

WOMEN IN FUTURES STUDIES AND WOMEN'S VISIONS OF THE FUTURES -- ONE MAN'S TENTATIVE VIEW



by Jim Dator
Director, Hawaii Research Center for Futures Studies
Professor, Department of Political Science
University of Hawaii

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1. Women among futurists.

Several years ago, a pair of outstanding American futurists, Joseph Coates and Jennifer Jarratt, sent a list with the names of 125 futurists to representatives of ten large American businesses asking them to select the names of those futurists who had "something to say about the future relevant to the corporation." [Coates & Jarratt, p. 6] The results were published in 1989 in a book titled What Futurists Believe.

All of the seventeen persons featured in the book are middle-aged and older white American males, except one who is an elderly white Englishman who lives in Sri Lanka and another who is an older white Englishman who lives in the US. Each of the seventeen was interviewed, or otherwise asked certain questions about themselves. One question asked them to name the people who mainly influenced their ideas about the future. Here again the names of fifteen white men, mostly American, stood out from among a list of roughly 50 names offered as being intellectually influential in their thinking about the future. Not a single non-Western person was named and only two women were named, one being the wife of the person naming her.

Many people who commented on the book criticized the authors for seeming to say that the only relevant futurists in the world are a handful of old white American men. The critics faulted the authors not so much for the conclusions they drew from the data they collected, but rather because of their sampling method which seemed to have tapped entirely older white American male corporate sources. The authors were neither unaware of, nor unconcerned about the apparent bias in their sample and conclusions, and attempted to justify both directly in the introduction to the book.

Other people have also attempted to identify outstanding and relevant futurists as well. One of the earliest attempts was undertaken by Michael Marien in 1972 in his The Hot List Delphi. Marien's list is not of people, but of "Essential Reading for the Future" at that time. He asked a panel of 44 people (of whom only 14 actually ended up on the panel) who had "some degree of critical appreciation of at least 500 futures or futures-related documents" to rate the literature in terms of its "essential" relevance to the field.

All but one of Marien's 14 panelists were male, Eleonora Masini, of Italy, being the only female. All but three

were Americans. Thirty-six documents were ranked by more than two-thirds of the panelists as being "essential" reading for futurists and people interested in the future. All but one of the authors of the documents were male, the sole female author being Margaret Mead for her book Culture and Commitment. Twenty-four were Americans and the rest Europeans plus one Canadian.

Alvin Toffler edited a book, also in 1972, called The Futurists. "The purpose of this collection," he said, "is to make accessible a few of the works of the best-known and, at the moment, most influential futurists." "To illustrate the diversity of the movement, I have drawn selections not merely from the United States, but also from Japan, France, the Netherlands, the USSR, India, Germany and Canada." [Toffler, p. 5] And indeed, of the 23 people in the book, "only" 12 are Americans. Still, all but one are males--the sole exception being Margaret Mead, the same female who appeared in Marien's The Hot List Delphi.

More recently, Michael Marien, along with Lane Jennings, published in 1987 a book based on invitations they sent to 44 (!) futurists who were asked to reflect on what they had learned about the future, and how to think about the future, since the first days of the futures movement in the 1960s and early 70s. Seventeen responses were finally published in the book.

Three were from American women: Vary Coates, Irene Taviss Thomson, and Hazel Henderson (who was born in England). All but one (apparently) of the males were Americans. [Marien and Jennings]

In 1989, Hugues de Jouvenel, head of the Paris-based futures group, Association Internationale Futuribles, conducted a small survey of eight people he described as being "outstanding futurists," asking them to identify the major global futures studies published since 1980. All but one of the eight panelists was male. Three were French, three were American, one was Italian (the woman, Eleonora Masini), and one was Russian. Eighty-nine publications were listed including one from China, one from Japan, one from Africa, and three from the Soviet Union. All the rest were from Europe or the United States.

There was no single item that all eight of the panelists agreed on, but five did agree that Lester Brown's (an American) State of the World reports were "major global futures studies," and three others agreed on Gerald Barney's ill-fated Global 2000 Report to the President; Mikhail Gorbachev, Perestroika; Norman Myers, GAIA: An Atlas of Planet Management; Alvin Toffler, The Third Wave; and the World Commission on Environment and Development's report, Our Common Future, often called the Brundtland Report. So we have three more Americans, one Russian, all males, and (arguably) one Norwegian woman [de Jouvenel].

Finally, Allen Tough, of the University of Toronto, in 1990 mailed a "questionnaire to 115 professors, writers and leaders in futures studies" as well as distributing them to "a large number of people...attending two More recently, Michael Marien, along with international futures conferences, two small courses, and one small seminar." "From all these sources a total of 58 usable questionnaires was returned. Each respondent listed between one and 10 individuals who are today...contributing the especially significant, fresh and/or profound ideas about the future." "Although 198 different individuals were nominated, three-quarters of them were nominated only once.... At the opposite extreme, 14 respondents listed Alvin Toffler.... In all, 49 people were nominated by from two to 14 respondents. Of the eight people listed six or more times, four were women and three were not Americans.[Tough, p. 436f]

So what can we conclude from this? First of all, it does seem to make a difference who is doing the surveying and from where. Male American researchers seem to end up with lists which have mainly male American

futurists on them, Toffler perhaps being the exception as far as nationality is concerned. Male Canadian and French futurists get a few more non-Americans and a few more women.

So, what about the contribution of women to futures studies? We might conclude that there are not very many women in futures studies but that the few are truly outstanding: Margaret Mead, Gro Harlem Brundtland, Eleonora Masini, and Hazel Henderson.

I certainly feel that these four women are among the world's most outstanding futurists, just as I agree about the high quality and visionary leadership of the many more men listed.

But I would like to begin, as far as I can tell, with this lecture tonight to try to set the record straight. I would like to acknowledge (I believe for the first time by anyone publicly) the contribution which many more women from many more parts of the world have made to the founding, growth, and continuing search for excellence and relevance of futures studies.

Yet, at the outset I must acknowledge my great trepidation in doing this. Simply because I am a man, as much as I may think I try not to make it so, I tend to see only certain narrow, manly things. I am certain I will miss many excellent women futurists. Many whom I will fail to mention probably work very close to me and within cultures (ethnic as well as gender) with which I am most familiar. More than that, I know I will fail to notice many women futurists who work far from me, or in cultures with which I am less familiar or totally unfamiliar. Frankly speaking, that is one reason I agreed to accept the assignment from Prof. Kim when he asked me, an American male, to talk about this topic here, in Korea, before a primarily female audience: I beg you to bring to my attention women futurists you know, from Korea, or the Asia-Pacific region, or anywhere else, whose work I should come to know and respectfully acknowledge and learn from.

The other reason I did, and still do, accept this assignment with such trepidation is that I am certain that I will misunderstand and misstate the position even of the women futurists I do acknowledge. Thus, I very much hope that everyone hearing or reading this will accept my invitation to give me their frank and full criticisms and corrections so that I might be more fully and properly informed. Better yet, I urge some among the women who may hear or read these words to take up the challenge and more properly and fully identify women futurists and women's visions of the futures than I do here.

I have here done my tentative best. I urge any of you to do your certainly very much better.

2. The Origins of Futures Studies.

Humans have of course always been interested in the future. While many other living beings also evidence some kind of an intentional orientation towards the future--witness any animal stalking, or pursuing, or fleeing from, any other--one of the things that seems to distinguish humans from the other creatures on earth is the length and breadth of their foresight, the extensive number of increasingly powerful tools that humans have created which enable them to influence the future, and the wide variety of stories they tell and have told about their hopes, fears, and dreams of things to come.

Many of these tools and tales came into prominence in the 18th and especially 19th and early 20th centuries in North America, Western Europe, Russia, Japan, and, I am sure, Korea as well. As the beliefs, practices, technologies, and experiences of the industrial era progressively made the future increasingly discontinuous from the past--after all, that is what "progress" and "development" are meant to guarantee: that the future is discontinuous from the past--more and more people began to imagine alternative futures which were different from any past or present experiences. The names of the Frenchman Jules Verne, the Englishman H. G. Wells, and the American Edward Bellamy, each with their fantastic and largely optimistic visions of the technologically-driven wonders to come, leap immediately to the minds of most Westerners when asked to think about images of the future from the 19th Century. By the second quarter of the 20th Century, the names of Aldous Huxley and George Orwell dominate, with their much darker nightmares from the future. And there are many others, including many who propert to be more concerned with social science fact that with science fiction.

Nonetheless, it is generally argued that the modern futures movement began shortly after the second world war, and primarily from two sources. One was the military establishment of the victorious United States. [Coates and Jarratt, p. xi] Many of the earliest American futurists worked directly for the US military in the Research and Development (RAND) division of the US Air Force. Many of these men founded some of the first, and still flourishing, futures consulting firms: The Rand Corporation, The Hudson Institute, The Futures Group, The Institute for the Future, and others. [Jones, p. 5ff]

They, and some others from business, the media, and academia of the United States, especially the East Coast around Washington, DC, formed the World Future Society (WFS) in 1966 under the leadership of Edward Cornish who is still the owner of that important enterprise. I have been a member of the World Future Society since 1967 and value its contribution to developing futures studies and extending public and professional awareness of it and its utility.

At about the same time, and with some of the same American participants, but with many others from Europe, East as well as West, a group of people and organizations came together in Oslo, Norway, in 1967 to form what became officially in 1973 the World Futures Studies Federation (WFSF). I have also been a member of this organization since 1970 when I attended the second world conference of the group, in Kyoto, Japan.

The names of these two organizations are confusingly similar but the basic concern and orientation of the two is quite different. While the membership of the WFS is relatively large, and includes many people who are also members of the WFSF from many different parts of the world, I would say that the WFS is primarily an American organization--indeed, an American business--with all of the cultural advantages and limitations which that entails.

The WFSF began as a transnational (initially, mainly European) organization concerned especially with humanistic and peace-oriented issues: how was it possible for the alleged center of Western Civilization, Western Europe, twice in the 20th Century to plunge the entire world into horrible wars? What is wrong with us? Is there something wrong with Western values or culture, or with Western science and technology? What can we do to guarantee that such a war will never happen again? These were the kinds of questions which underlay the concerns about the future for many people active in forming the WFSF.

You might say that the focus of the WFS was mainly on the glories that lay ahead for the world under the technologically, economically, militarily, politically, and culturally dominant *Pax Americana* . In contrast, the focus of the WFSF was, and is, mainly on protecting and strengthening the cultural, humanistic, and peace-oriented values of the rest of the world which was the subject of the *Pax Americana* .

In addition, many of the first members of what became the WFSF were people from East and West Europe who wished to find some way to heal the division of Europe into two ideologically-divided armed blocs without either trying militarily to defeat the other. In general, they thus were balanced between the dominant forces in both the United States and the Soviet Union, trying to find a way to a peaceful, just, equitable, humane future.

Very soon after its founding in Europe, the WFSF reached out to Asia and to various parts of the Third World, and has sought to bring into its membership as many as possible of the silenced or less-privileged voices of the world, with their various and often conflicting visions and fears for the future. The WFSF has thus tried to keep its membership smaller so as to become more equitably balanced between first, second, and third world institutions and places. Nonetheless, European and to some extent North American members have always been overrepresented, and the rest of the world substantially under-, if not actually un-, represented. Still, the WFSF consciously strives towards such equitable global participation in its activities and membership.

3. Women in Futures Studies.

Now, in spite of what one might conclude from my summary of lists of outstanding futurists, from the very beginning, women have been active in both the WFS and the WFSF. The late Sally Cornish, the wife of the owner Edward Cornish, must be prominently mentioned.

The names of three other women who were undisputed leaders in cultural and peace-oriented aspects of the futures movement will be immediately recognized by many of you. One is Margaret Mead, the world-famous anthropologist who did appear on the previous lists as you recall. Another is Barbara Ward, who was internationally acclaimed for her visionary leadership in peace and environmental activities. The third is Elise Boulding who was also one of the first women to reveal the ignored but crucial contributions which specific women have played throughout time, in her monumental book, [The Underside of History](#).

Other women active from the earliest days of futures studies are Barbara Marx Hubbard and Renee-Marie Croose Parry.

However, I would like to highlight the names of two women who I think, more than any others, deserve to be credited for making futures studies what it is today. One is Magda McHale, an artist and cultural futurist, and a Vice President of the WFSF. Though originally a Hungarian, and holding a British passport, McHale has lived and worked for many years in the United States, and has been now for more than a decade as the founder and director of the Center for Integrative Studies of the State University of New York at Buffalo.

The other woman without whom the WFSF probably would not now exist at all is Eleonora Masini, whose name I mentioned before. Dr. Masini is a Professor of Sociology and Law at the Gregorian University of Rome, Italy. She also was the second Secretary General of the World Futures Studies Federation, its third President, and currently is Chair of the Executive Council of the WFSF. She, more than any other single person, kept alive and nurtured to maturity the infant organization she received from the Founding Father and first President, Johan Galtung of Norway and the second President, from Morocco, Mahdi Elmandjra. Of course, both she and Magda McHale had also been active in the creation of futures studies and the WFSF from the very beginning.

Since that time, there have been many women from many parts of the world active in the WFSF, the WFS, or in other future-oriented organizations or processes. Indeed, in some places, it was primarily women who were responsible for the creation of any future-oriented groups whatsoever. I am thinking for example of Rosa Menasanch, Pepita Majoral, Conxita Bargallo, and Antonia Guix who, during the dark days of Franco's dictatorship, were among the founders in 1973 of the Centre Catala de Prospectiva in Barcelona. Similarly, Eva Gabor, Maria Kalas Koszegi, Erzsebet Gidai, and Erzsebet Novaky played crucial roles in the establishment of futures research in Hungary in the 1970s, as did Ana Maria Sandi and Viorica Ramba-Varga in Romania; Danuta Markowska in Poland; Radmila Nakarada in Yugoslavia; Anna Coen in Italy; Erika Landau and Rachel Dror in Israel, and, later, Margarita Kaisheva in Bulgaria.

At the forefront of early futures work in the United States, and still continuing their leadership, are, in addition to the women already named: Donella Meadows (mainly responsible for the most earth-shaking future-oriented publication of the 1970s, The Limits to Growth, as well as for the newer and equally important book, Beyond the Limits, published this year); Edith Weiner (who, as the head of futures research for the American Council of Life Insurance in the 1960s and 70s, is probably responsible for the invention of what is now called "environmental scanning", one of the most useful methods in futures research); Betty Reardon (an educational futurist and peace researcher at Columbia University); and Patricia Mische of Global Education Associates.

More recently, American women especially vital for educational futures include Linda Groff, Betty Frank, Penny Damlo, Kathleen Maloney, Ruthanne Kurth-Schai, and Maria Guido (who, though teaching in the US, is actually from Costa Rica).

Jennifer Jarratt, Martha Garrett, Sandra Postel, Jessica Matthews, Suzanne Gordon, Charlene Spretnak, and Riane Eisler are among the best known names in the consulting, global, environmental, and/or spiritual futures fields in the US.

Elsewhere, Mitsuko Saito-Fukunaga, Japan; Marie Angelique Savane, Senegal; Margarita de Botero, Columbia; Katrin Gillwald, Germany; and Janice Tait and Fernande Faulkner, Canada, have each contributed greatly to futures work.

Two other groups of women deserve special mention in my judgment.

There are seven women who have taken the leadership in bringing futures research and thinking directly into the judiciary of the United States: Dana Farthing-Capowich of the State Justice Institute; Francis Zemans, Sandra Ratcliffe, and Kate Samson of the American Judicature Society; Kathy Mays of the Judiciary of the State of Virginia; and Wendy Schultz and Sharon Rodgers of the Hawaii Research Center for Futures Studies. Lauren Cook of the National Association of Governors' Policy Advisors has done equally outstanding futures work for the executive branch of many American state governments. Cathryn Johnson does similarly successful work for the Health Care Forum, an association which works closely with the public and private health care providers.

Anita Rubin and Leena-Maija Salminen are among a group of experienced young futurists in the Finnish Society for Futures Studies, as are Robin Brandt, Annette Gardner and Bindi Borg in Hawaii.

Now, unless your name was read out, which it was not, it must have been very tedious for you to listen to that list of names, organizations, and countries. Yet I felt it absolutely essential that I read them, so that you could hear that indeed women from many different parts of the world have been and are at the forefront of the best futures work. While, as usual, the Western men seem to get all of the credit, it is in fact often the women, Western and nonwestern, who are doing much of the best work.

And I am absolutely certain that I have failed to mention many women who are doing much of the greatest futures work. I apologize to them, and to you, for my ignorance or forgetfulness.

4. Women's Visions of the Future.

But what are women's visions for the future? Let me try to answer that first by quoting directly from two of the best sources possible, Elise Boulding and Eleonora Masini.

In "Women's visions of the future," [Boulding, pp. 9-24 selectively], Boulding says:

"There is a profound ambiguity in the concept of women visioning the future. Their historical role has been that of stewards and conservers of resources for their families, as nurturers, fending off the effects of change as much as possible to preserve a space of tranquillity for those in their care." "At the same time women are the womb of the future in every society."

"The experience worlds of women have been somewhat different from those of men in that they have traveled less far in their daily round, and stayed closer to the hearth because of childbearing. The differences are not as great as commonly supposed, nor are they likely to continue to be so in the future. But women have in general dreamed from the more private spaces of society and known less of the public, civic spaces where grand designs for the future have been planned by men. To the extent that this is true, the thoughts women have about the future have a special quality that sets them apart from the manipulative futurism of planners who develop a model of the social processes they are concerned with, project trends, and then try to alter the values of the variables of their models to assure outcomes approaching the desired end state. Women's futurism is the futurism of the Tao, the way, rather than the futurism of projected end states." (9)

"It is not a heroic futurism, overcoming all obstacles, but a gentle, listening futurism...." "Women have often not realized they were futurists because they only know of manipulative futurism." "Because men and women are perhaps more alike than they are different, many men have dreamed as women have dreamed." But of course, "In looking at women's visions of all kinds, it must be remembered that many women accept the conquest visions of the men around them, and behave in ways that support systems of domination...."

Still, "Women's visions have a strongly commensalist character. That is, the metaphor of the human family comes easily and naturally to them, and they draw on it frequently in visioning a future society more peaceful, just, and humane than the present one. Also, because women are used to operating from the private spaces of society although their responsibilities are public in the fullest meaning of that word, they are very ingenious in visualizing changes that can be made 'from inside' in the cracks of the microstructures of existing society." (10)

"If one were to distill a common utopia from their various organizational visions, it would be of a pluralistic world society with equal life chances for each woman, man and child, equal participation opportunities for all, and innumerable interlacing networks of local people sharing common interests as private individuals concerned for public welfare. It would be a world conscious of its grass roots, and adept at individual-to-individual communication from anywhere to anywhere. It would be a world of diverse lifestyles freely chosen, ranging from rural voluntary simplicity to urban high technology. The most important feature of this vision is that no community would exist in isolation." (14)

"The various components of women's visions of the future...are shared by a growing number of men. They represent a new direction, away from old patterns of expanding control over ever-larger social units, and increasing social stratification...; away from consumerism and away from a denigration of simplicity and rural lifestyles. To the extent that men are increasingly sharing women's values, we may say that [this] alternative future is already at least a possibility. How probable it is depends in part on the skills of human beings in forming coalitions across their usual social boundaries, and in identifying common interests where these may not appear to exist on the surface. Finally, it also depends on there being enough surplus energy for love, trust and action." (23f)

The above quotations about women's visions of the future came from Elise Boulding. Now let me quote from Eleonora Masini and her article, "Women as Capturers of Social Change." [Masini, 1981, pp. 98-100, selectively]

She points out that "Women, not having competed in the Western world, and thus not captured by the social system, are capable of understanding changes which are in the making." "Incipient changes are more easily detected with capacities which women have acquired by virtue of not having been builders of the system."

"Women can live and feel within changing complex situations where intellect, emotion and intuition are all involved." "What would it mean if women instead brought their capacity to live with complexity from the private level to the public one?"

"Women are capable of great dedication and sacrifice--this capability has often been used to the detriment of their personal growth. Women very rarely take advantage of their position to further their interest whether financial or otherwise. It is very rare to hear of a woman in politics being bribed."

"Women are becoming more and more aware of being at the periphery of power wherever it is." "This, I believe, is the historical moment of peripheries, of the awakening of awareness of peripheries." "Women can thus

build... 'Liberation Zones'...in which women recognize themselves, organize themselves, find their common needs and aspirations, and find their methods of defense."

"Women understand that governmental and inter-governmental decisions are likely to run into difficulties through bureaucratic and administrative straight-jackets and they are more willing to work in social movements or non-governmental organizations where activities are run informally, flexibly, and directly."(99)

"I believe...that societies built on the values of Western industrialism have reached their internal and external limits." "I believe that in our time the possibility exists for a different world in which women and women's capabilities are also accepted by men and probably will also be used by men to change the logic both of living and living together on a planet which has become smaller and more crowded."

"Perhaps we could change the logic of aggression, violence, armaments, threats and oppression which is characteristic of the world today. The possibility that women could live as women and not as men in the present and future world could be the only way of saving the human species and the possibility of development of children in a future world which now looks so bleak." (100)

Those are excerpts from statements about women as futurists, and of women's visions of the future, by two of the most prominent and respected women actively involved in futures studies from the beginning and continuing today, Elise Boulding, an American, and Eleonora Masini, an Italian. [For other women futurists' views of the future of women, see Aburdene & Naisbitt, Cheatham & Powell, Eichler, Eisler, Henderson, Paltiel, Saito-Fukunaga]

But just as many futurists are neither females nor feminists, so also most feminists are not futurists--or at least most feminists do not identify themselves actively with futures studies. But there is a vague or implicit, if not clearly stated and explicit, vision of the future in every feminist statement. And there are of course many different and often contending kinds of feminism and thus many different feminist visions of the future as well.

So let me here also turn to the words of a well-known feminist, Lynne Segal, in the final chapter of her book, Is the Future Female? [Segal, pp. 215-246, selectively]

"There are now two increasingly separate projects in contemporary feminism. The first of these, and the one which I have argued throughout this book has come to provide the dominant popular conception of feminism today, is one which stresses basic differences between women and men, and asserts the moral and spiritual superiority of female experience, values, characteristics and culture: women's oppression on this view results from the suppression of this women-centered vision or separate female 'world.' The second project, now less publicly, or at least less unambiguously celebrated in the name of 'feminism', is one which stresses the social and economic disadvantages of women and seeks to change and improve women's immediate circumstances, not just in the area of paid work and family life, but by providing funding for women's cultural projects, increasing women's safety in the streets or meeting the special needs of particular groups of women. Many feminists may well support both projects."

"Any feminist perspective which explains women's caring work...in exclusively psychological terms obscures the possibility that there may be no such universal and straightforward nurturing femininity at all; women's mothering capabilities, when present, may be primarily their adjustment to the social and economic arrangements which require them to do the work of caring for others. Such psychological perspectives also tend to obscure not just the possibility but the gloomy probability that women's caring work in our society is often stressful, isolating and undermining of personal confidence." "All the studies which have been undertaken of the effects of isolated mothering confirm that earlier feminist anger." (215)

*"Three insights guide my analysis of feminist strategies for the future. The first is the recognition of the personal power and confidence which comes from women's engagement in political struggle, when it is women collectively who direct and control it. The second is the recognition that women's subordination is not a result of a conscious conspiracy by men, or at least not **only** of a conscious conspiracy by men, but is rather embedded in all the social institutions and ideologies of our society. The third is the recognition that the lives of women and men can be as much determined by class, ethnic, regional and national issues as by their sex." (231)*

"Most feminists are well aware that women do not overturn existing power structures simply by individually entering the more powerful and privileged terrain of men. Once there, they may merely serve as the exceptions, used to disguise the general exclusion of women." (233)

"Economically independent women find it easier to make choices, to leave brutal men, assert a lesbian lifestyle if they want to, and decide if, when and how they wish to mother." (244)

"New cracks keep appearing in the interlinking structures of men's power and privileges in relation to women. It is in deepening these cracks that feminists can work to strengthen the power of women to participate in creating the type of future we want for ourselves and others." (244)

"Femininity has always been at least partially at odds with itself, heterogeneous, contradictory and changing, its expression varying along with class, race, age, sexual orientation and individual biography. So too has masculinity. There is no unifying female experience which could in itself change or save the world." "The

future is not female, but feminism, a feminism seeking to transform socialism and end men's power over women, has a crucial role to play in its construction." (246) [For other feminist views of the future, see Bartky, Cheatham & Powell, A. Ferguson, K. Ferguson, Gordon, Hamilton, Kelly, Scott, Trask. For Korea, see, Chun, Soh]

5. Futures Beyond Motherhood?

There is a final element in women's visions of the future that I would like to end with tonight. It has to do with the future of technology, the future of human-technology interactions, the future of motherhood, and the future of humanity itself.

On the one hand, it has to do with developments in artificial insemination, test-tube babies, and the entire spectrum of possibilities of genetic engineering. On the other hand, it concerns developments in electronics, information sciences, automation, robotization, artificial life, and artificial intelligence. These two technological strands are already being woven closer and closer together, and will eventually result in the creation of cyborgs--"CYBernetic ORGanisms" which combine naturally-occurring or genetically-engineered organisms with artificially-created but intelligent and living cybernetic entities.

Some of these new technologies and living beings already exist now, though still in quite primitive form. But by the end of this century, and the beginning of the next, I expect that we humans (if we exist at all) will be only one among a variety of sentient creatures on this planet. The line between production and reproduction, between non-living matter and living, feeling, and thinking organisms, will finally and irreversibly have been crossed. [Dator, Drexler, Glenn, Moravec, Yoxen, Zuboff]

There is an old English saying, which may or may not survive translation into Korean any better than anything else I've uttered, which says that "Necessity is the mother of invention." The technological developments I am speaking of now show that instead, "mothers were just an invention of necessity." The old biological mother--the womb of the future, as Elise Boulding called her--was once the only way intelligent life could be conceived, nurtured, and brought to light and maturity. Such "mothers" will not be necessary in the world I am discussing now.

We often also say in English that an obvious, non-controversial matter is a "motherhood issue." However, one of the biggest issues in the immediate future and onward is, in fact, motherhood. Indeed, many women--and men--are very much concerned about the implications for women--and men--of the emergence of true test-tube babies, genetic engineering, and of robotics, artificial life, and artificial intelligence. [Adritti, Bernard, Corea, Rodin & Collins, Rothman]

Is this just another male plot not only to dominate but also more elegantly to repress and indeed ultimately eliminate women by eliminating their time-honored and exclusive reproductive and nurturing role? Or is this a way truly and finally to achieve women's liberation, and perhaps, also men's? [This is extensively discussed pro and con in the feminist journal, [Issues in reproductive and genetic engineering](#)] The argument has already begun, but I can assure you that you won't hear the end of it for a long, long time. The battle over abortion, which has been such a big political issue in the United States and elsewhere recently is but the tip of the iceberg of this complex and important question about the future not only of women and men, but also of

humanity itself.

One of the women who has addressed this issue squarely and most creatively is Donna Haraway. In an article provocatively titled, "A Cyborg Manifesto", Haraway says that "From one perspective, a cyborg world is about the final imposition of a grid of control on the planet, about the final abstraction embodied in a Star Wars apocalypse waged in the name of defense, about the final appropriation of women's bodies in an masculinist orgy of war. From another perspective, a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints." [Haraway, p. 154]

Indeed, she says, it may be through cyborg consciousness that humans may finally move beyond the endlessly divisive categories of ethnicity, gender, sexuality, and class. According to Haraway "Cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves." "It means both building and destroying machines, identities, categories, relationships, space stories." She concludes, "Though both are bound in the spiral dance, I would rather be a cyborg than a goddess." [Haraway, p. 181]

And so would I.

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