for us. The first is Personal Knowledge which is the unmarked category for verb tenses but does require a sentence suffix, -wa; this category is that of personal witness. The second is Thru-Language Knowledge, which is all knowledge acquired because you heard someone say it or because you read it. The third is Non-personal Knowledge which typically requires special verb conjugations and which includes all knowledge from myth, legend and history for which there are no living witnesses. On the basis of these three categories the Jaqi languages each build an elaborate structure with endless nuances of data source. In the Jaqi languages it is virtually impossible to utter any sentence without indicating the source of one's data.2

Also, like us with our postulate of number when learning other languages, Jaqi people learning English will protest that it can't possibly be true that one can speak a language without marking data source. It is only human to do so. Data source in the grammar of the Jaqi languages was not discovered in the nearly 500 years since the arrival of the Spanish because the Aymara presumed that the Spanish and speakers of other European languages making data source mistakes were simply acting their usual non-human manner.

At one time the Jaqi were the dominant people in the Andes, and they, like us, also imposed their postulates on the people they came in contact with. Today the other languages of the Andes, Quechua and Andean Spanish, also reflect these same three basic categories of data source (Hardman, 1982; Martin, 1981a & b; LaPrade, 1976, 1981).

The second linguistic postulate of the Jaqi languages that I wish to describe here is that of human/non-human. This correlates in function to our sex-based gender system. The grammatical base consists of two sets of pronouns, one for humans, one for all else. Referring to humans with the non-human set is, in Aymara, a good way to pick a fight, analogous to using a woman term for a man in English. Since the non-human pronouns are translated with the English terms 'this' and 'that' (and the Spanish equivalents), non-Aymara speakers may unwittingly find themselves in the position of having seriously insulted Aymara people. Also many verbs, nouns, and adjectives carry in their meaning covert reference to human or otherwise, a meaning that is not obvious in the translations, and again leads to serious misunderstandings. Vocabulary words for people are clearly distinguished from those for animals. Correlating with this, since there is no sex postulate, words which specifically refer to women are not derived from the paired item referring to men.

As a correlate of the humanness postulate, it is never a compliment to refer to a human being in animal terms. Children are admonished to behave like people.
(not animals) or to treat others as people (not animals). In a quarrel, to accuse the other of not behaving like a human is a particularly nasty insult. In Aymara, the verb 'to marry', the same for both sexes, /jaqichasiña/, means literally 'to cause oneself to become a human being,' that is, to assume full human responsibility and relationships within the community; this human status is the goal for the children.

Postulates are learned, they are not part of the common human heritage. The linguistic postulate that is of concern in this paper is that of sex-based gender in English, which, like humanness in Jaqi, is partly covert and partly overt. Its distinguishing feature is that the feminine is derived from the masculine. This postulate permeates every level of grammar, and has reflexes in the culture.

Because linguistic postulates are learned so early and because they interplay in the physiology of the brain (Tsunoda, 1985) our perceptions are guided by these structural principles. In any ordinary circumstance we project onto any new event or person the structures we already know. In this way, for example, women of non-European societies lost status with the imposition of colonialism, precisely because the European men could not/would not interact with a woman in power nor would/could they even recognize the full personhood of women.

Sex-based derivative gender is realized in all levels of English structure. Some of these levels have been quite thoroughly explored by other scholars; some have not. Under the concept of the linguistic postulate I tie these structures together, showing a common motivation in the varying manifestations.

Sex and/or gender marking (seen as synonymous in Indo-European grammar [Miller, 1976] whether they are or not) is, in Indo-European, of the sexist variety in that the male is seen as the prototype and the female as a secondary derivative, such that if the male is known, the female can be described with reference to him, or constructed from him, but not vice versa. Even the word female, from the French femme in diminutive, was reformed in English to look like it was derived from 'male' even though it wasn't (cf McConnell–Ginet, 1980; Kramarue, 1981; Martyna, 1980).

Refer to Figure 1 to follow the map as we trace gender through the levels of English.

The level of syntax and discourse, that of the sentence and the paragraph and the dialogue, have been dealt with at length by Elgin (1989), Tannen (1986), Penelope (1990), and others. This includes the differing ways in which women and men converse, the different meanings attributed to what appear to be common sentences and conversational strategies, and the differing semantics for what would appear to be the same words, including the differing metaphors by which we structure our perceptions.

The material that these scholars have dealt with gives us some of the reasons for breakdowns in our daily communications. One metaphor misce ec Elgin discusses, for example, is the use by women of a schoolroom metaphor in cross with a sports metaphor preferred by men. In terms of semantics this root metaphor means that for women 'failure' carries a semantic burden of 'final'; for the other metaphor it does not. This is not biological in any way; for Japanese men, working out of a vastly different structure, 'failure' carries an even stronger semantic weight of 'final' than it does for those of us operating on the schoolroom room metaphor. Elgin also deals with the verbal abuse that comes from 'intelligent, educated, good' men. Tannen deals with purpose in conversation, specifically that women talk to form community, men to form hierarchies. You will note that the classroom is, ideally, a community, but that the purpose of sports is to outrank someone else. In this way the work of the two scholars can be seen as complementary, and we begin to understand why intimate conversation is so difficult.

Another aspect, beyond the scope of this paper, are what I call the "semenal" metaphors—the way in which scientific theory is couched in language reflecting men's sexual beliefs, a further manifestation of this linguistic postulate. Keller's 1985 work speaks to this.

Also in discourse and syntax we find the studies that have addressed the myth of the quantity of women's speech, as study after study shows great constancy in the larger portion of any mixed sex conversation going to the men. If we think of this in derivational terms, then we can see that the root must, of course, have more time and more space than its derivation.

Two other aspects of syntax are of interest here.

In English the subject is prime. In linguistics we even speak of 'raising the object to subject position' to form the passive. Subjects are obligatory; objects are not. The title of a recent movie, purporting to treat the subject of friendships between women and men was titled 'When Harry Met Sally', Harry in the subject position, and Sally guess where? One of the marks of 'derivational thinking' is keeping women out of subject positions. Textbooks in linguistics, for example, are notorious for examples of the type 'John hits Mary', never the reverse. Recently on our campus the students challenged one professor; he tried but had great difficulty imagining Mary in subject positions! (Maranzana, 1992)
Also, in English normal syntactic ordering is not women and men, but men and women, not female and male, but male and female, thus reinforcing the derivational order and also in this ordering reinforcing the nexus of male and one, leaving men singularly first even when plural.

The level of vocabulary is the level we are most clearly conscious of and is the level that has been most popularly explored. Penelope (1990), among others, has done a great deal of work with vocabulary. Because of the nature of the postulate it is difficult for words referring to women to remain positive or words referring to men to remain negative. For any sentence of the type, woman is _______, the item in the blank has a strong tendency to become deprecative; it is very difficult to make it otherwise. On the other hand, with the male as unmarked and prototype, it is difficult to keep anything unambiguously bad; even such things as assassin turn out to be admirable ‘anti-heroes’! The word ‘macho’, which feminists had hoped to make into an insult, is an example. Equally, words referring to women are always insults when applied to men. I.e., if it is good for a woman, it is bad for a man. This includes not only specifically woman words, but adjectives referring to peaceful and nurturing qualities. In terms of derivational thinking, whatever belongs to the derivation must be stripped away from the unmarked root, otherwise the root might become the derivation.

The postulate has, perhaps, its most powerful realization at the grammatical level of the English language, not only because of its own characteristics, but because it is reinforced by two complementary postulates. The three basic obligatory constructions, all linguistic postulates, interplay together to reinforce each other. These are: number, hierarchy, gender.

Number is overtly obligatory and pervasive, as illustrated above. Singular is the unmarked category, and the category that carries the semantic freight of ‘best’ oh to be Number One!

The second structure is the comparative/absolute (wise, wiser, wisest) which means constant hierarchy in our speech and our perceptions. Unranked comparison, which we label as a ‘figure of speech,’ the simile, is interestingly, grammaticalized in the Jaqi languages, but Jaqi does not have our type of ranking comparative. The ranking comparative/absolute structure does not appear, at first glance, to be obligatory, but in interplay with the other two, does indeed function in this way, in mutually reinforcing fashion. We talk about equality as a topic but in our daily speech enunciate constant hierarchy. If you doubt me, try doing without a comparative or an absolute for even an hour. I require my students to try it for 24 hours; so far no one has made it.

In contrast many languages have no ranking comparative at all, including the Jaqi languages. It may be that we must talk equality if we wish any at all, because we so easily and consistently lapse into hierarchy. In contrast, the Japanese talk hierarchy constantly because, according to Mizutani (1981), the moment they stop they lapse immediately into equality. (A culturally correlative example of this is that now well-known statistic that the Japanese CEO’s are paid 16 times the salary of the lowest paid member of the firm; ours are paid 160 times that salary). We might think also of our constant ranking of students, the power of standardized tests, the importance given to even a hundredth of a second, the judgments of experiences by ‘What did you like best?’, etc. It is a constant experience of my students to discover that they must suddenly pay actual attention to the attributes of people and objects when they can no longer simply rank. Notice that this postulate is mutually reinforcing with one, in that only one can be at the pinnacle of our type of hierarchy.

The third structure is, of course, sex-based gender, which in English is partly overt and partly covert. The principle of English sex-based gender is that feminine is derived from masculine. Therefore the feminine is dependent, grammatically, on the masculine. The masculine is the unmarked; the feminine the marked. The structures which directly reflect sex-based gender include pronouns, names, and person referencing. There are results both in terms of perception and culture most of which are well-known to all of us; conferences like this one are held to discuss the cultural results.

A common myth is that languages like the Romance languages with overt gender everywhere are by that very fact more clearly sexist. This is not true. Covert categories actually may carry more weight precisely because they are not visible. Also, in a language like Spanish, a man cannot entirely divorce himself from the feminine; after all he personally has a feminine head, a feminine mind, a feminine hand, a feminine mouth, a feminine leg. These structures merit separate studies; ranking of languages is inappropriate.

First and foremost is the matter of pronouns, which are far more important than vocabulary precisely because they work as an integral part of the grammar. In many languages the functions that we assign to pronouns are carried in suffixes or other grammatical markers. The ‘generic’ he and the difficulties we have had finding substitutes for it are problems we are all familiar with. The relative difficulties between vocabulary
and pronouns was neatly illustrated on our campus by a
document for graduate exams which had a line labeled
‘Signature of chairperson or his representative.’ Marty-
na (1980), among others, has done some excellent stu-
dies of the psychology of the generic masculine whereby
she found that the only people who could actually not
imagine a male figure upon hearing the generic ‘he’
were a few women, not many but a few. Apparently
there were no men who ever imagined anyone but a
male. Part of the semantic freight of this use is that to be
human is to be male.

However, the sex-based gender system of English is
not confined to persons. Vehicles are frequently re-
ferred to as she—ships, boats, cars, etc. Mathiot (1979)
has done a most interesting study in which she pulled
apart some of the semantic elements of the pronouns in
English. Another item that has been making the
rounds, is that it is astonishingly easy for English speak-
ers to assign a contrasting sex (gender) to any two items,
and correlation from speaker to speaker is very high.
Given a fork and a spoon, for instance, which is which?

In the same vein, the use of ‘s/he’ makes an implica-
tion of derivation based on an accident of spelling where
there is, in fact, no derivation historically. Linguistically
the two forms are unrelated, but the power of the postu-
late is such that we can see it even in chance spelling
conventions.

Part of the manifestation of the male as unmarked,
with the feminine derivative, is the way in which women
are identified. Identity is closely related to name refer-
ence, which is part of the power of naming, so that, as
women, we may come to accept a derivative status along
with our derivative name.

First, in terms of referencing, are the derivations
‘-ess’ and ‘-ette’ which are today the most productive of
the feminine/diminutive suffixes (in the history of En-
glish there are many more). These can be added to any-
thing, and are always, to one degree or another, pejorative. Consider, for example, how ‘leather’ holds
up against ‘leatherette.’ A colleague of mine, con-
cerned about the education his children were getting on
TV started a collection of such terms as ‘smurfette.’ I
was heartened by a report from a student of mine re-
cently. A child, a niece of hers, was discussing some
women actors. An adult corrected her to ‘actress’. No,
she said, women can be actors, too. She knew the mean-
ing of the ‘feminine’ suffix very well” i.e. no validity ex-
cept as specified by a governing/defining male presence.

Also, our basic terms, woman and female, appear
and are believed to be, derived from the man and male.
The history of woman and man is convoluted and in-
volves meaning shifts, woman coming from a com-
point, not directly a derivation. Female and male have
no historical connection at all; female, from a French
diminutive of femme, was respelled to look like it was
derived from male! Thus is the power of the postulate of
derivation, that is, the assumption of derivation is made
even when inappropriate because it is assumed to be
‘natural’.

There is great power in naming. Women’s names,
the very labels by which we claim our identity, are in En-
glish derivational. Our surnames are all patronymic, a
custom our men are now imposing on the rest of the
world. Thailand, for example, adopted this custom
about 100 years ago, to the loss of women’s names. The
title Mrs. plus his name is fully derivational. Many wom-
en’s personal names are also derived from men’s names—Carla from Carl, Francie from Frank, etc. Only
one name that I know of goes the other way”—Marion
from Mary, which Eisler (1980) would probably argue is
a remnant of the goddess (¿not god?).

Elgin was commenting on a difficulty that had aris-
en in the use of the name syntonics for some of the work
she does. From a reader response she answered as fol-
low:

“Steve Marsh writes to tell me that he likes the idea
of naming the work I do ‘the Haden–Elgin’ method or
system or whatever, and he lists its various good points. I
understand. But there’s a problem. Neither my first
husband (Peter Haden) nor my second husband (George
Elgin) took part in my work in any way, that is,
 supposing what I do is important enough to be labeled in
this fashion, the label credits my two husbands, not me,
with what I have done. Nor would my ‘maiden’ name be
any help, since my father (Gaylord Wilkins) had nothing
to do with my work either. Dale Carnegie doesn’t have
this problem; no American male has this problem; mal-
es tend not to realize this problem exists [Elgin, 1990].”

Derivational thinking results from the sex-based
gender system of English which derives the feminine
from the masculine and is reinforced by the linguistic
postulates of number, with singular as unmarked (like
masculine), and the ranking comparative. So masculine
and singular go together in an interplay which allows
only one on top. Male is unmarked. If female is to have
equal rights, then by the number postulate and the hier-
archy postulate, male would have to go down, and the
singular/masculine unmarked tie would be broken. This
at least partially explains the energy men are willing to
put into backlash.

I am still working out the full implications of deriva-
tional thinking. Briefly, the implications are that it is
difficult to perceive women as free standing indepen-
dent singular human beings; it is also difficult to
perceive the activities that women engage in as fully human and worthwhile activities. For some people, primarily men but also women, such perception may be impossible. On the international scene, this postulate makes it difficult for us to evaluate the position of women in other societies and may blind us even to examples where women are not thought of derivationally. The Jâpi people whose postulates I gave you above, for example, have often been depicted as medieval European peasants, with men as singular heads and women as derivative (Hardman, 1988).

In conclusion I would like to look at the issue of sexual harassment in the light of the Hill-Thomas hearings as a way of seeing some of the implications of the derivational thinking that comes out of this pervasive structure.

Given derivational thinking, women in object position, the primacy of the root, behavioral outcomes such as the trivialization of sexual harassment and the senators’ behavior at the Hill-Thomas hearings can be understood, even predicted. People did not disbelieve Anita Hill. I don’t think even the senators did. The number of articles detailing sexual harassment in so many national publications, and the attention given sexual harassment on campuses and in the workplace show clearly that she was believed. Given that he was the root and she the derivation, then clearly if one must choose between the two, one chooses the root. Also, he in subject position and she as object is “felt” to be ‘right’—her only option (objects being optional) being to remove herself, which would allow another object to slide into the slot.

This does not gainsay other analyses, for instance Elgin’s in a recent Lonesome Node (1991), in which she suggests that Hill made an error in strategy. I just do not believe it would have made any difference. For evidence, logic, and presentation, the group that testified for Hill could not have been surpussed. In the presence of derivational thinking any excuse is sufficient to tip the balance to the root and leave the derivation hanging. Also, it is entirely appropriate to rid the root of any hanging derivation so that it may be ‘clean’ and singular and unmarked. One might think here, as a correlative example, of the language used in fraternity initiation ceremonies (Sandy, 1990). The derivation does not have an independent existence; the sacrifice of the root for justice to the derivation cannot be expected. To use men’s metaphors and syntactic ordering, in the “game” of ‘he said, she said’ it is not a “battle” of equals.

Endnotes

2 For a detailed explanation of the data source material, see Hardman, 1986.

References


M. J. Hardman is Professor of Anthropology and Linguistics at the University of Florida. This paper is based on one presented at the 15th Annual Conference of the Organization for the Study of Communication, Language, and Gender held October 15–17, 1992 at Hofstra University, Hempstead, NY.

Occasionally, a writer's work is sufficiently thought-provoking that numerous people respond strongly and with diverse opinions. This, in itself, marks a significant achievement. Sometimes that work is also often exceptionally important in nature of the ideas it explores. Your Women and Language editor finds such a book to be Secrets of Life, Secrets of Death: Essays on Language, Gender and Science by Evelyn Fox Keller (published by Routledge in 1992 and available in paper for 15.95).

Perhaps this importance can be testified to by the fact that we received two reviews of the Keller book along with a photocopy of Anne Fausto-Sterling's review in Women's Review of Books. Fausto-Sterling notes, importantly, that Keller's aim is not to repudiate science or to replace it, but reclamation "from within of science as a human instead of a masculine project." Fausto-Sterling notes that Keller focused almost exclusively on language, and that more will be required, especially "a clear understanding of the politics of scientific knowledge production." Saying that "this book is must reading" does not mean she agrees with everything in it, Fausto-Sterling concluded with the comment that "this book is too important to let" the difficulties of reading what she considers excessively complex writing interfere with reading these essays. Fausto-Sterling also thinks Keller under-valued the complexities of gender that are introduced by race. But, in all, the conclusion is that "none of us has a complete or right answer to the questions raised" and that the Keller's book has "pushed the conversation forward."

Because I agree with Fausto-Sterling and believe that the questions being raised by feminist critics of science are also questions about patterns of western thought reflected and perpetuated in our culture by our language, I believe discussion about Keller's book important for Women and Language readers. Hopefully the following quite disparate reviews when read in combination with the preceding article by M. J. Hardman, will stimulate commentary from some of you.

Anita Taylor


This monograph is a reprinting of nine essays originally published or presented as lectures from 1988 through 1992. Organizing around the three themes of the title, Keller examines the inter-permeation of language, science and gender from the viewpoint of feminist theory and the issue of how language has shaped scientific progress. She argues that the cultural restrictions of gender and language shape science in the essay, "Gender and Science an Update," that updates her 1985 work Reflections on Gender and Science. Starting with the definition of gender, "a cultural norm guiding the psychosocial development of individual men and women," Keller concludes that genderizing science led to the exclusion of women from the physical sciences. For all of history, at least until the latter ten years of this century, science and physical science in particular, was dominated by two commandments: the masculine mind was uniquely constructed to accomplish by reason (logical thinking), the feminine mind uniquely restricted by intuition. Smart women were recognized with the accolade ‘thinking like a man’. Defeated men were censured by muttering ‘just like a woman.’ Keller questions how "the language of objectification, reification, and domination of nature" has shaped and served science in contrast to "a different language of kinship, embeddedness, and connectivity"... objectivity and success of science.

Keller holds a Ph.D. in physics. She evolved from physicist into feminist theorist, a unique personal histo-