

Sharon Traweek

"WARNING SIGNS: Acting on Images"

Revisioning Women, Health, and Healing: Feminist, Cultural, and Technoscience Perspectives, edited by Adele Clarke and Virginia Olesen [Routledge, 1999]

Most of the people doing research on biomedicine and technoscience during the past twenty-five years have also been subjects of biomedical diagnosis. Our research has shaped how we live with our own diagnostic images and it has shaped how we intervene in their interpretations; those experiences and actions have shaped our research and writing. We diagnose technoscience and biomedicine; in turn, we are diagnosed. We are subject and object to ourselves; we have been objects of study for our research subjects. Our subjectivity as knowers and as objects of study is paralleled by our knowledgeable inquiries into the ways of knowing in biomedicine and technoscience; we are multiply informed. We know our subject intimately; we are knowing subjects.

We are in an excellent position to demonstrate and investigate just how knowledge is necessarily embodied and how embodiment shapes human knowledge. I am interested in why we have so steadfastly avoided writing about this intriguing intimacy. Why do we write and even conduct our research as if we did not know 'in the biblical sense'? Pondering this denial has led me to rethink imaging, representation, strategic discourse, and engagement in technoscience/biomedicine and in our own research.

I have learned from speaking on this subject that many of us still want to insist that the distinctions between subjectivity and objectivity are simultaneously natural, normal, obvious, and require vigilant defense. Many still believe that subjectivity is the name for unreflected experience and that objectivity is the proper name for carefully investigated claims adjudicated by qualified researchers. I must say that I am quite uninterested in writing to you here about anyone's unreflected experience, including mine, and I am quite eager to explore with you how we actually construct and investigate our claims and seek the adjudication of qualified experts. I think we could do it better.

Over the last twenty-five years our work has come to be read as authoritative, we have come to be seen as experts, and the fields of inquiry we launched have been situated in the curriculum for the next generation. We have challenged the assumption that patients, clients, and users have no useful knowledge. We have challenged the assumption that there is only one way of doing things right, that there is only one way to investigate our social worlds or to investigate the earth and the universe where we live. We have challenged some fundamental assumptions about the way knowledge is crafted. Some among us have made profoundly important and disturbing interventions in the very notion of what knowing is.

We have done all that without yet challenging the conventions about how we researchers go about convincing our peers about the veracity of our work. Specifically, I am exploring how our ways of knowing are constrained by our ways of writing. We have successfully learned to think and write in the passive voice and in the third person; we teach and enforce that, even as we know that those literary conventions have a very specific history, as does their enforcement. Obviously, I know that until variations in discursive strategies are better received by researchers our students and we must perform those conventions. I am asking why and how we might begin to challenge such rules.

Exemplars

I offer two sets of exemplars from my current work: One is the tradition in anthropology of 'life history studies' and 'generational cohort studies' which focus on either one individual or one group to explore the ways changing political, economic, cultural, intellectual, gender, and related discourses and practices are embodied and enacted in one person's life or one cohort's history and vice versa. A Japanese friend and I decided in the late 1970s, while we were in graduate school in the United States, to begin doing a set of life history studies on ourselves, exploring our cohort. We have considered publishing a progress report on the first twenty years of this research during the late 90s. Now at mid-career we also decided to engage in a collaborative, comparative study of our own cohort, women physical, biological, and social scientists in Japan and the United States; we began that project in 1996. Later in this essay I will be reporting from life histories collected from such scientists.

My second set of exemplars includes Paul Fussell's The Great War in Modern Memory and Raymond Williams' Keywords. Fussell argues that popular narratives of the times, including songs, powerfully shaped both the experiences of soldiers during World War I and their memories of those experiences. Our generation, like any other, has used local cultural narratives to craft and to recognize ourselves and our

bodies; recent generations have also used narratives that circulate globally. We Americans have scavenged from "Dick and Jane" readers to Marilyn Monroe movies and Wonder Woman comics, from "consciousness raising" groups nearly thirty years ago to the new NIH clinical studies of women's bodies, from films about Marie Curie to stories about Eleanor Roosevelt as we make and remake ourselves and our work.

Raymond Williams noted that the political, cultural, and intellectual language of his friends changed so much during his absence in World War II that he could not engage in discussions with them until he had learned the new meanings for several hundred words. Since the late 1960s many women have been reading the research on medical practices, reproductive technologies, the comparative political economy of health care and its distribution, the social construction of knowledge in the health sciences, the dialogics of patient-caregiver talk, the use of images in the biological sciences, and the deployment of contested discursive strategies. The representation of women and our bodies in those images and discourses has shaped our understanding of our bodies. Furthermore, our bodies and their meanings have changed powerfully during the last thirty years because we learned new languages to explore our new bodies, just as Raymond Williams learned a new language to explore his familiar, yet changing world.

There are other exemplars, too, for this project from the massive research literature in cultural studies of bodies, situated knowledges, standpoint theories, subject positioning, feminist studies of narratives and language, and subaltern studies. To cite all that research would run to several thousand entries. There is also a very extensive literature on how our grammars, arguments, narrative forms, and literary styles are inescapably intertwined, whether we are writing for research journals, television, poetry, or our diaries. We know too the literature on how biomedicine and technoscience require institutions and infrastructures; we know how knowledge can be power. We know that fascination with images and metaphors from science, technology, and medicine saturate public culture, and that those circulating images and metaphors also shape research, including our own.

I. Intimate Knowledge

Many women of my generation in science, technology, and medical studies have done research on the techniques and technologies, knowledges, and practices of reproduction. They include anthropologists, historians, sociologists, and philosophers, among others; a serious bibliography also would include several thousand entries. Some of these researchers are constructing new modes of inquiry and new modes of theorizing and new modes of writing for their work. It is often less well known to those who do not know them personally that they are, in addition to their considerable research, also working from what is usually called 'personal experience'. If we thought about it for a few seconds, it would be clear that women between the ages of 20 and 65 would be likely to have some personal experience with obstetrics and gynecology. Of course, these researchers rarely note this so-called personal fact in their scholarly writing and speaking. We all learned long ago that in our formal writing and speaking we should never refer to the person doing research, the author, and the speaker.

Why "of course"? Well, we all know that to mingle the personal and the intellectual, the experience of reproduction with the knowledge about reproduction would be to violate some very old taboos of our trade. What are those taboos we absorbed so long ago? I know, you know, he knows, she knows, we know, and they know that for many of us it is our job to separate objectivity and subjectivity, our publics and our privates, the social and the personal, universals and particulars, the third person masculine generic and the first person singular. To be on one side of the line is to be in the right place to make knowledge and facts and methods and theories; to be on the other side is to be at home. We rarely ask ourselves what would happen if we were to theorize at home and with a different grammar.

Before continuing I would like to offer two caveats. First, this essay is an attempt to pose questions; it is not a review of the literature. For that reason there will be few citations, although I do mention many research fields. Secondly, there are no confessions in this essay. I have come to realize that some readers and some audiences believe that when the first and second person pronouns are used that the text is somehow 'confessional'. There are no references in this text to any informant's emotions about our life events. However, in two narratives below there are diagnoses of 'hysteria' by physicians; one is elicited by a joke and the other is an effort to explain physical symptoms as a psychosomatic manifestation of stress.

Actually, there is a separate argument that the content of our so-called personal, private, interior states, our sentiments and emotions draw strongly from the social and cultural milieu in which we live our lives, just as our other kinds of thoughts do. There is considerable research literature on this point; one part of that research concerns the 'social construction of emotions'. I have written, for example, about how at

different stages of their careers through a long process of sentimental education American high energy physicists come to have specific, strong emotions, such that they very much want to do what they should do, and to not want to do what they should not.

I am arguing here that we are so conditioned by our education to believe that any violation of the canons of 'objective' discourse means that the account is 'personal' or 'confessional.' In what follows I have deliberately avoided using any references to 'emotional states of mind' simply to expose the power of our own minds to supply those references and to believe that they are in the text. In this essay I have explicitly used this strategy to emphasize that we academic researchers have been quite powerfully socialized [or acculturated] to be very uncomfortable even raising the question of how we differentiate 'subjectivity' from 'objectivity'. The intensity of our socialization is strongly correlated with the intensity of our desire to avoid this subject. It is almost impossible, paradoxically, for a fully initiated academic researcher to be willing to explore this subject rationally. This essay is about the intellectual constraints of that canon and the implications for our research; it is not about me.

I shall be writing here of 'her body' and 'our bodies' and I shall write of 'his voice' and 'her voices' as much as I will write about 'their bodies' and 'their research'. I will write in the first person singular and the first person plural; I will write in the second person singular and plural; I will write in the third person singular and the third person plural. Try to notice which subject speaks the voice of theory and which subject has the voice of method. Where is the universal and where is the personal? Imagine a narrative composed of these words in the first person plural. Consider it a story of our cohort or a story of some friends. Or rewrite the story with these words in the third person plural, a story of another generation. Read these words in the third person singular as a singular case study or a story about your daughter, your sister, or your mother. Imagine these words spoken in the first person singular, as your story. Which voice has the theory? Where is the method? Where is the data? What are the images? What is the moral? What is lost? What is gained? What is our subject? What is our object? Who, then, speaks?

In what follows I will write of many research subjects: of violence and rape, poverty and plenty, mythical narratives circulated in films, re-enacted by adolescents, welfare and shame, schooling for social security, birth control, clinical trials, infertility work-ups, Clomid [trademarked], divorces and marriages, England, the United States, Japan, obstetrical devices, abnormally long fallopian tubes and tubal pregnancies, amniocentesis and corionic villus sampling [CVS], ultrasound devices, uterine monitoring, pregnancy surveillance, positive results, negative results, genetic counseling, miscarriages, statistics, second trimester abortions, menopause mistakenly induced, induced labor, gynecological draperies, stirrups, cervical injuries, hemorrhaging, hysterectomies, hysteria, elderly primipara, pregnant faculty, resident aliens, private clinics, university research hospitals, colonial medicine, geneticists, Down's Syndrome, a foetus expelled, daughters and sons born dead, diagnostic debates, pregnancy losses, mammograms, biopsies, excessive success, multiple sclerosis, rituals, autoimmunity, histories of diseases and diagnoses, health benefits denied, images, monitoring, surveillance, physical sciences, biological sciences, and social sciences. We could include an extensive research bibliography for each of these topics. In the following cohort case history you will learn how people aware of all this research also encountered these researches as they were used by experts to narrate their bodies and their lives. In that site doubled with knowledge could they think? Didn't you?

II. Cohort Biographies of Re/productive Lives

Most middle-class Americans 35-65 years old have had our bodies routinely monitored their entire lives, unlike our parents' depression-bred cohort. All our lives we have lived with diagnostic images of our bodies; many of us have brain, dental, gynecological, intestinal, kidney, obstetric, skeletal, and spinal images of ourselves; we have x-rays, CAT scans, MRIs, graphs, tables, and charts of ourselves, our parents, our children, our friends, our partners. We try to understand them and we act upon them. We are immersed in an unending history of interpretations of body images and stories of moral acts without closure. Our parents came to this surveillance late in life; our cohort could easily fill family albums with our diagnostic images and charts. [See the emerging histories of imaging in medical diagnosis.]

Rape

His mother's family suffered during the depression of the 1930s; losing most of their property and most of their possessions, they fell several social classes. [From socio-economic histories of the 1930s

Depression we know that this family history was not unusual.] Later his mother reported that she had imagined herself traveling far, becoming rich, and then returning home to restore the family's property. [From the history of American depression-era films, we now know that this was a common cultural narrative.] Just before graduating from high school, she and a cousin snuck away and drove west in his car. [From histories of the cultural politics and representations of cars in the United States we know this is another common American cultural narrative.] The informant is not entirely certain, but as best as he can tell, shortly after she arrived in the new city his mother was raped; nine months later he was born. [From histories of rape we know that his mother's politics of silence were and are rather common, around the world; so too is vulnerability in transit.] She avoided her family; her obstetrics care was provided by public health services. The mother did not want her child born 'on welfare', so her brother was summoned to pay for its delivery. [We now know that there was considerable stigma associated with welfare during the Depression.] She thought that if she had stayed at home, finishing high school, none of this would have happened to her; she resolved that all her children would finish college. [See histories of the image of higher education in American culture.]

During the 1960s while they were college students two of her roommates were raped. [At the time they did not know how normal that was, nor did anyone around them; we now know that the college years are the most dangerous time in an American woman's life.] They did not get pregnant because they were using birth control pills, gotten very cheaply at a Planned Parenthood Clinic in Oakland. [Having read Marcia Meldrum's history of contraceptive clinical trials, we know that they must have been part of those trials, their time using that pill translated into 'woman-years' and situated somewhere in those statistics.] They did not know they were part of a research project; the idea of 'informed consent' came later.

Infertility

Beginning in the 1970s many in my generation got what are called 'full infertility workups'. [See histories of US infertility research and clinical practices.] Quite a few were diagnosed with a thick skin on their ovaries - and were told to take Clomid, widely characterized in the media as triggering multiple births. [See histories of infertility techniques and technologies.] We joked with the doctors that we wanted babies, not litters; they felt we had an attitude problem. [See studies of the representation of US women patients as noncompliant, hysterical, 'douche-bags', etc in the nineteenth and twentieth centuries.] In another infertility work-up an eminent specialist concluded that an informant's fallopian tubes were abnormally long; he wanted to surgically shorten them, so they would be statistically normal. When she refused the physician wanted to send her to a psychiatrist. Many of us in the US were divorced within a year of these infertility diagnoses. □ [See statistical studies of the correlation between serious reproductive difficulties and divorce for this generation in the US; the rate has been between 75 and 95 per cent over the past twenty-five years. A child's serious illness or death often has similar consequences in the US.]

Self-help

We joined self-study groups at public health clinics; we paid twenty five cents for our own plastic speculums and we finally saw our own cervixes and our friends' too. [See the history of US public health clinics and the history of US women's self-help health groups.] Reading Nancy Henley they learned the politics of their physicians' touch and learned how to remove the sheet over their knees that hid their gynecologists' gaze from them.

During the mid-1980s I was a patient at a private obstetrics and gynecology clinic near Tokyo in Japan. During my several visits there all the other clients appeared to be Japanese middle class women. Many Japanese women subsequently have told me that the examination procedure I am outlining describes their experience, too; that is, this is considered the normal procedure for gynecological examinations. I was led into a large room with other women; there were several examination tables. We all changed into cotton shifts, got onto the tables, and put our feet into the stirrups. There was a curtain hanging from the ceiling halfway to the floor; it bisected the room. We women were each wheeled up to the curtain by nurses until the bottom half of each of our bodies was on the other side of the curtain. We heard the doctor arrive on the other side of the curtain; he examined each of us, in turn, speaking to each one. We could hear and see each other and we could hear the doctor talking to each of us and to the nurses, but we could not see the doctor. Later this resident alien explained to the doctor how unlike an American gynecological exam setting this had been, mentioning that in the US doctors see patients in private rooms, perhaps with one nurse attending. He remarked that Japanese women were too modest for that US practice.

Ultrasound

During the mid-1970s another informant in the US chose the new amniocentesis procedure. She received the then new genetic counseling, and had the procedure done. Her scientist partner who had accompanied her was quite surprised at the low quality of the ultrasound imaging technology being used. [See histories of ultrasound technologies; see also research on the technological infrastructure of US clinical practice and its funding.] Later her obstetrician, doing the then new ultrasound monitoring of her pregnancy, found no movement in the image, and after a few more days of finding no movement in the image he said the baby was dead.

After hearing the alternatives she decided to wait until her body delivered the baby "naturally". [See histories of the "natural" childbirth movements in the United States.] Some people told her she was morbid to carry a dead baby, now that it was legal to have the foetus aborted. Without the then new imaging and other diagnostic technologies, of course, no one would have known the baby was dead until the "miscarriage". [See the research literature on how ultrasound images have changed cultural discourses about pregnancy and pregnancy loss.] Home from the hospital she got a call from the research hospital telling her that her baby boy was healthy, that the test results were "negative". [See the research on genetic counseling for different diagnostic outcomes.] Her obstetrician said he was confident the amniocentesis had killed the baby, but it would not contaminate the fine research statistics: they only counted miscarriages that began within 72 hours of the procedure. Within a couple years three of her close friends had the same experience. [See the history of risk assessment and the history of statistical analysis of clinical practices. Can what counts be counted?]

Pregnancy Loss

Another informant lost her pregnancy after an amniocentesis. Her mother said, "I bet you are sorry you wrote those books when you should have been having babies." Her sister-in-law agreed. Many in the cohort of women under 60 have lived lives that are very different from their mothers; we are just beginning to write the histories of the shift in subjectivities that have accompanied the vastly larger opportunities in public life for middle class women since the 1970s. We are also beginning to study the distribution of choices made in this cohort and the implications of the variation in their choices for the next cohort.

That informant's considerable grief for her lost pregnancy was then considered excessive by her friends, her partner, her family, and her doctors. She was having an experience that few before her could have had. Prenatal genetic testing became available at US teaching hospitals about the same time that second trimester labor inductions became legal. Research on the physical and psychological effects of second trimester pregnancy loss became available about fifteen years later. By now there is a great deal of research on second trimester pregnancy loss; it is now known that bodies can take 18 or more months to recover from labor induced during the second trimester and that many women take about five years to recover emotionally. Most American obstetricians in urban areas now recommend that couples attend ongoing pregnancy-loss support groups. [See the cross-cultural research on these support-groups and their discourse.] The cohort of women who took those genetic tests between the early 1970s and the late 1980s and who experienced second-trimester pregnancy losses during those fifteen years did not know how common their difficulties were until the research began to be published in the 1980s. That pioneering cohort in the US, the group whose decisions were not guided by research and whose experience had no authoritative narratives, would now be between about forty and sixty years old.

Genetic Testing

During the mid-1980s after receiving a "positive" diagnosis for a genetic abnormality in her child, one informant asked for the proportion of Down's chromosomes in the results, since she knew that if only a few cells were affected the child might have few problems. She seriously considered carrying the pregnancy to term, based upon her observations a few years earlier of a support group for parents with Down's Syndrome. [See research on genetic counseling and on support groups for "affected communities" such as families with Down's Syndrome children.] However, her husband, a university-based researcher, was extremely opposed to raising a Down's child. He would not discuss this, but expressed his feelings by repeatedly imitating the movements of a child with cerebral palsy and speaking jibberish. She chose abortion, and then divorce. [See

the research on changing US attitudes and laws concerning people with different physical abilities; see also statistics on the US divorce rate among parents of children diagnosed with major physical difficulties.]

Prenatal genetic testing means that people now are presented with the necessity of making moral decisions in an utterly new moral domain. With the new diagnostic tests parents learn about possible genetic abnormalities before their children's birth and they are offered the possibility of abortion. Generations before them did not face these choices, choices triggered by accessible diagnostic images; the very language of how to talk about this kind of choice had to be invented. By the 1980s many people were being confronted with another new moral choice: whether or not to prolong life for people who are not likely to recover from profoundly disabling injuries and illnesses. The language for exploring those choices also had to be invented. We are beginning to see the research on these inventions of new moral discourses in many different cultures. It is not often that the world gets new cultural discourses about birth and death, that one generation's experience of birth and death can differ so much from the last that a new way of talking about it must be invented.

Barren Mothers

Following a 'positive' CVS result an informant and her husband decided she should have an abortion. Her induced labor lasted a day and a half before the foetus was expelled. In Japan they would not say the "foetus was expelled"; they explained that her daughter would be born dead. You see, in Japan she had a baby and she has her daughter's death certificate. By law the baby had to be cremated or buried. Later she went to a Buddhist temple that specialized in prayers for never-born children. The reason the children were not born alive is irrelevant at the temple; they are to be remembered; they are counted among a woman's children, statistically, socially. In Japan, then, she is a mother with three children, a son, a daughter, and a 'water child' [born too early to know its sex], all dead. While teaching in the United States one of her graduate students referred to our subject as "barren" and the teacher, startled by the agricultural metaphor in her post-industrial world and not yet adjusted to thinking like an American, said she was surprised that the label could be used to describe a woman who had borne three children. ['Barren' and 'fertile' clearly refer to agricultural modes of production. See histories of later representations of women's bodies as mechanized manufacturing sites; in this discourse non-production, whether through infertility, miscarriage, abortion, still-births, or menopause, is regarded as malfunction.]

Hemorrhaging

While writing her dissertation she became pregnant. The options were bleak; abortion was now legal and she chose one. Her heavy bleeding after the abortion led to hemorrhaging. After receiving her PhD and getting a faculty position, she began to spend a lot of time in London. She woke one morning in her apartment there to discover she was having heavy vaginal bleeding, quite similar to that she had experienced after her abortion; her partner took her to the "national health" where she encountered, for the first time, a woman gynecologist; the doctor's family was from India. [See histories of transnational circulations of public health personnel, such as the emigration of Philippine nurses to the United States and Indian physicians, especially women, to England.] The doctor said the bleeding could be a normal response to stress, but it could be more serious, so she suggested monitoring. The doctors at the American university where she was on the faculty suggested a hysterectomy; she went back to London, got monitored, and got better. [See histories of the significant national and regional variations in the rate of surgical interventions, particularly for breast cancer, hysterectomies, and cesarean sections.]

Policies and Re/producing Careers

Many in my generation re-entered graduate school and professional schools when the climate for women students improved in the mid-1970s. As we built careers we asked our employers about their policies for pregnant faculty, doctors, and lawyers; they usually had considerable difficulty responding to what they took to be an oxymoron. Even now early careers in the professions are still modeled on the image of a young man giving everything to his work, eighteen hours a day, from his undergraduate days until he gets tenure, joins a practice, or joins the firm; that usually happens between the ages of thirty-five and forty. The years 18 to 40 are a woman's major reproductive years, as they are for men. [See the research on the so-called 'mommy track' and the stigma associated with it; see also the research comparing men's and women's

'productivity' in the sciences.] As more women entered demanding careers at the same age as men, the assumptions about reproduction and productivity in the workplace have become volatile issues.

Inducing Menopause

An informant was given drugs to control pain. Later, in consultations with a gynecologist about her menstrual periods having suddenly stopped, she learned that the neurologist had prescribed the same drugs gynecologists use to suppress ovulation. [The neurologist asked, incredulously, why gynecologists try to suppress ovulation.] She was also having hot flashes; they determined that the drugs had induced menopause; it was not reversible.

Cervical damage

While still a graduate student doctors at a major research hospital told an informant that she had permanent cervical damage to her neck from an earlier car accident. Some advised that the deterioration could be slowed by wearing a brace the rest of her life; the head of the department said that if she were to train herself to have perfect posture at all times, she could go without the brace. About ten years later while giving lectures at another university she found herself numb on one side, but able to move. A prominent neurologist at major research and teaching hospital diagnosed her problem as hysteria, explaining to his students that this hysteria was due to what he called the stress on a middle-aged woman suffering from "an excessive level of success." [See research on representations of middle-aged women patients.] Another neurologist who knew the informant called the first doctor to say that the patient did not "somatize stress"; with this new information the first doctor then ordered further diagnostic tests: CAT scans, MRI, spinal taps, and so on.

According to the doctors, those first tests and ones done two years later revealed that her neck or "cervical region" was damaged, just as the doctors had argued twelve years earlier after her serious car accident; furthermore, they said she had two of four signs of MS, now known to be exacerbated by the stress of pregnancy. Her neck's "cervical" region had joined her reproductive cervical region as a contested discursive site. [See the literature on contested discourses and discursive strategies.] Her current doctor is a young Asian-American woman at a prominent university research hospital who thinks this patient might be an interesting research subject, so she wants more diagnostic images and tests, but the patient's HMO requires that new symptoms emerge before the tests will be authorized. Her new doctor remains eager to enter the diagnostic discursive debates about the body with so many images.

III. Warning Signs

Do you think these accounts could be read as the autobiography of a scientist? Do they read like a medical record? Did you think that these informants have "confessed" something "personal"? Did you think these are just "stories"? There is a major problem with narrativizing lives and bodies and using those narratives to build theory among people who have been severely disciplined to only use the passive voice and the third person plural in their work, among people who have been strongly socialized to believe that all epistemological complexity is lost when one writes in the active voice and with first, second, and third person singular pronouns or even first person plural pronouns. If you are one of them, this narrative might have brought to mind whatever pop-psychologies and do-it-yourself Freudianisms that are lodged there. The story might have elicited your sympathy; it might have triggered your anger; you might have felt a great distance from the subject. You might want to tell your narratives and show images of your body.

The narratives are from a cohort study, a study of people, a study of a generation. Consider my uses of the first, second, and third person singular and my uses of the first, second, and third person plural. The report was written in declarative, short sentences, hardly a compelling style of writing. Consider the research texts about bodies and resistance that are written in this body's story and that narrativize that life. Consider that my 'report' contained absolutely no information about what anthropologists would call any "interior" [psychological] states. All that you thought you read about 'personal' responses to the social facts of these lives were projected from your own minds; it did not come from my textual accounts. Meanwhile, did you notice the theories, methods, data, and images in this account?

Acting on Images

I remember meeting an aboriginal filmmaker in Houston at an event sponsored by the city's biannual international festival; that year Australia was being celebrated. He thought my research on physicists was a startling and very amusing reversal of anthropology. Besides filmmaking, his own work was the collection of all the data, including films and photographs, generated by anthropologists about aboriginals; these data were to be preserved in a museum run by aboriginals on aboriginal lands. As I mentioned earlier most of us now realize that a great deal of knowledge has been generated in colonial settings; historians of science, technology, and medicine are just now beginning to write the history of the way colonies and colonized peoples were surveyed and scrutinized and revised in the name of European and north American science, technology, and medicine. We have many studies, too, of the way women everywhere have been surveyed, scrutinized, and revised in the name of European and north American science, technology, and medicine. I think it is about time we asked why we refuse to speak in passionate voices about what we have learned from our research and what we have done about it.

The people I have studied during the past twenty-five years talk all the time about passion, commitment, intuition, style, and their pleasures in the work they do. In fact, if people do not display enough of these qualities as they do physics and make ideas about the physics they do, they are not taken very seriously. As I have written elsewhere, those physicists bring their bodies to their labs; they need them to think. Many anthropologists have written a great deal about how people all over their world use sex for thinking; in particular we use local ways of differentiating our sexuality as metaphors for other kinds of distinctions we want to make. Along with many others I suggest that we begin to notice how we embody our theories and theorize our bodies, just as I ask how physicists embody their theories and theorize their bodies. I even think we should be methodical about these investigations of our embodied rationalities.

Through my body I have learned a very great deal about technoscience and biomedicine; so have you. Our third person accounts in the passive voice do not allow us to report on what we have learned. That intellectual politics of silence constructs artificial barriers among our multiple ways of knowing. If we rejected that politics of silence, we would be obliged to report on what we have learned, how we have learned, and how our multiple ways of knowing are related to each other. We would have to write and think more carefully. We would have to raise the standards of research and argument. Our subject is too important to use the old conventions and traditional practices. In our current canonical ways of writing we must not and we cannot ask these questions. I have deliberately written this as an essay in order to avoid the intellectual constraints required by the literary form of the 'journal article'. As we feel our way through all these dilemmas and as we learn to write about our imaged, monitored, discursive bodies, I think we must explore how we can find patterns, make theories, write across the rules, and take action. Our research will be better; it will become more powerful and more important, too.

We need to write histories of those gaps in our arguments, those silences. Why have we slashed our minds from our bodies; why do we compulsively separate our ways of knowing; why do we deny that knowers have subjectivities? What did we think was at risk? The construction of those barriers and the containment of our risk are moral economies and personal questions and intellectual issues. Should we not investigate that activity? We all know our discursive sites are unstable and without closure; our lives are inconclusive discourse sites and they are without predicable endings. Does that mean that we are unable to think? How do we learn to make narratives about new kinds of images? What are our narrative ethics: whose stories are we telling? As I construct my interpretations about these scientific, technical, and medical images whose stories am I entitled to tell and whose images can I show? What are the research ethics and the narrative ethics if I ask whose story am I telling? Whose stories am I entitled to tell? Are there theories somewhere in my narratives of embodied images?

How are knowledge, politics, bodies, statistics, gender, race, and class made together? Knowing how to theorize memory, how do we challenge the politics of silence about the sexual violence in our lives and our mothers' lives? Who needs to know if there are theories and methods somewhere in the diagnostic images of our bodies? How do we all deal with the politics of expertise in the monitoring of our bodies? How do we go about constructing authoritative voices as researchers, as patients, as physicians? How do we make decisions about our bodies, as we must, when we can hear contested discourses and unstable interpretations without end? How do we console each other if we think we are living in an epistemologically and morally ambiguous world? How do we get access to the health care we want? How could we reconstruct the multiple political economies of health care constituting the practices in these stories?

As I feel my way through all these challenges, do research in new ways, and learn to write differently about diagnostic images and texts, I am theorizing messy worlds, transnational bodies. These can never be

worlds of isolated and controlled variables, even if all those well made images, monitoring devices, fluorescent lighted waiting rooms, clinical trials, and authoritative commentaries about our bodies lull us into thinking otherwise. We know how to make sense of the mess we are in. Let's do it.

Postscript:

I am eager to acknowledge the detailed and thoughtful suggestions I received from Adele Clarke, Amelie Rorty, Merritt Roe Smith, and Sherry Turkle; this essay has certainly been strengthened by them.

The press has discouraged us from using footnotes; they probably prefer that the same format be used throughout this book and most of the authors here are accustomed to a form that I do not use. I work in an academic tradition that finds text interrupted by bracketed proper names and dates quite tiresome, to put it mildly. Rather than collude with the press on this point, I have chosen to write here some very brief bibliographical notes, in lieu of footnotes, endnotes, or bracketed names and dates in the text.

Vincent Crapanzano's Tuhami, Portrait of a Moroccan (University of Chicago Press, 1980), Marjorie Shostak's Nisa, the life and words of a !Kung woman (Harvard University Press, 1981), and Carol B. Stack's All our kin: strategies for survival in a Black community (Harper & Row, 1974) are all compellingly written life histories.

Mariko Fujita Sano, Associate Professor, Anthropology Department, Faculty of Integrative Studies, Hiroshima University, is my friend and colleague with whom I have been working on our life histories.

Paul Fussell's The Great War and Modern Memory (Oxford University Press, 1975) and Raymond Williams's Keywords : a vocabulary of culture and society (Oxford University Press, 1976) report on how the sensibilities and ways of thinking of a generation can shift abruptly.

Marcia Meldrum's "Departures from Design: The Randomized Clinical Trial in Historical Context, 1946-1970," a State University of New York at Stony Brook PhD dissertation from 1994, and Nellie Oudshoorn's Beyond the Natural Body: An Archeology of Sex Homones (Routledge, 1994) both explore the birth control pill's clinical trials.

Nancy Henley's The politics of touch (Know, 1970) taught many of us to powerfully reevaluate all our 'doctor-patient' relations. She argued the point more fully in Body politics: power, sex, and nonverbal communication (Prentice-Hall, 1977). See also the many histories of obstetrics and gynecological practices.

Since the early 1970s I have been studying how experimental physicists using very high energy particle accelerators make and revise their ideas about the phenomenal world in their laboratories. I have explored their embodied rationalities and their sentimental education in Beamtimes and Lifetimes: The World of High Energy Physicists (Harvard University Press, 1988, 1992, 1995); "Border Crossings: Narrative Strategies in Science Studies and Among High Energy Physicists at Tsukuba Science City, Japan," in Science as Practice and Culture, edited by Andy Pickering (University of Chicago Press, 1992; pp. 429-465); "Bodies of Evidence: Law and Order, Sexy Machines, and the Erotics of Fieldwork among Physicists," in Choreographing History, edited by Susan Foster (Indiana University Press, 1995)

In several recent articles I have been foregrounding the relationship between my own research practices and my 'findings'. In addition to the works cited above see my "Unity, Dyads, Triads, Quads, and Complexity: Cultural Choreographies of Science" in Science Wars, edited by Stanley Aronowitz and Andrew Ross [Duke University Press, 1997]; "Iconic Devices: An Ethnography of Images in Physics," Citadels of Science, edited by Gary Downey and Joe Dumit [University of Washington Press, forthcoming]; "When Eliza Doolittle studies 'enry 'iggins," Technoscience, Power, and Cyberculture: Implications and Strategies, edited by Stanley Aronowitz (Routledge, 1996); "Bachigai [out of place] in Ibaraki: Tsukuba Science City, Japan," in Late Editions (vol. II: "Scientific Imaginaries"), edited by George Marcus (University of Chicago Press, 1995).