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Science in politics : eugenics, sterilization, and genetic screening.

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FIVE COLLEGE
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Science In Politics: Eugenics, Sterilization, and Genetic Screening

A Dissertation Presented

by

Douglas C. Telling

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 1988

Political Science

Science In Politics: Eugenics, Sterilization, and Genetic Screening

A Dissertation Presented

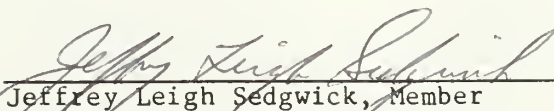
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This work is dedicated to my parents who are relieved that they outlived this project.

ABSTRACT

Science In Politics: Eugenics, Sterilization, and Genetic Screening

September 1988

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Directed by: Professor Glen Gordon

This work examined applications of genetic knowledge for political purposes. A debate exists over whether technology operates according to deterministic imperatives or is subject to human control. The central concern of this work, therefore, was the capability of the political system to ensure that technological applications served ends consonant with the democratic and moral values of the American political system.

The first topic examined was the eugenic legacy. Beginning in the first third of this century as a nativistic enterprise, it was transformed after the 1930's into the application of genetic knowledge for the purposes of breeding a genetically perfected race. A review of contemporary sterilization practices followed. Despite the appearances of revived eugenics, the lure of the technical fix proved to be a better explanation for most sterilization uses studied. The final case study examined carrier, prenatal, and neonatal screening. Particular attention was paid to the legal status of the techniques, the politics of their establishment and accessibility, and their potential future applications. All of the techniques examined extended society's ability

to address the issues motivating their introduction, but they also created new opportunities which extended their influence into new areas, challenging existing values (e.g., reproduction, marriage, individual autonomy, sanctity of life). The final discussion examined the political institutions' response to these techniques and their extended influence. Generally, the political system responded by addressing the techniques narrowly, paying minimal attention to the social values affected by the cumulative impact of the techniques. The courts reduced the techniques to individual rights and the legislatures narrowly defined the issues as technical or responded to interest group pressures. The result was technological incrementalism. For the political system to control democratically the ends to which technologies are applied, the legislative branches will have to act more systematically and substantively. Politics as usual--both institutionally and morally--is incapable of addressing the extended responsibility required by technological politics.

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INTRODUCTION

The relationship between biology and politics is not a new subject. The eugenics movement, beginning in nineteenth century England and spreading to the United States in the twentieth century, is the most developed modern attempt to connect the two. Today, the two mix in a society increasingly dependent on science. The interest in biology grows in part from what biology can do for politics, but also as part of the political system's broader interest in science.

The subject is of interest to a political scientist because of the great promises made for the new biology and the fundamental nature of the research: it studies the biological keys to life. But the political scientist is also aware of the broader science/politics context. The experience with nuclear physics provides the policy background against which biology will be examined here; and it is important to realize that that legacy was, and is, contentious. As a society, we approached science and technology in search of a "technological fix" that would cure an ill or improve a condition. What society came to discover was that the fix, while often doing what was immediately promised, also brought with it new problems and environmental hazards. Consequently, many believed that scientists imposed horrendous burdens on the human race, while others indicted misguided (or evil) politics. Now, at a relatively early stage of research, the biological sciences are undergoing strict scrutiny.

This work is a case study of two among the many ways public and private power have employed biological techniques to achieve power's ends. The hope underlying this work is that these examples will provide insights into how best to approach the developing relationships between politics and biology.

I

During the second two-thirds of the twentieth century, power (both public and private) has increasingly employed science to solve problems and conquer frontiers.¹ Most notable has been the role of physics; but the biological sciences, too, played an important role that dates back to the first years of the century. Organized in 1904, the eugenics movement sought to exploit the young field of genetics in order to control what many eugenicists perceived to be a growing threat both from new immigrants and, more generally, from those of lesser than normal mental and physical stature. Now, governments fund, regulate, and deploy genetic knowledge as part of their public health function. The private sector, too, has used it as a way to regulate the workplace.

The core of this work will examine this relationship between biological knowledge and power. The study is descriptive and inquisitive in nature, seeking simply to understand the uses to which various centers of power have put scientific knowledge and how best to understand those practices. The study begins by reviewing eugenics: the first significant modern attempt to employ the knowledge and authority of the biological sciences for political ends. Next, two examples of

this relationship, sterilization and genetic screening, are reviewed. Of overriding concern is the nature of this relationship: Does politics control its own destiny. From this review, it is hoped we will be better able to evaluate the new biological discoveries and techniques that are now flowing from scientific laboratories into our political economy.

II

Recently, new medical technologies have thrust previously private medical decisions into the headlines. Baby Fae became a public person as a result of technologies that allowed us to extend life in time and quality. Baby Jane Doe and Karen Ann Quinlan became notorious because of a refusal to employ powerful technologies.² These medical technologies, and the promise in current genetic research of greater capabilities, have provided us with the possibility of controlling life in a most sophisticated manner.

French philosopher Michel Foucault offered a provocative account of society's interest in the life sciences, an account that captures a concern of this work:

But what might be called a society's "threshold of modernity" has been reached when the life of the species is wagered on its own political strategies. . . . [M]odern man is an animal whose politics places his existence as a living being in question.³

Foucault's argument did not refer to such overt threats as a nuclear doomsday. Rather, he referred to a politics that treats as a political question the nature of the "living being." His account presented

politics managing life. It is a bureaucratic relationship. The expansion of biological knowledge offers possibilities for the political system to achieve its goals. Politics exploits, in a subtle and precise manner, the fact that man has a body.

The direction of the action is important. Politics acts on the person. The purposes and goals are those of politics, not science. Not all students of science accept this last point. Some observers contend that technology is out of control; that technology grows to meet its own needs. This precludes meaningful political action.⁴ Others argue that science responds to the priorities of politics.⁵ Granted, the consequences of a deployed technology may necessitate a political response (e.g., pollution), but these all occur within a politically defined context. The political system when confronted with technologically-caused problems may re-evaluate the original purpose behind deploying the technology in question. The point of this position is that politics can choose. Consequently, two of the general questions under study are, first, whether or not the pattern of technology's deployment reflects political choice or rather technological imperatives and, second, to what extent is the body treated as a means toward political ends.

In the following discussion politics generally will refer to policy. This involves, for example, concerns such as regulating the sterilization of the mentally impaired. But politics also encompasses issues of public and private. By this account strict enforcement of rules would, under certain conditions, interfere with the ethics of

medical practice, the doctor/patient privileged relationship, and a doctor's expertise. In other words, the public crosses into the private when it interferes with the traditionally private relationship between a doctor and patient, a relationship generally constrained by the ethical framework obligating the doctor to employ whatever means are necessary to treat the patient. It is not uncommon for the public and private to be merged under the rubric of "power". Three aspects of the public-private relationship account for this. For one, both public and private power view science instrumentally. They support science for what science can do for them. Another reason follows from an increasingly mixed economy. As each realm becomes involved in the other's affairs, their interests and needs (even identity) merge. Finally, both realms may be seen as serving different needs of the State or Order. This follows from membership in an organized collectivity. Different distributions of functions between the public and private realm reflect a polity's decision as to how the State operates. But both realms exist to fulfill needs of the State and in that sense share common purposes. Unless the State is defined as a- or non-political, this implies an interest for the political scientist in both the public and private realms.

Finally, politics has a moral and ethical component. In many ways, this dimension is what defines the polity and gives it a reason to exist. This perspective encompasses concerns about life, nature, and spirit. Returning to sterilization, from this perspective sterilization may be objected to as unnatural or against God's wishes. This

represents a paradigmatic concern while the the issues of policy and public/private exist at the level of consensus or contentious politics. The thrust of this work is contentious analysis: analysis where the analyst acts as moral critic questioning the specifics of policy (although not necessarily the paradigmatic framework) with an eye toward ensuring that the political system understands the consequences of its actions and that these consequences are consonant with policy objectives.⁶ Most of the following will be within the context of institutions and programs, but it is also intended to speak to politics more broadly understood.

This study is confined to science in the United States. Some argue that science needs a democratic system, but from the success of science in the Soviet Union we know that science can survive (maybe not flourish) in a system better described as totalitarian than democratic. The latter allows for an unfettered research system but has a limited capacity to control the political dimension of scientific research, while the former, better able to deal with the political side of science, suffers from the tendency to an exaggerated influence on scientific practice. The following presumes the democratic context.

III

The fruits of scientific research have provided us with greatly enhanced abilities. These extended capabilities allow us to explore areas ranging from the vastness of space to the minuteness of the atom. In genetics, scientists have been able to identify the basic units that

determine an individual's characteristics. Specific diseases or conditions can be identified before birth and this knowledge may be used to plan reproduction. Science continues to expand our understanding of the role genes play in our lives and, at a slower pace, brings with that knowledge the ability to act on those genes to attain desirable goals. These impact on politics because of the values that they affect and political officials' interest in using the techniques as policy tools. As genetics has deepened its understanding of the human body, the political system has made the technological fruits of this research available to the public.

But with these extended capabilities come strains to our political, economic, and social fabric. Some question the appropriateness of mankind "playing God." Others question mankind's ability to make these judgments, even if it is appropriate. Increasingly couples are confronted with the difficult decision of aborting their fetus or letting it come into the world with mental or physical defects. These choices wrench the lives of the individuals and challenge the values of large segments of the population. Why then do we continue to push these limits? One explanation resides in a "technological faith." The motives here resemble those of the old PF Flyers sneaker advertisements: we can run faster and jump higher if we wear the correct sneaker. By adopting improved technologies "[m]embers of the society are able to do more things, more efficiently, over further distances, at much faster speeds."⁷ These factors become a benchmark of progress.

The use of genetic techniques has moved from the explicitly eugenic programs to therapeutic and diagnostic applications. The next stage will involve more profound genetic manipulations. Have these been adapted to serve political ends? What unintended ends become served? Confronted with extended capabilities, has the political system been able to reflect on these abilities, identify their strengths and weaknesses, and assess their value? Have the value of the techniques been compared to other means to achieve the political ends?

Caught up in a belief in technology's power, new or improved technologies often become a part of the political agenda. A form of "reverse adaptation"⁸ occurs where public and private power adopts new technologies on the assumption that their development ensures progress. Technological faith may best describe this phenomenon. Salomon walks a thin line between determinism and faith:

The idea of a science policy suggests that the decision-makers at least intend to orient the research system towards the attainment of certain goals, but are these goals themselves not in fact defined by the momentum which the system itself has gathered? What science deems feasible--the technically sweet--becomes in technonature something which power cannot do without, not because it meets a real need but because it determines the artificial needs of society. Because it is feasible, because it can be done, it must be done, even if the result creates more problems than it solves or even if it solves nothing at all.⁹

At work are two political phenomena. First a system of action and reaction exists between science and politics. While power may use science to achieve its own goals, science's actions in turn influence political goals (e.g., pollution or nuclear research). In response, power again will look to science. This is the system's momentum. It

also includes the second point of political interest: the progression of technological development results, in part, from the unstated political assumption that the "perfect sneaker" is indeed a goal worth achieving.

Technological advancement is often confused with substantive change. Faith in a technological fix results from the inability to see past technological reasons for failure. Reliance on scrubbers or tall smoke stacks will not "solve" acid rain or industrially caused air pollution. Expensive purifying systems will not end water pollution just as hazardous waste problems will not disappear through the monitoring of dumps. Rather, these issues need to be seen in the political-economic context which produced them. Science may help, but it cannot decide the political problems for us. To the extent that we rely on science for solutions we deny politics substance and endow politics with the instrumental rationale of technique. This reversal and confusion is a key element of the technological fix.

When technological faith becomes overpowering, democracy suffers. The implications for democracy center on the ability for reflection and debate, which is made difficult on issues addressed technically. The preferred position the structure gives to those who understand its technical parts (never the whole) has direct implications on the state of democracy:

But if matters of structure and mode of operations are to be excluded from scrutiny by all but the appropriate experts, then the most crucial aspects of the formative influence of technology in the world are totally removed from any conscious, public attention or dispute. It is in this formative character that technology gives up its claim to neutrality and becomes a distinctly political matter.¹⁰

This brings the discussion to the institutional question of who governs and for what ends. Science and technology are of political interest because of the capabilities they offer to the political system. Recognizing that some mental conditions are genetically transmitted or that certain workers carry a genetic predisposition to certain workplace hazards may lead to more precise strategies to resolve those problems. But this reduction may also cause the system to lose track of its political ends and adopt techniques out of a faith in their progressive and curative nature. In that case, politics loses control. The reduction of mental health or workplace safety to genetic issues removes them from broad political discourse. Who is to argue against expert evaluation that new and more precise genetic remedies should be adopted? The danger, albeit not guaranteed to manifest itself, is that the issue will move from one of a safe workplace to one of perfecting the individual worker.

Technological faith may also result in overstating the technological dimension of the issue. Care must be taken to recognize that a technology is both a technique and a set of capabilities that influences social and political values. Missing the latter point may allow political figures to be overly deferential to experts during technological assessment. The "who governs" question becomes an inquiry into the extent to which the political, and in particular the democratic, branches examined the substance of the technique in its broadest political context.

IV

Chapters One through Three examine empirically biology and politics through a combination of historical analysis and case studies of contemporary practices. The two cases (Chapters Two and Three) were chosen to exemplify the issues, but are not intended to be comprehensive or definitive. They will examine how the use of science has created peculiar problems stretching the political system's capabilities; how the problems of science policy have merged with long-standing political issues but provided more subtle means of handling them; and how the political system has dealt with new scientific techniques. These are issues of extended choice and capabilities. Throughout this section runs a fundamental question: to what extent was the knowledge used to meet a political problem or need employed because that knowledge was, in Oppenheimer's delightful phrase, "technologically sweet"¹¹ and therefore irresistible?

By way of introduction to this section, Chapter One will present a review of eugenics in American politics. As one of the earliest and most politically self-conscious attempts to link biology and politics, the eugenics movement stands out as an enduring example. The leading opponent of applying genetic engineering, Jeremy Rifkin, argued that "eugenics is the inseparable ethical wing of the age of biotechnology."¹² Many writers on the new genetic techniques either distinguish their interest in these techniques from eugenics or show how certain elements of the eugenic agenda are benign and consistent with

sound public policy. The eugenicists even sought to distinguish their past from their "new" eugenic program. Finally, those who do not address eugenics or the issues tied to it probably should. The slope is slippery between the purely technocratic use of biological knowledge and the use of biology to achieve political goals.¹³

The two case studies, sterilization and genetic screening, were chosen because of their ties to the past and future, respectively. Early in this century, sterilization became a controversial technique, in part, because of the eugenicists' attempts to employ it as a policy tool. While this effort failed in practice (over half of the states, however, passed sterilization laws), the technique has remained and grown in popularity and sophistication. If eugenics remains an important idea, this is one place it might appear. In other words, sterilization's ties to the past raise questions as to its current practices. The second case, genetic screening, involves practices growing out of contemporary research. Any significant attempt to systematically employ genetic knowledge for political ends (as suggested by Foucault) would necessarily need a technique to identify or screen for those most appropriate for genetic alteration or control (or whatever). Genetic screening has been around long enough to develop a history and a pattern of "benign" uses (amniocentesis). This case may provide a window through which to examine where the genetics-politics nexus is heading.

Thus the proximate issues are evaluating the two case studies in light of their eugenic background and the effect of technology on

politics. Which, if either, is the dominant force? What difference does it make? Reviewing these experiences with genetic techniques provides an opportunity to examine the scope and bias of the political system's actions. The concluding chapter examines the political institutions' response to technology in terms of the issues both examined and neglected by the institutions and the characteristics of the institutions themselves.

NOTES

1. See Jean-Jacques Salomon, Science and Politics, trans. Noel Lindsay (Cambridge: MIT Press, 1970, 1973).
2. On Baby Fae, an attempt to implant a baboon heart into a human infant, see "The Subject is Baby Fae," The Hastings Center Report 15 (February 1985):8-13. In the Matter of Baby "M", 525 A 2d 1128 (NJ, 1987). On Baby Jane Doe, see Bonnie Steinbock, "Baby Jane Doe in the Courts," The Hastings Center Report 14 (February 1984):13-19.
3. Michel Foucault, The History of Sexuality, Volume I: An Introduction, trans. Robert Hurley (New York: Random House, Vintage Books, 1980), p. 143.
4. See Langdon Winner, Autonomous Technology: Techics-out-of-control as a Theme in Political Thought (Cambridge: MIT Press, 1977).
5. Salomon.
6. Martin Rein, Social Science and Public Policy (Harmondsworth, Eng.: Penguin Books, 1976), pp. 125-126. Rein distinguishes between three research strategies: consensual (where knowledge producers and users are linked), contentious (where research acts as moral critic), and paradigmatic (where research operates independent of the established framework). (p. 125)
7. Winner, p. 287.
8. Winner, pp. 226-236 and pp. 238-251.
9. Salomon, p. 238.
10. Winner, p. 225.
11. According to Salomon: "Even more significant is the situation in which the scientist, blinded by the beauty of the technical solution he has in mind, succeeds in eliminating the political context of the decisions which determine the urgency or the nature of that solution. This 'complex' of 'technology for its own sweet sake', or, in Oppenheimer's words, the 'technically sweet' solution, which makes it seem imperative to complete a project once it has been deemed feasible, no matter what the consequences. . . ." p. 165

12. Jeremy Rifkin, Algeny: A New Word--A New World (Harmondsworth, Eng.: Penguin Books, 1983), p. 229.
13. See Robert H. Blank, The Political Implications of Human Genetic Technology (Boulder, Colo.: Westview Press, 1981); Jonathan Glover, What Sort of People Should There Be?: Genetic Engineering, Brain Control and Their Impact On Our Future World (Harmondsworth, Eng.: Penguin Books, 1984); June Goodfield, Playing God: Genetic Engineering and the Manipulation of Life (New York: Harper and Row, Harper Colophon Books, 1977); Ted Howard and Rifkin, Who Should Play God? (New York: Dell Publishing, 1977); Melvin Konner, The Tangled Wing (New York: Harper and Row, Harper Colophon Books, 1982); Sheldon Krimsky, Genetic Alchemy: The Social History of the Recombinant DNA Controversy (Cambridge: The MIT Press, 1982); and Rifkin, Algeny.

CHAPTER I

THE POLITICAL BODY

The relationship between physics and government has been, to date, the most controversial and prominent issue in the study of science in American politics. This relationship grew out of the long standing tie between government and the scientific community in the area of weapons research. Notwithstanding a more limited governmental connection, another science, genetics, also has a rich political history.

Inspired by the writings of Sir Francis Galton, a political movement began in England employing the knowledge of heredity to ensure the continuing improvement of "the race." Galton christened this field eugenics. Galton wrote during the last quarter of the nineteenth century and a group of committed followers gathered around his ideas. In America, however, no sustained movement developed until after 1900 and the rediscovery of Mendel's work. The American movement, primarily middle class, consisted of sympathetic geneticists joining social reformers. They focused primarily on state laws, although they briefly reached into national politics with the Immigration Reform Act of 1924 and the 1927 Supreme Court case, Buck v. Bell.¹

The eugenics movement is important because of the political agenda it enunciated and continues to advance. Eugenicists seek to bring into fruition the political potential of genetic knowledge.

Despite the fact that the movement failed to achieve its goals, the movement turned that failure into an opportunity to redefine the movement and to enunciate a position and strategy that allows for the modern use of biology to achieve political influence on the race and body. To understand their positions, the obligatory starting point is Sir Francis Galton's thought.

Sir Francis Galton

Galton was in the best tradition of the English gentleman scientist. Few, if anyone, would disparage his character, and his scientific credentials were impeccable. He made major contributions to statistics, psychological testing, and hereditarian research. He was a respected scientific authority and a Fellow in the Royal Society. A cousin of Charles Darwin, Galton was greatly influenced by Darwin's On the Origin of the Species and, with his cousin's support, sought to find its applicability to society.

Galton's research focused on how our ancestor's traits were passed down to us. According to Darwin's theories, natural selection ensured that the best traits were transmitted to future generations. But, Galton feared, civilization "diminish[ed] the rigour of the application of the law of natural selection."² Man's social organization interfered with natural selection by interjecting irrelevant concerns into marriage decisions (e.g., religion, class, education). Because natural selection is prohibited from working

freely, Galton sought to apply the success of animal breeding to human breeding as a supplement.

To this end, Galton promoted eugenics. Relying on his faith in science, Galton believed that man could overcome civilization's perversions through careful planning and an educated public. His interest in eugenics was not casual. He hoped that the eugenic spirit could be "introduced into the national conscience, like a new religion."³ But his new religion did not rest on ancient texts and dieties; it relied on scientific knowledge working through an unselfish community (nationalist) spirit. In a quintessential statement of social action based upon scientific knowledge, Galton elaborated on this point:

[W]hat nature does blindly, slowly, and ruthlessly, man may do providently, quickly, and kindly. As it lies within his power, so it becomes his duty to work in that direction; just as it is his duty to succour neighbours who suffer misfortune.⁴

The obligation to act lies with society, not with the scientist. Once we have the knowledge, it is our duty to use it to improve our society. This argument contains two important aspects of eugenic thought. First, it illustrates the naturalistic basis of eugenics. Man is not choosing the direction to improve the race, rather he acts in ways nature dictates.⁵ The bias lies in favor of scientific knowledge and the ideal resembles something akin to the philosopher's state of nature where non-natural forces cannot intervene. Social knowledge, at least where the development of the human race is concerned, is less reliable. The obvious lesson is that only scientific facts can be considered reliable.

The second aspect of eugenic thought found in the above quotation is the strong sense of social purpose. The eugenicist sees himself as protecting society from itself, enabling it to move in the only direction that will allow for the fullest expression of the human potential. In Galton, this form of elitism takes the course one would expect from the English gentleman scientist:

I cannot doubt that our democracy will ultimately refuse consent to that liberty of propagating children which is now allowed to the undesirable classes, but the populace has yet to be taught the true state of these things. A democracy cannot endure unless it be composed of able citizens; therefore it must in self-defence withstand the free introduction of degenerate stock.⁶

He saw eugenics as promoting democracy through the leavening of the population. Education will enable all classes to understand their duty and thus be willing to sacrifice some of their own desires (e.g., propagating children) in order that the society can benefit. Coercion plays no direct role. The successful eugenics program will work mechanistically but also "providently" and "kindly":

The aim of eugenics [asserted Galton, in 1904] is to bring as many influences as can be reasonably employed, to cause the useful classes in the community to contribute more than their proportion to the next generation.⁷

But true to the politics of the English middle class, class differences offer telling evidence as to one's worth. This is not, however, an insidious attempt to promote one's own class and keep down the lower classes. Rather, Galton attempted to improve the race by ensuring that those with the best traits bred together. He used success to measure worth.

The ideal Galton strove for was the sober, rational, and predictable person. Specifically, he sought to create individuals of "more vigour, more ability, and more consistency of purpose"⁸ than existed at the time. These are the characteristics any head of state would like to see in his citizens. Throughout all of his writings on eugenics, Galton emphasized the role of the state: especially what eugenics could do for it. The purpose of eugenics was not for ennobling individuals (although it did that), but rather to assist the state in its missions at home and abroad. For example, he wrote:

Let us for a moment suppose that the practice of Eugenics should hereafter raise the average quality of our nation to that of its better moiety at the present day, and consider the gain. The general tone of domestic, social, and political life would be higher. The race as a whole would be less foolish, less frivolous, less excitable and politically more provident than now. Its demagogues who "played to the gallery" would play to a more sensible gallery than at present. We should be better fitted to fulfill our vast imperial opportunities. Lastly, men of an order of ability which is now very rare, would become more frequent, because the level out of which they rose would itself have risen.⁹

The importance of this position lies in the juxtaposition of democratic ideals and the statist bias. Despite his reasoning that democracy depends on the intellectual and moral advancement of the citizenry, the subversive or dissenting potential of democracy is minimized by the characteristics Galton idealizes and the social stratas chosen for advancement and restriction. These groups and ideals embody the values of the status quo and those who currently set the parameters of debate within the governing political and social circles. Galton's categories for limited propagation also included the likely sources of social and political dissent. Galton tapped into the dominant social sector's

values, presumptively approving of them. Here, however, lies a danger. Doubts should center on the invisible and undebated means by which the ideal is assumed and left unquestioned by well-meaning people like Galton.

Galton developed a program and research agenda in order to promote his eugenic ideas. Their specifics are of interest to a study of American eugenics in that the Americans borrowed the major issues from Galton, even as they passed over many of the details. For this reason, a brief review of Galton's position will help explain the background of the eugenic idea and the substance of the field.

Galton introduced the two strategic categories within which all efforts at applied genetics fall: positive and negative applications. Positive eugenics promotes those traits deemed superior. To this end, Galton called upon talented men and women to marry one another.¹⁰ In practice, this meant those of higher social rank--those society deemed to embody the best traits--would marry and produce more children than they currently did. This was their social obligation. By increasing the population at this end of the eugenic scale ("its better moiety"), the race would improve and, Galton hoped, reach a point where the weaknesses passed on by our ancestors would be eliminated. In this way, the race would be remade. Again, we see Galton drawing on breeding analogies:

We might [after many generations] produce a highly bred race, with no more tendency to revert to meaner ancestral types than is shown by our long-established breeds of race-horses and fox-hounds.¹¹

To support this belief, Galton, like many eugenicists, relied upon

impressionistic evidence. For example: "the enormous intellectual digestion of German literary men, which far exceeds that of the corresponding class of our own [English] countrymen, may, in some considerable degree, be due to this practice [of German professors marrying the sisters or daughters of other professors]."12 Elsewhere, he related the professions of "notable persons" and the frequency with which "talent and peculiarities of character are found in [these notables'] children."13 These sorts of evidence provided the justification for his assumption that mental traits are transmitted in the same manner as physical traits. Galton's use of social and economic accomplishment as a standard to measure genetic worth is common among eugenicists' writings.

Positive eugenics seeks to take what society deems as good and to increase its proportion in the population. Negative eugenics tries to eliminate or contain bad traits. Many of these undesirable traits have been associated with the undesirables of society. Negative eugenics seeks to convince these "genetically weaker" people to reproduce less often, or not at all. This was Margaret Sanger's position and that of the early American eugenicists who supported both sterilization and institutionalization for criminals, feeble-minded, and those suffering from various infirmities. Galton's work emphasized positive eugenics, but he recognized the negative dimension and later others, with less benign motives than he, expanded on the theme.

Galton's research and policy agenda contained an important institutional component. He isolated three eugenically important

institutions: institutions for the criminal and feebleminded, charity, and the customary institutions of religion and marriage. Treatment of criminals, the feebleminded, and those on charity needed to be tempered by their eugenic implications. Galton advocated keeping habitual criminals segregated to restrict their opportunity to continue their depredations and to preclude "low class" offspring. Aid to institutions for the feebleminded, however, was suspect on the ground that it might promote their marrying one another and producing offspring resembling themselves.

Charity cases covered the range of abnormals and needed to be dispensed in a scientific or planned manner. Rather than indiscriminately supporting "needy" people, Galton urged that charity be targeted according to eugenic purposes. Those "down and out," surviving solely upon charity, could only contribute more of their kind while draining the nation's resources and degenerating "the race." Consequently, charity should be diverted away from them to those able to contribute to society. He made a similar argument in regard to educational funding: rather than waste educational support on those who lacked the minimal skills necessary to benefit from the aid, educational support should promote the students most likely to contribute to the society. In sum, Galton supported scientific charity: rationally planned and targeted. This became a goal of many American eugenicists and remains a political issue.

A final institutional consideration centered on the customary and social forces of religion, wealth, and marriage. These related back

to his concerns about civilization interfering with natural selection. Galton cited the socially pernicious effects of religious taboos against interfaith marriage or pressures to protect family property through such extreme means as compelling a man to marry the widow of his brother. These examples illustrated how religious and property influences produced marriages either indifferent or hostile to eugenic concerns; the flexibility necessary for the eugenically best to meet and marry was denied. Wealth, too, interfered in the eugenic treatment of feeble-minded or weak offspring. The wealthy, able to pay for special care, could "hide" their feeble-minded and sustain them into childbearing years. A similar situation existed for their mentally normal but physically weak: these children benefited from the wealthy's superior medical care and often lived well beyond the years of comparable children in poorer families. In both cases, the wealthy "defectives" could live to reproduce while the poor's defectives would not (especially if charity was scientifically distributed). Conversely, poverty could result in the killing or hindering of the poor's strongest children. This would result in a disproportionate birthrate among the weak (but rich) over the genetically superior (but poor).¹⁴

Galton desired marriages to promote good qualities and expected this priority to supercede more traditional and basic marriage desires. This argument illustrates the central strategy of Galton's eugenic agenda. To succeed, eugenics must be absorbed into the social consciousness; people must naturally think and act eugenically.

By way of summary, many of the key elements of American eugenics can be found in Galton's thought. Foremost is Galton's reliance on science as a means to social well-being. He sought to put into political practice scientific knowledge as if it represented a neutral truth. This constituted a naturalistic political and social outlook; an outlook that relied on the scientific fact as the most reliable form of knowledge. Four other elements of American eugenics are foreshadowed in Galton's work. First, Galton worked to find ways to improve the race. This was the proximate goal of his research. Second, eugenics was to be placed within a nationalistic orientation. It subsumed the individual to the greater social and national good. This was the ultimate goal. Third, Galton exemplified the technocratic and elitist side of eugenics. The technocratic dimension follows from naturalism. The elitism is seen in the paternalistic view that the scientist can know who are best suited to marry whom and isolate the ideal characteristics for social and genetic growth. The elitism is also tied into the final parallel, social conservatism. The identification of good traits is closely tied to the contemporary standards of success. The full implementation of eugenic goals would ultimately serve to re-enforce and perpetuate the status quo.

American Eugenics: 1900-1930

Few people today would admit to being eugenicists. This reaction results from the American eugenics movement during the first third of this century. This rejection does not constitute a rejection

of eugenics' core principles, rather the early tactics and underlying political agenda of the movement repel most modern democrats.

The movement did not immediately follow from Galton's writings. The American version of eugenics grew only after it had a scientific field to support it. It gained this support in 1900 when genetics came into its own with the rediscovery of Mendel's work.¹⁵ Unfortunately, the movement became captured by those interested in preserving the northern European stock as the dominant American "race" rather than promoting the sorts of racial goals Galton advocated.

Background

Linking itself to Mendelism and the new field of genetics separated American eugenicists' methodology from Galton's ancestral approach, but both shared a naturalist basis. American eugenicists queried into biology's potential to improve society: what can biology tell us about ourselves qua humans and about human society?¹⁶ Natural selection, as Darwin portrayed it, provided the outline that explained the proper working of society and the rules by which the race could improve. This biological determinism knew no limitations. The issue of environment and heredity interacting had not yet gained legitimacy; the most influential in the eugenics movement attributed most human traits--both good and bad--to heredity.

Mendel provided the scientific foundation to this view. His position claimed that inheritance is particular to each individual. One's traits result from the mixing of genes (some dominant, some

recessive) of one's parents. In contrast, Galton believed that inheritance can be traced in fixed proportions through ancestors. Because of its youth, genetics lacked a sophisticated body of knowledge; consequently, some simplified Mendel's conclusions to the so-called "single gene theory" whereby each trait results from a single, identifiable gene.

A significant implication of the single gene theory was the rejection of Lamarquian genetics, or the acquired traits theory.¹⁷ Previous to Mendel's resurrection, this view was widely accepted among American students of heredity. Along with Lamarquian beliefs, however, social reform lost out as a viable policy. If traits are an inherent part of an individual's genetic make-up, then the hope that better living conditions could contribute to a strengthened person and that such strength could, in turn, be passed onto future generations lost its credibility. This necessitated a move from a strategy involving social reform to one regulating genetic stock.

A target for many eugenicists were the feeble-minded and habitual criminals. Each was believed to have hereditary tendencies which could only be addressed through breeding them out of the race. This movement toward breeding was led by those who had previously worked in the environmentally based reform programs: heads of prisons or corrections departments, social workers, and directors of institutions for the feeble-minded. In short, they were middle class professionals who saw their values as universals and did not believe that "normal" people could continue to live the way their "wards" did.¹⁸ Efforts at

reform through environmental manipulation apparently had failed. The problem, however, was not that the feeble-minded were not cured, but that their numbers, and the numbers of other "degenerates", were increasing.

Donald Pickens summarized their fears as follows:

The racial degeneration of modern urban society worried American eugenists. [sic] They saw the increased number of the feeble-minded in the United States by immigration and natural increase, as definite indications of racial inadequacy. In brief, they argued that contemporary life increased the numbers of the inadequate at the expense of the adequate. The task, therefore, was of restoration, of returning the primacy of natural selection to men's affairs. Modern society protected the naturally inferior from their true destiny of extinction; eugenists [sic] urged policies of removing the restrictions on natural selection.¹⁹

In sum, biology provided the remedy for society.

The historical context helps explain the views held. At the turn of the century, American society faced dislocations due to the emergence of an industrial state. The political agenda had changed;²⁰ the American role in the world had begun to grow; European dislocations brought new immigrants to America; and within this country the migration from the country to the city was in full blossom. Much of the most virulent strains of eugenic thought and action reflected these dislocations. It was nativistic, racist, anti-urban, and thoroughly middle class. Many of the eugenicists were Progressives and active in the Progressive reform movements. The extent to which the early eugenics movement reflected the tensions then pervading American society can be seen by the following thumbnail portrait of eugenicists provided by Mark Haller:

Those most strongly influenced by hereditarian doctrines were such persons as physicians, psychiatrists, social workers, members of state boards of charity, and others whose direct responsibility was with persons who, through crime or illness, became wards of the state for care and cure. Those least influenced were residents of settlement houses, sympathizers with labor organizations, and others who were primarily concerned with the general problems arising from industrialization and urbanization.²¹

At issue were deeply held views on race and class that were able to find expression in the eugenics movement and legitimacy behind the cloak of genetics. The movement brought together scientists who shared a political agenda with social reformers who sought to preserve the past and present in the name of the future.

Science

The scientists' link with the early movement was tenuous. Genetics, as an area of research, was new and many of the claims made by eugenicists (especially those dealing with the scope of problems associated with heredity) lacked a solid scientific foundation. But the opposition positions also lacked foundation. As genetic research progressed, the eugenicists' base crumbled. The legitimate scientists left the movement as the evidence disproving the eugenicists' political claims increased. But the important lesson here is the link between the scientists and political ideas. In his study on genetics in American society, Kenneth Ludmerer characterized this relationship as follows:

In acting upon the implications of these findings, the geneticists were motivated by their aforementioned social commitments. This is not to say that they allowed their presuppositions to color their scientific interpretation of the discoveries, which they generally did not, but to suggest that with different social commitments they might have drawn from the discoveries another set of social conclusions from those they in fact did draw.²²

Stephen Jay Gould made a related point in regard to science in general:

"Science, since people must do it, is a socially embedded activity."²³

Gould moved beyond Ludmerer and found a social influence on data gathering and interpretation:

I believe, first of all, that satan also dwells with God in the details. If the cultural influences upon science can be detected in the humdrum minutiae of a supposedly objective, almost automatic quantification, then the status of biological determinism as a social prejudice reflected by scientists in their own particular medium seems secure.²⁴

Gould argued that culture influences our understanding of facts: "facts are not pure and unsullied bits of information; culture also influences what we see and how we see it."²⁵ Two situations undercutting the ideal view of science may result from this observation. First, "some topics are invested with enormous social importance but blessed with very little reliable information."²⁶ This describes pre-1930's eugenics. But when the reformers succeed in invoking the cloak of science (even if an illusion), then the reformers obtain the powerful support of scientific legitimacy. Society then acts on inadequate information as if it were adequate and science becomes implicated in the actions. As a result, the priorities and views of science may become "a mirror of social movements. . . . This mirror reflects in good times and bad, in periods of belief in equality and in eras of rampant racism."²⁷

The second implication for "normal science" relates to the way scientists ask their questions. (This subtlety is missed by Ludmerer who portrays the work internal to science as somehow enclosed and sacred.) By this account, the questions may be asked "in such a

restricted way that any legitimate answer can only validate a social preference."²⁸ Galton's assumption that biological worth is seen in one's social position (success) illustrates this problem. The early American belief that individual traits, including intelligence, resulted from single genes provides an American example which had pernicious consequences for the American eugenics movement. Working upon this assumption led eugenicists to recommend policies aimed exclusively at reproduction.

Program

Following Galton, the American eugenicists' program divided along positive and negative eugenics. The positive program relied on education in an attempt to convince the "ideal" to marry out of social conscience. Positive eugenics, however, was secondary to the negative campaign.

Among the negative policies pursued, birth control proved to be the most benign, albeit one of the more controversial. Its advocates sought to bring contraception to the lower and working classes. These people, the eugenicists feared, propagated in disproportionately large numbers and produced weaker (eugenically speaking) offspring. The birth control strategy rested on two beliefs. First, the number of weak and sickly would be numerically reduced. Second, decreased numbers would in turn result in a better environment within which to raise the children which would improve the quality of the individual. (Clearly these reformers did not accept the extreme biological determinism pervading

the eugenics movement.) According to one historian, this policy divided the eugenicists.²⁹ At the time, the middle and upper classes (those whom eugenicists desired to reproduce in greatest number) practiced birth control and the eugenicists' feared that loosening the legal restrictions imposed on birth control methods would only extend this pattern or spread it to the better of the lower classes (those who shared the values of the "better stock"--and their genes--but lacked their money). Consequently, birth control became a secondary strategy.

Another strategy employed was sterilization. This, too, caused controversy, not in the least because of its ineffectiveness. In 1931, twenty-seven states had sterilization laws, but California alone had a history of widespread enforcement.³⁰ The scope of the problems eugenicists believed sterilization could address is illustrated in the following excerpts from a model sterilization law proposed in 1922 by Dr. Harry Laughlin, a leader of the movement's reactionary wing (but, nonetheless, prominent in the movement in general):

AN ACT to prevent the procreation of persons socially inadequate from defective inheritance, by authorizing and providing for the eugenical sterilization of certain potential parents carrying degenerate hereditary qualities. . . .

. . . (a) A socially inadequate person is one who by his or her own effort, regardless of etiology or prognosis, fails chronically in comparison with normal persons, to maintain himself or herself as a useful member of the organized social life of the state; provided that the term socially inadequate shall not be applied to any person whose expected exigencies of youth, old age, curable injuries, or temporary physical or mental illness. . . .

(b) the socially inadequate classes, regardless of etiology or prognosis, are the following: (1) Feeble-minded; (2) Insane, [sic] (including the psychopathic); (3) Criminalistic (including delinquent and wayward); (4) Epileptic; (5) Inebriate (including drug habitues); (6) Diseased (including the tuberculous, the syphilitic, the leprous, and others with chronic, infectious and

legally segrable [sic] diseases); (7) Blind (including those with seriously impaired vision); (8) Deaf (including the crippled); (10) Dependent (including orphans, ne'er-do-wells, the homeless, tramps and paupers).³¹

To be classified as a "potential parent of socially inadequate offspring", only one-quarter of your offspring needed to be "socially inadequate."³² As Walter Berns observed: this would "rid the world of . . . the likes of Beethoven, Mozart, Poe, and Napoleon."³³

More popular among eugenicists than sterilization laws was the reform of the immigration laws. Again, Harry Laughlin played a major role. He became advisor to the House Committee on Immigration and Naturalization. He also testified on behalf of biological considerations as an immigration standard. (Laughlin taught agricultural breeding at a Missouri normal school.³⁴) Laughlin articulated the fear of many that the new immigrants--from Southern Europe--would weaken the Nordic and Anglo-Saxon strain in America and accelerate the decline of the American stock. They based their fears on high "incidence of disease, illiteracy, poverty, and crime in immigrant neighborhoods."³⁵ In fact, they based it on racist fears.³⁶ The proportions among the various national origins within the American population were shifting and intermarriage was becoming increasingly common. The older stock--who apparently "forgot" that they too came from immigrant families, many of whom struggled to survive--refused to consider the effect of a sudden immersion into a new culture on the immigrants and translated these adjustments into genetic characteristics.

Decline: The 1930's

Among the reasons for the movement's decline was its style. Note again the vicious language employed: "The socially inadequate classes, regardless of etiology or prognosis."³⁷ "We are rapidly losing ground to the emotional foreigner who is biologically unlike us and therefore cannot understand that honesty, loyalty, and moral life are principles inherent in good minds."³⁸ In part because of this language, the movement failed to establish a democratic base. It worked as an elitist group lobbying state legislatures or serving as expert witnesses before Congressional committees. But its racist language and its elitist core contributed to its downfall.

By the 1930's, the movement had become small and less well accepted by the public and by scientists. Its nasty political agenda alienated its allies while developments within the science of genetics proved much of the eugenics' agenda wrong. But the democratic and genetic indictment of eugenics alone probably would not have been telling. The fatal blows were inflicted by both the Depression at home and Hitler abroad.

The depression removed from the capitalist system the image of destiny and inviolability assigned to it by the eugenicists. "Galtonian eugenics was a victim of unemployment."³⁹ The capitalist had failed, so how could they embody all that was good? As the economic system undercut the eugenics movement, their racist policies proved equally fatal as Hitler adopted racial standards and the American eugenicists

not only failed to distance themselves from his policies but endorsed many of them!⁴⁰

After achieving its greatest success, the Immigration Act of 1924, the eugenics movement slowly disintegrated. Its political positions on race and social status became irrelevant to the new political period ushered in by both the Depression and World War II. The movement faced the choice of extinction or fundamentally changing its approach, if not its substance.

Interlude: Margaret Sanger

Even during its darkest days, the eugenic idea influenced other reformers and reform movements. While these groups did not adopt eugenics as their cause, the eugenic idea informed their program and, as in the case of Margaret Sanger, became a major goal of their reforms. Sanger represents an interesting example of the Progressive-era reformer. She championed the cause of women, especially their right to freely choose birth control. Her major concern was political; she placed woman's problems into the larger context of social and political power relationships. But in addition, she expressed concern over future generations and the quality of "the race." This eugenic concern became inseparable from her political critique and remedy. Sanger's joining of these issues makes her an important figure in the history of birth control and in current debates over control of our reproductive practices.

Margaret Sanger's birth control crusade sought to repeal restrictive birth control laws to enable women to exercise freedom of choice over their reproduction. While her rhetoric portrayed the woman as a political and social victim, Sanger grounded her work on basic biological drives shared by all women. According to Sanger, the sex drive was at the heart of the woman's being. This drive transcended even income in importance to the woman.⁴¹ From this position, Sanger proceeded to reject the traditional economic reforms as inadequate (but important) and turned instead to birth control and negative eugenics.

In her analysis, Sanger linked together the industrial order, population control, motherhood, and the American Race.⁴² The demands of the industrial order required a population policy that denied women control over their reproductive practices. The industrialists and the nation-states required large populations to fulfill their tasks. Her indictment of population growth detailed such offensive consequences as: war, famine, unemployment, and child labor.⁴³ To achieve others' population goals, women were pressured into producing larger families than they wanted or could care for. One form of this coercion was the denial of information about their biology, information about birth control, and birth control itself. Sanger argued that given a choice, women would not reproduce so recklessly. Family size would coincide with economic and social conditions so as to ensure the best possible upbringing for each child. Birth control became an imperative need in this system because, despite the parents' desire to ensure the best conditions for their children, sex remained a powerful urge that was

denied only at the women's physical and psychological peril. Therefore, women, through the use of birth control, could respect this natural drive while also controlling their families' size. Birth control was more natural than abstinence, more moral than abortion, and better policy than no control.

Sanger believed that freeing women would also rebuild the race. In part she saw the race degenerating, but her primary belief was that the woman's potential had been underutilized. Through motherhood passes culture and learning. Free the mother from her chains and improve the conditions of childrearing and the result will be an improved person (both woman and child).

In her promotion of race, Sanger joined the eugenicists' ranks. She used race in two ways. One was her concern over "bad stock":

The lack of balance between the birth rate of the 'unfit' and the 'fit', admittedly [sic] the greatest present menace to civilization.⁴⁴

She focused on intelligence, which she believed was inherited, as the key standard separating the fit and unfit. She warned about "recruiting the next generation from the least intelligent and most unskilled classes in the community."⁴⁵ This became a real possibility given that "degenerate stocks . . . have more than the normal size of family."⁴⁶

Race also included a cultural dimension:

The cell plasm of these peoples [immigrants] are freighted with the potentialities of the best in the Old World civilization.⁴⁷

Consistent with Sanger's naturalistic bias, she placed culture within heredity. This is a typically eugenic position: assigning biological status to valued characteristics.

Sanger, however, added an environmental component to race. She decried the treatment of immigrants, especially their confinement to slums.⁴⁸ This treatment meant we failed to gain culturally from the diversity they added to the population; nor were they sufficiently exposed to American culture in order to become acculturated. This latter point admitted to an environmental role unthinkable to the hard liners among the eugenicists. The failure to socialize the immigrants into the dominant American culture (race) resulted in a hybrid culture (part old world, part American slum) which Sanger believed to be inferior. In sum, Sanger's conception of race was hereditary, but it also possessed an American soul:

If we are to develop in America a race with a racial soul, we must keep the birthrate within the scope of our ability to understand as well as to educate. We must not encourage reproduction beyond our capacity to assimilate our numbers so as to make the coming generation into such physically fit, mentally capable, socially alert individuals as are the ideals of democracy.⁴⁹

Hers was not a religious soul, but it encompassed more than a collection of genes defining the race.

To achieve a distinctly American race, Sanger believed the social system needed radical change. What political alternatives were open to her? She isolated three: Marxism, philanthropy and charity, and eugenics. She rejected the first two and provisionally accepted the third. Marxism failed on two grounds. First, in order to provide for

sufficient numbers of proletariat, Marxism, like its capitalist enemy, required a large worker population. Marxism's second failing was its propensity to blame others for the workers' failings. Sanger located the demand for overpopulation in the state, industry, and church, but she assigned responsibility for compliance to the worker:

When all is said and done, the workers who produce large families have themselves to blame for the hundreds of thousands of unemployed grasping for jobs, for the strike breakers, for the policemen who beat up and arrest strikers and for the soldiers who shoot strikers down.⁵⁰

Marxism failed to accept this and instead blamed the economic order for the workers' condition. Charity failed on simpler grounds. Sanger's goal was to prevent further degeneration of the race and to promote improvement. Charity did neither. At best, charity was emotional and altruistic: occasionally ameliorative, but never preventative.⁵¹

This left eugenics. On this point, Sanger offered a good critique of positive eugenics and proposed a modest negative program that could work in tandem with her birth control crusade. The essence of her objection to positive eugenics was its lack of realism. The positive program desired those with the best traits--usually defined as the socially successful--to propagate to improve the race. This argument, Sanger predicted, would "fall on deaf ears" because it would undercut a family's attempt to elevate its standard of living.⁵² Aside from the practical, she argued against it on principle. Raising a large family strained the psychological well-being of the wealthy mother just as it did the mother of the poor (although not as much!) and this was unacceptable. She objected to any policy premised on an increasing

population. Large families of all kinds--rich and poor alike--promoted war and famine.⁵³

After eliminating positive eugenics as wrong and dangerous (an ironic position in that positive eugenics is usually presented as eugenics at its most benign), she confronted the negative alternative. Her criticisms and modifications offer a preview of the post 1930's eugenics movement.

To Sanger, negative eugenics correctly identified the feeble-minded--among whom she linked the insane, epileptic, criminal, prostitute, pauper, and mentally defective--as a dangerous lot deserving attention. She endorsed sterilization, although she added the qualification that sterilization should only be allowed with a firm genetic basis and fair laws.⁵⁴ Sanger identified the marginally intelligent as especially worrisome. Their ability to be glib, good looking, and outwardly normal could deceive many and the cultural and intellectual consequences for the community were dire.⁵⁵ Sanger's conclusion was that these people should be either segregated or sterilized. She preferred, with qualification, sterilization.⁵⁶

The impact of controlling the marginally intelligent's reproduction would be more immediate than the positive eugenicists' program. However, she found this approach incomplete. Sanger faulted negative eugenics on two grounds. While eugenics recognized the biological dimension, it misunderstood the role of sex. Sanger believed sex to be more than biological: it was spiritual.⁵⁷ Programs simply aimed at marriage (positive eugenics) or the sex act (segregation) miss

the spiritual side of sex. Birth control filled the void. Because people other than married couples partake of sex⁵⁸ and all couples need to maintain a healthy sex life, her strategy was designed to allow for this, allow for family limitation, and bring these limiting practices to those who most need to limit their numbers: the less intelligent and mentally defective (often lumped by Sanger with the lower classes).

Sanger also criticized the reductionism inherent in eugenics thought. She believed that the causes of reckless birth extended to environmental causes. The most reckless lived in the poorest areas. Improve the environment, offer the necessary information and birth control equipment, and the families may act more responsibly and raise healthier children. The approach was carried on by Frederick Osborn⁵⁹ after the fall of the original eugenics crusade.

Despite her environmental qualifications, Sanger shared a naturalistic bias with eugenicists. She linked the human race with its animal past. This was the source of its strong instincts. The following excerpt, a quotation by Dr. Edward Kempf, is typical of the eugenicist's view of man in general:

Man arose from the ape and inherited his passions, which he can only refine but dare not attempt to castrate unless he would destroy the fountains of energy that maintain civilization and make life worth living and the world worth beautifying. . . . We do not have a problem that is to be solved by making repressive laws and executing them. Nothing will be more disastrous. Society must make life worth the living and the refining for the individual by conditioning him to love and to seek the love object in a manner that reflects a constructive effect upon his fellow-men and by giving him suitable opportunities. . . . The noblest and most difficult art of all is the raising of human thoroughbreds.⁶⁰

Sanger, working outside the eugenics movement, modernized its theory and made it more practical and adaptable to related reform efforts. She attacked the extreme threats to the race, but relied on voluntary action and instinct to achieve her overall goals. She recognized the role environmental practices have on heredity; she linked her eugenic goals to social and economic reform. From within the eugenics movement efforts began in the 1930's to redirect its program in the direction foreshadowed by Sanger's interlude within the eugenics hysteria. Frederick Osborn, Secretary of the American Eugenics Society, led this effort.

Frederick Osborn

Osborn's initial task was to free the eugenic idea from its past. To this end, he needed to distinguish eugenics as an idea from the practice of the earlier movement and to show the compatibility of eugenics with American ideals. Osborn's strategy emphasized voluntarism, democratic choices, and scientific (primarily medical) legitimacy. He sought to make eugenics as inconspicuous as possible. Rather than base his policy on the extremes--the feeble-minded or exceptional⁶¹--or rely on coercive legislative strategies, Osborn turned to the environment as a means of directing individual choices. He sought eugenic goals through what appeared to be non-eugenic means.

Osborn believed that sterilization of the feeble-minded provided socially beneficial results, but sterilization and the policy of positive eugenics which encourages strategic breeding affect only a

minute segment of the population. Those most important to eugenic concerns, the average and marginal, are left unaffected. Osborn theorized that only by addressing average characteristics could eugenics succeed. This approach expanded eugenic's scope while lowering its public profile.

The new eugenics, like the old, was concerned with realizing and promoting "inborn potentialities." It "[sought] to change the distribution of births in a way which [would] improve the average hereditary potential of human beings."⁶² Unlike the old, however, this involved a shift from targeting groups to targeting individuals. Leavening the population was the goal but the strategy addressed the individual. On this point Osborn wrote: "There can be little doubt that today natural selection operates mainly through the differential fertility of individual couples and it is this kind of selection with which the Eugenic Hypothesis is concerned."⁶³ Rather than employing means outside of the individual's life, this new approach sought to change values: in particular those attached to the home and children.⁶⁴ Osborn maintained the eugenicists' nationalist and social goals, but they no longer comprised the central strategy nor were they used as a means of pressuring individuals to conform.

The new strategy professed a political realism. Knowing the damage done to the eugenic image by sterilization laws and racist language, Osborn searched for means that were feasible and consistent with American ideals and values. He settled on manipulation of the

social environment. This revived the balance between heredity and environment raised in Sanger's work:

Eugenics seeks also to improve physical qualities. The more serious physical incapacities are the responsibility of the medical profession and public health officers. . . . At the same time, eugenics is particularly interested in the psychological traits of intelligence and personality because these traits are of major importance to civilization. If there is justification for a broad eugenics movement, it is chiefly in the part which heredity may play in fixing limits to the psychological development of individuals.⁶⁵

But within the parameters fixed by heredity, the environment plays a major role affecting future generations. This position is not surprising since Darwin defined "fitness" as the closeness of fit to particular environmental conditions. Osborn returned to sound evolutionary theory.

The environmental factors identified by Osborn spanned a wide spectrum of daily life. The birth/death ratio was of particular concern. Death played an important role in evolutionary theories because death selected between the fit and unfit. Other factors isolated by Osborn included living and public health conditions, childhood and family recreation, family life, and education.

The nature of the American political system was one reason Osborn chose the environment as his strategic lever. He sought to make eugenic considerations a part of an individual's outlook toward life: to become a way of life. He wrote:

In a democratic country there are great opportunities for developing such conditions of society that the processes of eugenic selection shall be voluntary and natural.⁶⁶

This reversed the elitism of earlier eugenicists. It also provided a means to achieve eugenic ends subversively; it shielded the individual from directly confronting the eugenic choice. In this approach, Osborn foreshadowed the modern policy analyst who promotes public ends through indirect market means.

The change Osborn desired was one where the social environment made the choices or provided the stimuli needed to act along eugenic lines.⁶⁷ Implicit in this argument are some standards as to eugenically desirable traits. Despite a significant technocratic moment to Osborn's thought, he did not look solely to nature for the definitive characteristics. He hoped they would develop from indigenous public opinion. "Local aspirations" defined what the ideal traits were and "the eugenicist [sic] would be satisfied so long as public opinion included a eugenic purpose as part of any environment to which it aspired."⁶⁸

How this process would work is exemplified by Osborn's discussion of family size. If the environment lacked the aspects that would encourage an interest in large families, then those who follow environmental stimuli would pursue other goals. By changing the environment, one could create the situation where those most responsive to its best influences would have large families and those least responsive would have small ones. The result would find each new generation increasing the number of people who fit the environment well: Darwin's definition of fitness. "The response would be voluntary, a selection drawn out by the environment itself."⁶⁹

While Osborn declined the responsibility of choosing (or assigning) the traits, he maintained standards against which he could evaluate the results. He wisely employed an evaluative system that did not (with one exception) depend upon science's ability to identify those possessing desirable or undesirable traits. He thus avoided a potential trap resulting from scientific advances. For example, as genetic research progresses, more genetic diseases can be identified and treated. By not defining eugenic goals in terms of particular traits or defects, the eugenic program need not be constantly redefined or revised to match changes in genetic knowledge. Further, this approach allowed Osborn to define its goals using terms and categories relevant to the populace's everyday life. Where the goal is control over the body, as is true of the eugenicist, leaving open the definition of the sound body is a better approach than specifying in detail what constitutes the body. In sum, this allowed for shifting standards. It defined eugenics in terms of the phenotype rather than the genotype. This is necessary given the role of the environment and a recognition of ambiguity or uncertainty in genetic knowledge.

Osborn's standards cherished conformity. This is in marked contrast to Sanger's emphasis on diversity and genius. Osborn's community, from which the eugenic ideals emerged, consisted of the upwardly mobile middle class.⁷⁰ His standards and ideals included: above average physique and health, sociability, love of children, stable marriage, and the ethic of sacrifice.⁷¹ Families should be supportive, together, and well-adjusted.⁷² They should also be energetic, looking

for good and interesting work, and future-oriented. In other words, Osborn's ideal environment would promote family-oriented couples who adopt the industrial work-ethic and would encourage them to produce more children than the less future-oriented and those less interested in family values. These are reasonable standards: mainstream, if nothing else. They are more consonant with American values than Laughlin's categories as defined in his sterilization law, detailed above.

As stated above, however, an exception to this culturally-based presentation existed. Osborn recognized the role of genetics. The characteristics of the environmental and genetic dimensions can be seen in the following discussion of an individual's social value:

"Intelligence" as measured by psychological tests certainly has a part in determining social value. The tests used are objective, they can be applied to large groups of people, and psychologists have had enough experience in their use to recognize many of the limitations within which they must be interpreted. . . . Tests of genetic fitness, such as may be made by studies of ancestry and near kin, are especially important for determining not only defective stocks, but those of superior ability. They are less applicable to large groups of peoples' qualities directly and objectively. Another, and indirect method, is to measure the accomplishment of people in their daily lives. For this purpose, criteria must be used which will reach the whole population.⁷³

Osborn relied on intelligence to evaluate social characteristics. His comparisons among regions, occupations, and races were based on IQ scores. These comparisons refuted the earlier eugenic theories which ranked social groups according to the social prejudices of the eugenicists. Genetic considerations, on the other hand, could only be seen at the individual level. To this end, Osborn relied on heritage as well as the use of genetic techniques, such as genetic counseling and

screening.⁷⁴ To overcome the onus of eugenics' past, he needed to make intelligence a neutral and partially hidden concept. This he did by relegating it to an evaluative role (evaluating eugenic progress) while keeping it out of an explicit policy role. (He did not use IQ as a social policy goal.) Genetics surfaced only indirectly through its scientific and medical practice.

Osborn's Themes and Agenda

Osborn pursued typically eugenic themes. He embraced a naturalistic argument and embedded it deeply into the social fabric. He linked civilization's changes with the workings of the selection process. The crucial change being increasing control over death. Death serves as "the purifier of the higher qualities of the race."⁷⁵ Osborn explained:

Man's rise from apelike form to Homo sapiens was the result of eugenic selection. The preponderant factor in the selection was the ability to escape an early death. Even in the earliest and hardest days death was not always a blind accident. The man with the best natural immunities was the most likely to survive disease. . . . Many of man's finest qualities arose because those who cared for their children saw them more often survive, and those who could best co-operate often saved their families where others failed.⁷⁶

Osborn drew a sharp distinction with other eugenic theories. He did not accept the argument that the race was declining. "There is no clear evidence that hereditary defects are on the increase."⁷⁷ Rather, he sought to continue the advancement of the race. He sought perfection. He worked within the view that nature, in its normal state, provided for the species' slow and steady advance.⁷⁸ Once death is removed as the evolutionary mechanism, a substitute must be found in order to maintain

evolutionary progress. He chose birth. Thus did Osborn introduce his major policy concern: population policies and the birth/death ratio. Low birthrates among the more advantaged join with the declining death rate to create a eugenic problem. Where previously the unfit died off before they could reproduce and the fit "had as many children as nature brought them",⁷⁹ now the fit (not nature) determined the size of their families and the unfit contributed more of their own.

Earlier, Sanger had addressed this issue. After rejecting the belief that the advantaged (also thought of as the "fit") would voluntarily increase their numbers, she recommended extending birth control to the "unfit." Osborn accepted the second point, but only as a part of his answer. A means had to be found to encourage the best to reproduce in larger numbers. With this in mind, Osborn desired that eugenics be linked to population policies--but only as a secondary consideration--to ensure that these factors were included.

Osborn could pursue this passive eugenic approach only after clearing away the taint of racism held over from the earlier eugenic agenda. To this end, he undertook an extensive analysis of the relative intelligence among different groupings (e.g., race, wealth, occupation, urban/rural). He concluded that no significant differences existed among the groups:

Policies which would restrict births in some large groups and encourage them in other large groups may be defended on the ground that a certain culture will thereby be strengthened. . . . In some cases such policies might appear wise or necessary. But they should not be proposed on biological grounds.⁸⁰

Osborn's conclusion was a break of major importance. This broke the eugenics movement from the logic behind the 1924 immigration reform which targeted particular groups and instead substituted policies targeted at the entire population. The eugenicist could now address substantive issues believed to contribute to genetic growth (or decline). If the new policies worked, resulting in the population acting eugenically, the population would divide naturally along eugenic lines: the best people increasing their number while the weaker declined. Once race, ethnic origin, or class were eliminated as indicators of genetic worth, and genetic defects (or virtues) were seen as randomly spread throughout the population (what the geneticists taught), then the best strategy was one focused on reproductive practices.

Osborn identified six aspects of a normal routine whose impact on family life offered eugenicists opportunities to foster eugenic values. These included: leisure activities, local nursing (especially in rural areas), education, medicine, public opinion, and social and political programs (especially those associated with the welfare state). A seventh consideration was the ubiquitous sterilization. Four of these directly effected environmental changes. Three, sterilization, nursing, and medicine, recognized the genetic component and looked to science and technique as necessary eugenic tools.

A brief review of the seven will help illustrate Osborn's thinking. Leisure activities⁸¹--by which Osborn meant non-commercial recreation--served to teach co-operation, to integrate the sexes, and to

provide for physical and emotional development. Family recreation must be encouraged in order to promote the idea and unity of the family. It would make the home a happy milieu.

Through education Osborn hoped to promote a sound body and physique, a balanced personality, and normal attitudes toward family life. These issues were not to play a role secondary to IQ or growth in intellectual matters. Eugenics would be promoted through teaching an elementary knowledge of genetics, heredity, and environment (especially psychology) as well as population studies which would illustrate the social and biological implications of changes in the birth rate. Education became important to Osborn for two reasons. First was its role in "inculcat[ing] the ideal of parenthood as fundamental in a well-rounded philosophy of life."⁸² Education was also enlisted into the process of weaving eugenic ideals into public opinion. Educating the public on the nature/nurture issue and on the biological (read eugenic) effect of population policy provided information which might eventually influence some families' decisions on whether or not to use birth control or have a large family. It might also influence those who offer advice on the subject. But, and this is a typical Osborn theme, it would introduce eugenic considerations indirectly.

Any political strategy based on indirection employs public opinion. Osborn hoped to influence public opinion as a means to address the marginal case--those not so badly off as to require sterilization or segregation, rather those first on relief, least educated and skilled, and reproductively most prolific. A properly formed public opinion

would encourage these people to employ birth control measures (and may, as the values become assimilated into the culture, allow others to impose contraception on the most defective).

Implementing these ideas, however, requires some explicitly eugenic actions. Not all defectives are easily identifiable as such-- and this is especially true of the marginals. Therefore, some means of identification is helpful. Many phenotypically healthy carry defective genes and these people must be identified so that proper action can be taken. This need is particularly acute given Osborn's rejection of surrogate measures such as race, income, and class. For example, a couple where one has type A positive blood and the mate type A negative may wish to limit the number of children they have. On the other hand, should they separate and remarry, this conflict may not occur and the new couples may possess those characteristics that the eugenicists promote and now they should have large families. Knowing the individuals' status allows for the eugenically preferred actions under all circumstances. Osborn's ideal was that those raised in the environment of a eugenically informed public opinion would take these steps voluntarily and routinely.

Finally, Osborn applauded the economic and social advances made by the New Deal and developing welfare state. Any changes that improved the home environment were desirable. Housing improvement, slum clearance, extended social services, medical and child care services that relieved child-bearing burdens were all important advances in that they improved the image and conditions of childrearing. The scope of

the services also provided institutional opportunities for targeting the marginals and promoting birth control among the less fit.

The remaining areas for eugenic influence, medicine and nursing, continued the themes found in the role of public opinion and social services. Both medicine and nursing offered a means of identifying those with eugenically undesirable traits. Most of Osborn's environmental recommendations fall within the category of positive eugenics. He relegated negative eugenics to the realm of medicine:

If . . . we have urged a new and heavy responsibility on the medical profession, it is because no other course seems possible. Only the doctor carries that ultimate public confidence which is necessary if public and patient alike are to follow advice on matters of heredity. Only the doctor sees in intimate detail the interplay of environment and heredity in which disease and defect may develop, and therefore he alone is qualified to diagnose and interpret the results.⁸³

Not only does Osborn seek the legitimacy of the medical community, but he relegated diseugenic hereditary characteristics to the category of disease. In order to allow the established practices of medicine to serve eugenic ends, Osborn needed to bring within the doctors' frame of reference the eugenic implications of birthrate changes and stress the socially deleterious effects of genetic defects.

Nursing referred to nurses visiting communities. Based on their knowledge of the community, they could identify who should or should not have large families. They could also act as an advisor on whether or not a family should use birth control. Given this strategic position, they became an obvious group for Osborn to target. Nurses had an added advantage:

In the hands of this group, eugenics seemed to lose its theoretical and controversial aspects and to be something merely requiring the application of experienced and practical good sense.⁸⁴

Once again, professionalism aided the eugenic cause. Osborn also hinted at a motivation that resembled Galton's scientific charity:

At present, the eugenic opportunities of nurses are restricted by the time taken in caring for inadequates, which seems so hopeless and fruitless a task.⁸⁵

After assigning to medicine the eugenically interesting genetic defects, Osborn now implies that medicine should direct its resources only to the medically feasible. The individual, elevated to the center of attention, now loses its individuality.

In regard to sterilization, Osborn offered little information. He made reference to it as one means, along with segregation and birth control, to control defectives.⁸⁶ He also noted that voluntary sterilization was increasing which offered possibilities for eugenic goals.⁸⁷ Aside from these observations, in his theoretical works he minimized this controversial practice.

In his later works, Osborn made more explicit the dual nature of his strategy.⁸⁸ The first part, generally referring to the issues previously discussed, was environmental. The second centered on the scientific or clinical approach. His early works made reference to these concerns; he had never abandoned sterilization or birth control for the disadvantaged. By 1968, however, his interest in science as a eugenic tool had grown, due, in large part, to advances in genetics. Genetic research on mutations and hidden defects focused attention on deeper traits than could be measured by appearances and success in life.

This clinical strategy also exemplified the technocratic and scientific side to eugenics. Osborn used science as one of the two pillars (the other being democracy) upon which he attempted to rebuild eugenics. Each tied directly into the American political culture. One historically situated and the other growing in importance.

In brief, the clinical strategy sought to identify and then reduce defects. To this end, Osborn advocated the use of heredity clinics, "the first eugenic proposals that have been adopted in a practical form and accepted by the public."⁸⁹ He promoted institutional care; though this was not a eugenically motivated activity, it served eugenic ends in its segregation of defectives. Osborn placed birth control into this strategy, with special emphasis on those with little education and low economic status.

The tenor of Osborn's writing was one of conciliation and moderation. The excesses of his predecessors' prevented anything else. Clearly, Osborn desired that eugenic goals reflect community values and he hoped that those views would exclude as undesirable the genetically defective. He believed that the ideal would be achieved through voluntary and independent action. The eugenics program was to be a biproduct of routine actions.

There exists, however, an opening for a policy less benign than Osborn offered. Despite his moderation, the darker side of eugenics lurks underneath his standards. Especially suspect are genetic and intelligence considerations. How are these to be identified? The subtlety of Osborn's system is maintained by treating each case

individually rather than as a broader campaign defined by explicit characteristics of rightness in the manner of Laughlin's extreme program. But even though they are not explicit, the standards of rightness exist at the undebated level of social values.

Osborn's reliance on social characteristics worked under the belief that social characteristics carried with them genetic traits, even if the characteristics were not genetically caused. This view, when pushed to its logical conclusions, raises disturbing policy questions which Garrett Hardin illustrates.⁹⁰ Reviewing his analysis illustrates how eugenic beliefs can influence policy analysis.

To begin, assume an economically stable population. Those who live in poverty can "trace their lineage . . . through many generations of impoverished ancestors."⁹¹ Living under these conditions is normally believed to cause hardships for the individuals. Hardin offered a different twist: "It takes positive attributes to survive in poverty. . . . The type of genetic toughness needed to survive in abject poverty generations after generations is undoubtedly less common among American suburbanites than it is among poor Indians [from Calcutta]."⁹² Thus the first policy consideration is the point of reference: "What kind of world do we want to create?"⁹³ If you first define how civilization should be, then this choice will bring with it particular genetic characteristics. However, if you change the environment, you bring into the new environment people with traits best suited to the old.

It follows that if you choose the suburban life, you are not promoting the genetic traits best suited to poverty. The fact that the environment and genetic makeup grow to complement one another has profound influences on policy and economic reform. Programs that rapidly raise the level of the economically depressed to a position of material comfort place upon these people the burden of living in the civilized world with genetic characteristics developed in the poverty stricken environment (this carrying of maladjusted genes is part of what is called the genetic load⁹⁴):

If we were to succeed in bringing instant cultural prosperity to a population that was genetically adapted to poverty, by that very act we would create a genetic load on the otherwise fortunate nouveaux riches. If our reform stopped at this point and if, following the fashion of the world before the welfare state, we permitted natural selection to take its course, the genetic load would be rapidly reduced. But those who work for economic reform also support the welfare state.⁹⁵

Hardin moved from this to portray the consequences of adopting unmodified welfare state policies: creating rapid economic prosperity among those poorly adapted to civilization. The eugenicist's concern centers on whether or not the newly reformed will "tolerate the necessity--or even the thought of--selective genetic change? Or will they, perceiving the lack of fit between themselves and the corridors of wealth . . . seek to pull down the structure of civilization, for their comfort's sake?"⁹⁶ If we accept the eugenic analysis, we should do nothing dramatic to adjust gross poverty levels. Consistent with the eugenic spirit, Hardin recommended a policy of economic advancement coupled with one of population control, shifting the issue from economic

to population policy. Both the policy of benign neglect and population control are preferred by eugenicists to the simple redistributive policies because the former policies take seriously the population question and the necessity of action only after learning how the changes will effect genetic characteristics.

Hardin's analysis exemplified several characteristics of the new eugenics. He showed that policy reduced to biological considerations produced changes of kind in public policy (from economic to population policy). His policy also discriminated among a large group of people by their genes. He believed that some would be unable to adjust to the demands of civilized society and he justified this claim by reference to biological characteristics. Hardin also brought to the surface a social bias in this approach. Along with Osborn, his standards were based upon the American middle class, dominated by whites. One must ask whether his assessment of the genes was biological or sociological.

Hardin's analysis is not completely consistent with Osborn's theories. Osborn found advantages in the welfare state because it created greater opportunity for those underprivileged and allowed for the genetically strong among the poor to rise up and escape their imprisonment. (This implies that the differences between Osborn and Hardin may reside in different scientific analysis: the relationship of genetics to poverty.) Where the two do agree is on the importance of population policy and the relevance of genetics to public policy. They each see the subtle relationship between environmental changes and genetic traits, but disagree on how best to effect environmental change.

The disagreement illustrates the differences between moderate eugenic analysis (Osborn) and a new hardline analysis (Hardin), a potential inherent in Osborn's approach.

In sum, Osborn worked to place eugenicists into the mainstream of American society. He developed four major areas of attack: an improved social environment (welfare state); effective methods of birth control; a "psychological and cultural atmosphere [which] would tend to encourage births among the parents most responsive to the possibilities of their environment and diminish births among the least responsive;"⁹⁷ and he enlisted the medical community to identify and reduce genetic defects (screening, counseling, and medicine). All of these depended upon voluntary compliance achieved through an eugenically informed public opinion.

Osborn followed the logic begun by Galton. Civilization had interfered with natural selection. Social changes have genetic implications and society has an obligation to the future of the human race to take these consequences into consideration. The human race will only continue to grow (the alternative being degeneration, not stagnation) if our genes are well suited to our environment and this requires selection. Therefore, these eugenic concerns must be a part of our political and scientific agendas.

Osborn leaves us with one final, sobering thought. It exemplifies his entire approach:

Eugenic goals are most likely to be attained under a name other than eugenics.⁹⁸

Hermann J. Muller

Osborn's prediction of eugenics practiced through other means finds partial fulfillment in genetics. In part, this is coincidence. Eugenics and genetics share a concern over the public's genetic health. The scientists' recommendations and research plans may cover ground similar to the eugenicist but without his overarching plan and strategic interests. But in other cases it is not coincidental. Hermann J. Muller exemplified the latter perspective. He provided the genetic grounding to justify eugenics.

Muller was no minor character among geneticists. In 1946, he won the Nobel Prize in medicine and physiology for his work on radiation and genetic mutations. His writings on our "load of mutations" was well respected.

Muller was also a politically interested scientist. In the 1920's and 1930's he professed socialist leanings. Between 1933-1937 he was senior geneticist at the Soviet Academy of Science in Moscow and Leningrad. In 1937 he went to Spain as a volunteer in the Spanish Civil War and thus was out of Moscow when Lysenko purged the ranks of Soviet geneticists (including some of Muller's close friends and colleagues). After that, Muller moved away from his support for the Soviet Union and socialism. His later writings displayed occasional cold war rhetoric but generally focused on such scientific issues as radiation's long term impact on the race's genetic composition. Relating his work in genetics to eugenics was a natural leap for one as politically interested as he.

As a geneticist, Muller worked on Drosophila. This is the research with which he achieved his awards. He used, however, many of the genetic findings from his Drosophila work when he wrote on human genetics. As a matter of fairness to Muller and to the field of human genetics, it must be noted that he was not a specialist in it. The following relies primarily upon his writing on human genetics and on eugenics, which he wrote for a professional audience, but the lay as well. The latter is best seen in his eugenic treatise, Out of the Night: A Biologist's View of the Future⁹⁹. Because his scientific authority (and awards) derived from his Drosophila work, it is a little unfair to present Muller simply as seen in this body of work. The purpose of the following section, however, is not to present his genetic thought, but rather to state the eugenic thinking of this geneticist.

Muller was a Darwinian. Evolutionary thought informed his writings. There existed, however, some sloppiness in his thought, especially in his popular works. Occasionally, he appeared to lapse into the non-Darwinian rhetoric of progressive evolution:

It [evolution] should lend us support in our struggle for a freer world, for it shows how the most essential properties of living things have led to their perpetual reaching out, self-transformation, and, for some of them, progression, and conquest of the rest of nature, until from a slimy scum they have stood erect, become aware of themselves, evolved social feelings and moral principles, and striven toward the stars. It shows that this great process is still at work and that we can carry it further.¹⁰⁰

Muller's argument is not so much incorrect as misleading. Darwin did not define evolution in terms of ranking traits one against the other. Rather, improvement was defined as against the environment, by how well

a trait helped one live under certain environmental conditions. Thus degeneration should be seen as a less efficient fit to the environment, but not as a regression. Evolution develops through selection among blind variations rather than a linear progression.

The importance of natural selection theory to Muller's work warrants a brief summary of his views on the process. This also will help tighten the sloppy reasoning he employed in his "political" work. To Muller, natural selection (Darwin's contribution to evolutionary thought) meant "heritable variation in different directions, . . . followed by differential survival and multiplication of the variants."¹⁰¹ Variation is an important part of the process. Survival alone is not the key but survival by selection is. Muller joined together Darwin and Malthus in arguing that a "struggle for existence" takes place due to "differential multiplication" (some multiply, others do not) within a finite space. The finite space creates the necessity for "selective elimination" of those who, if no selection existed, would stand in the way of the best. A relaxation of the selection process results in a decay due to the fact that bad mutations out-number good mutations. (Decay does not mean regression of the species, but may mean a vulnerability eventually leading to extinction.) Eugenacists relied upon Darwin's theories, but Darwin himself was unable to determine what mechanism provided the necessary variation.¹⁰² This forced the eugenacists to look for indirect means to achieve their goals since the answer to the evolutionary process eluded them. Genetics answered this question of heredity's mechanism: genes and mutations. Finally,

mutations provide the means through which the necessary variation is achieved. In nature, mutations occur constantly and when the mutations produce a variation that better fits the environment, it is selected for, while the remaining are selected against. In this regard, mutations are necessary because diversity is essential to selection.

Muller turned to eugenics for reasons similar to Galton and his followers. Civilization interfered with the process of natural selection. Despite the hopes of some that the social struggle was synonymous with the struggle for existence, Muller concluded that "it now appears that the social struggle under our modern civilization does not lend [itself] to the reproductive survival of the germ plasm most useful to the species."¹⁰³ Improvements in such things as medicine and living conditions allow many to reproduce who otherwise "would have been genetically proscribed."¹⁰⁴ Civilization's interference in the selection process necessitates a corrective reaction. That is Muller's understanding of eugenics' role: "the conscious social direction of human biological evolution."¹⁰⁵ In his earlier eugenic thought, capitalism was the major villain. He focused on two aspects of the capitalist system. One was the extent to which economic inequality masked an individual's true worth. Echoing Osborn, Muller argued that a dominant class could hide their weak offspring or that the financial and psychological costs of pregnancy may prevent some of the genetically best endowed (but financially poor) from reproducing. To Muller, this illustrated how the distribution of economic rewards could hide the distribution of genetic value. Muller placed a high value on ensuring

that all with "the more valuable genes" reproduced in increasing numbers while the genetically inferior were limited.¹⁰⁶

The economy was also faulted for creating an artificial view of man. According to Muller (the socialist), man is naturally "a hunting animal and he hunts in packs."¹⁰⁷ Man is goal oriented and social; the artificial economy made man individualistic and contentious. Rather than joining into fairly large social groups, economic man joins smaller conflicting groups (e.g., race and religion) that create dissatisfaction. Promoting a eugenic effort aimed at directing evolution within this system would be difficult. Eugenics would require co-operation rather than conflict, and sacrifice would have to be a social rather than a private (for self or family) concept.

Muller the scientist also outlined threats to evolution. Most of his eugenic recommendations follow from this aspect of his critique. The selection process should select against those mutations harmful to the individual's survival. But even when it works correctly, each individual will carry four to eight mutant genes--their genetic load--which will be slightly detrimental.¹⁰⁸ If all works properly, these particular mutations should slowly work their way out of the system as new ones take their place. Civilization's advances affect the process at this point. By allowing those to reproduce who otherwise would have died (or not reproduced), the genetic load is continued and even extended. It is extended because new mutations occur and will be added to those that should already have been eliminated. Compounding the problem are new mutations artificially created by civilized life.

Most of these mutant genes are recessive (in a heterozygous state they do not determine the characteristics). But Muller contended that this does not mean they are harmless. Most are "effectively dominant" in that "most of their total damaging effect on the population is exerted through their action while in heterozygous condition."¹⁰⁹ Their effect accumulates within the population, diluting the gene pool. This "effective domination," combined with the effect of medicine and other of civilization's advances, makes the genetic load of interest to eugenics. Three strategies are available to control this load: avoid creating new mutations, promote the disproportional birth of those with the best genetic qualities (and likewise limit the reproduction of the others), or design our own genetic components.

Preventing artificially induced mutations in an industrial world is not an easy task. Muller studied radiation's effect and warned against extensive exposure to it. Even though its demonstrable effects are negligible, the accumulated effect over several generations combined with a natural mutational load would serve to increase our genetic load. And "we already have more than enough for comfort."¹¹⁰ When we add the relatively recently discovered threat from chemicals, the breadth of this attack on our genes becomes apparent. Further, both radiation and chemicals are central elements of our economy and defense strategies. This fact alone makes significant alterations in our relationship with these "threats" unlikely. Thus the first strategy may be both unwise and impractical.

The remaining two alternatives depend upon science.

Civilization in its current form is the source of our weaknesses.

Natural selection provides the standard against which we should judge our current state and science provides the means to this end. Muller wrote:

For in this phase man, and man alone, is acquiring the eyes of science wherewith to see the structure of nature and to guide his inventive hands towards the intelligent control both of the bit of cosmos immediately encompassing him and to that within himself.¹¹¹

Not only does science provide the tools through which we can consciously direct our evolution, but science also is the guiding philosophy:

But the time is coming when the true literary man cannot afford to remain aloof from the thought and knowledge of this age [evolutionary theory], else he will be unable to write of the real world in which men of modern outlook think, dwell, and have their being. He will develop into an acrobat amusing the ignorant.¹¹²

Ironically, Muller argued that our only hope of overcoming civilization's intrusions is through the great creation of civilization: science! The petty feuding and repressions of our economic system must yield to the authority of science's commands. As we see the natural truth through science, so must we act. But the relationship between science and nature is more complex. Muller saw nature as an object as well as Truth. Science can remake nature; science will improve the human condition beyond any hope offered by nature. "Nature in general must be reconstructed by us for ourselves, on an ever grandeur scale."¹¹³

Use of our scientific knowledge to improve our life underlies Muller's thought. We organize our society based on what we know to be

natural; we will reproduce based on science's evaluation of our contribution to the future. Muller embraced positive eugenics.

Science also informed Muller's rejection of negative eugenics. This approach sought to eliminate (or decrease) bad genes, but Muller argued that mutations make this impossible. Traditional sterilization programs cannot work against recessive genes. Against this caveat, Muller outlined a modest negative program. By genetically identifying the major carriers of defective genes, one could attack the defectives with a higher probability of success than if the program was aimed at the entire population. Even though defective genes remain, the most genetically dangerous cases can be controlled. Once we know those with a high proportion of mutant genes, we can reduce the level of mutations by obtaining the individuals' abstention from reproduction. This carries with it two problems. One is the definition of a bad gene. Muller admitted that this depended upon one's point of view.¹¹⁴ The other is when good genes are present along with the bad. Since most people are carriers of defective genes, this becomes a serious problem. Consequently, Muller concluded that rather than relying on eliminating defectives, we should concentrate on promoting admirable qualities.

This strategy first needed social reform to free the best to surface and flourish. At this point he followed Osborn's social theories. Next, however, Muller broke from Osborn and advocated planned reproduction. The demands of evolution, not love, must dictate reproduction. Aside from concern for economic equality and improvement of the conditions for raising children, Muller proposed to regain the

social nature of man previously stripped away by the economic system. Eugenics depends upon a social sense which would re-enforce eugenic activity: it needed a context whereby it was possible to act for the good of the general population. "Thus, socially as well as individually, must ends tend to become means, and means ends."¹¹⁵ This is similar to Osborn's eugenic dimension to society but Muller pushed the practice far beyond Osborn's work. Muller's strategy attacked the genetic load with a dual pronged weapon. He coupled the "ameliorative techniques, such as medicine, with a rationally directed guidance of reproduction."¹¹⁶ This latter is included "as a necessary complement to medicine, and to the other practices of civilization, if they are not to defeat their own purposes."¹¹⁷ Muller did not leave the defectives to suffer, but at the same time he sought assurances against the care of defectives becoming a means to their reproduction.

Muller's third alternative was the most daring and most exploitive of scientific research. Here, Muller argued for planned reproduction irrespective of marriage. The best men and women should be sought out and joined, but through the use of artificial insemination and egg transplants, this need not cause an undue intrusion into their lives.¹¹⁸ The genetic fix was in. Muller recognized this plan's effect on social sensibilities:

Only social inertia and popular ignorance now hold us back from putting into effect (at least in a limited and experimental way) such a severance of the function of reproduction from the personal love-life of the individual.¹¹⁹

This illustrates the pre-emptive role of science. Social conventions must adapt to "natural" needs. Love, "a matter of imperative emotion", does not by itself serve reproductive needs well. In fact, it "degrades the germ plasm of future generations." But if you "unyoke the two, sunder the fetters that from time immemorial have made them so nearly inseparable,"¹²⁰ then you can maintain the bond of love and allow the race to develop rationally and free of civilization's perverting influences.

Muller brought the genetic issue to the surface. He campaigned to bring direction to the use of the new genetic techniques rather than allow them to become a part of the unplanned, irresponsible health care system. Echoing Osborn's claim that eugenics seeks to release innate potential, Muller championed a population possessing "the innate quality of such men as Lenin, Newton, Leonardo, Pasteur, . . . or even to possess their varied faculties combined."¹²¹ Unlike Osborn, Muller promoted diversity, in the form of greatness, in his population, although his standards paralleled Osborn's.

Had we adopted his plan (and assuming it worked), mutations, while continuing to exist, would be in balance (at a tolerably low level) and no longer be sustained by civilization's blind medical practice. Furthermore, positive traits would be of higher quality and in greater numbers than they would have been without human intervention. In sum, Muller wanted to bypass natural selection based upon the belief that man can do better.¹²²

Muller worked within Osborn's environmental strategy but placed greater emphasis on genetic considerations. He spoke with the authority of the geneticist, expecting all to see the urgency of his message because of its scientific foundation. His work, however, leaves us questioning Leo Szilard's dictum¹²³ that a scientist and politician speak with different purposes: one truthfully, the other committed.

Conclusion

The new eugenics broke free from the racial and class based excesses of its youthful practice. It accomplished this by moving away from defending the "old guard" and instead integrated itself into the mainstream of society, sharing the public's aspirations. No longer elitist in tone or practice, eugenics encased itself in democratic values and practices. It became thoroughly middle class.

The extent to which racist or classist charges can still be levelled against eugenics, they reflect racism within the society. Osborn attempted empirically to disprove the racist conclusions of his predecessors. He displayed, however, an upwardly mobile middle class bias which, in his time, included a white bias. At the risk of splitting hairs, Gould's argument of scientists reflecting their cultural context better describes current racial or class biases within the eugenics movement than do comparisons to the earlier eugenicists' prejudices.

Along with integrating themselves into daily life, the eugenicists sought to influence the medical community (defined to

include genetic science). By becoming only a secondary part of this highly respected profession, eugenicists hoped to find an effective means to implement their agenda and a source to lend new legitimacy to their issues. This is the side of modern eugenics that rightly has received attention.¹²⁴ The movements into the mainstream of society and into the scientific community represent the two tools or strategies of modern eugenics. Confronted with apparent genetic degeneration or threats to future evolutionary development, eugenicists looked to either environmental manipulation, genetic intervention (either through regulating procreation or direct genetic intervention), or a combination of the two. Of course, other concerns may motivate the same actions. This dual purpose is something Osborn hoped to exploit; it also makes isolating eugenics difficult.

This presents the observer with a dilemma. The issue confronting the contemporary student of eugenics is to decipher whether or not the eugenics movement has moved so far away from explicit action that events, even though they may produce eugenic results, cannot legitimately be classified as eugenic. Another way of stating this draws a parallel to the courts' efforts to deal with segregation. They have had to determine whether conditions which produce segregated results (de facto segregation), but are not the result of official policy or acquiescence (de jure segregation), should be considered segregation within the law.¹²⁵ In the case of modern eugenics, the concern is over practices that have eugenically desirable results. Osborn's politics should move eugenics from de jure to de facto

practices. It now becomes necessary to take the theories presented by those who desired eugenic programs and determine whether or not a coherent eugenic idea exists that can be distinguished from the tools its proponents recommend.

Eugenic concerns can be discerned by reference to views of the normal. Implicit is a belief that a standard (or standards) of human development exist against which to measure the race as a whole. This is grounded in a naturalistic interpretation of evolution and modern civilization's relationship to evolution. "Defective" is defined in reference to the ideal racial stock, not in terms of deviations from the average human.

In a study on genetic engineering, the English philosopher Jonathan Glover raised the issue of distinguishing eugenics from the emerging genetic techniques.¹²⁶ An advocate of selective usage of genetic engineering, he attempted to distinguish his position from eugenics. First, he set forth the common agenda: altering "the genetic composition of future generations."¹²⁷ He suggested three strategies. The first was environmental--tax policy, health care, poverty relief. Next was eugenics, which he defined as "aimed at altering breeding practices or patterns of survival of people with different genes."¹²⁸ Finally was genetic engineering: "[the use of] enzymes to add to or subtract from a stretch of DNA."¹²⁹ He then presented the following explanation of his approach:

The main reason for casting the discussion in terms of genetic engineering rather than eugenics is not a practical one. Many eugenic policies are open to fairly straightforward moral

objections, which hide the deeper theoretical issues [of genetic intervention]. Such policies as compulsory sterilization, compulsory abortion, compelling people to pair off in certain ways, or compelling people to have more or fewer children than they would otherwise have, are all open to objection on grounds of overriding people's autonomy. Some are open to objection on grounds of damage to the institution of the family. And the use of discriminatory tax- and child-benefit policies is an intolerable step towards a society of different genetic castes.¹³⁰

His objection to eugenics, however, was not absolute. He supported genetic screening and counseling which "are eugenic because part of their point is to reduce the incidence of severe genetic abnormality to the population."¹³¹ Eugenics, it seems, is acceptable when used against a disease: as therapy. He adopted genetic engineering as his preferred tool to affect future genetics. He framed the approach in familiar language: the negative/positive distinction employed by eugenicists.

His analysis raises several questions, the answers to which may help narrow down the meaning of eugenics today. Glover lumped the three categories together as possible means to his broader goal of genetic influence. But are the three comparable? In order to make them so, Glover defined eugenics as a technique: simply breeding strategies. Within the context of genetic manipulation, eugenics was reduced to a status equal to that of tax policy or engineering. This is, at best, a problematic understanding of eugenics. First, Glover mischaracterized the eugenic approach. His emphasis on compulsory strategies is typical of the way many view eugenics. Unfortunately, this characterization follows from the early eugenic policies and misses the shift wrought by Osborn and Muller. Muller's endorsement of artificial insemination

(AID) represented an approach to reproduction different from eugenicists before him. His genetic strategy offered a more direct form of human intervention than either the environmental strategies or those aimed at marriage. The leap from AID to surrogate parenting, in vitro birth, embryo fusion, or cloning is small compared to the leap from traditional reproductive strategies. The leap of the former is one of difference and the latter of kind. Muller provided a strategy that was of the same genus as previous eugenicists but verged on a new species. If Muller did not actually adopt the techniques of the genetic engineer, the distinction between the two lacks a meaningful difference.

Thus, the developing strategy of eugenics, which on its face supports Glover, has begun to make the wall between genetic engineering techniques and eugenics "even more warped and twisted than I expected."¹³² Aside from this shift within eugenics, Glover confused a technique (engineering) with a theory or strategy (eugenics). To argue that something is eugenic is to say that it seeks to affect genes in light of a preconceived ideal (e.g., sociability, IQ, physique). Eugenics brings with it the dual theoretical foundation of evolutionary theory and idealized man. It seems consistent with the logic of eugenics--especially in light of Osborn's desire to promote eugenic ends without explicitly using eugenic means--to include the use of genetic techniques. The essential test is the context of their usage, not the tool itself. It follows that genetic engineering should not stand alone as a discreet strategy but rather is a means used by others to achieve broader goals.

A distinction between eugenics and genetic engineering can be drawn. It revolves around, on the one hand, seeking the ideal man or, on the other, therapeutically correcting deviations from the average man. Some genetic techniques may be used, if research progresses this far, to cure spina bifida or Down's Syndrome. These interventions, at the individual level, are not eugenic; they are within the tradition of curative medicine. They seek to bring the individual up to the level of the average or typical body. To qualify as eugenic, they would have to be done for breeding purposes in an attempt to affect the norm. Simplistically stated, the therapeutic approach works on an empirical view of normality while the eugenic embodies a normative or idealized understanding.

This distinction becomes complex when one considers Osborn's writings. His desire to move eugenics from the social level to the individual proved shrewd. If Osborn succeeded, a therapeutic or contraceptive technique or practice may appear individually benign, but serve, in the aggregate, eugenic ends. Eugenics practice moves to the therapeutic level. Consequently, looking at the appearance of an action may not reveal its full nature. Thus enters the slippery slope.

Aware of this, Amatai Etzioni offered a classificatory scheme that may help clarify these issues. He divided the genetic intervention as to purpose (therapeutic or breeding) and as to client (individual or social service).¹³³ The second he modified to include voluntary or coercive social service. (See Table 1.) Assuming Osborn succeeded in forming a eugenically sensitive public opinion, it can be seen how

Table 1
Genetics in Politics

	Therapeutic Goals	Breeding Goals
Individual Service	1. e.g., abort deformed fetuses on demand [intervening to correct congenital genetic defect]	3. e.g., AID, parents' choice of donor features
Societal Service Voluntary	2. e.g., encourage people to abort a deformed fetus	4. e.g., urge people to use sperm from donors who have high IQ's
Societal Service Coercive	[5.] e.g., require genetic test before marriage license is issued	[6.] e.g., prohibit feeble-minded persons from marrying

Source: Amitai Etzioni, The Genetic Fix: The Next Technological Revolution (New York: Harper and Row, Colophon Books, 1973), p. 104.

easily these categories collapse into eugenics. The extent to which eugenic goals have infiltrated into the society should increase the likelihood that individuals would employ genetic techniques and employ them in ways that would encourage eugenic ends. For example, a eugenically aware couple of average intelligence but with some history of mental illness in their past would be more prone to AID than the non-eugenically aware. Furthermore, among couples who employ AID, the eugenically aware would be more likely to shift from individual service to societal service and take the donor with a higher IQ. This is what is meant by acting in a way to encourage eugenic ends. The belief that all six cells could be motivated by eugenic ideals (and especially the

fear that the participants are unaware of the eugenic background to their decisions) is one issue that draws attention to these practices.¹³⁴

A more optimistic position presents therapeutic goals as offering the possibility of a genetic policy but not in themselves implementing eugenics. The genetic test as a condition for marriage provides a good example. This would provide the genetic information a eugenicist would want in order to determine to what extent the couple's offspring would contribute to their generation's genetic health. The couple would then act accordingly. On the other hand, the information may be used by the couple to determine their chances of producing an abnormal child and they may then act based on their willingness and ability to financially and psychologically care for such a child. The fact that this child would continue a line of "bad" genes becomes irrelevant. Concern over the future gene pool is not the same as concern over the social cost of care for the handicapped. The former is eugenic; the latter is economic.

By thinking of Etzioni's chart as simply an analytical tool, it may survive the complexities introduced by Osborn's strategy. Speaking broadly, eugenics is more concerned with breeding than therapeutics. Because it attempts to use therapeutics to achieve breeding goals does not diminish the sense to which breeding is involved. Eugenics is also most interested in societal service. Where Osborn promoted individual choice, he meant what Etzioni called voluntary societal service (although the individual in Osborn's society did not always know the

social basis behind his actions). The tendencies of this chart are such that the genetic engineering approach Glover tried to place next to eugenics can easily fit in any of the the six cells while eugenics tends towards 3, 4, and 6. The chart also places the types of therapeutic genetic interventions as would be involved in "gene therapy" in separate cells than eugenics: 1 or 2 as opposed to 3, 4 or 6.

In the abstract, a distinction can be drawn between eugenics and genetic therapeutic techniques. That distinction resides, in large part, in the difference between Etzioni's therapeutic and breeding goals. It is one of intent. This does not, however, answer the de facto/de jure issue. In practice, intent may be impossible to determine. The issues become ambiguous. The ambiguity results from the joining of purpose between eugenics and genetics. Genetics searches for an understanding of how genes work and how they can be manipulated. The assumed purpose of manipulation is the remedy of current genetic defects and the prevention of future ones. This is eugenics' purpose except that eugenics justifies itself in terms of the idealized race while genetics is within the medical category of disease. This distinction becomes important when the two conflict: correcting the immediate genetic defect but not sterilizing the patient in order to prevent its transmission to future generations. To conclude: actions that fall within Breeding Goals should be considered de jure eugenics. On the other hand, therapeutic actions that lack a long-term impact fall within a different social category, that of disease.

Both eugenics and genetics may fall under a broader category, one that speaks to the needs of the society's dominant power centers. This view is reflected in the writings of Jeremy Rifkin.¹³⁵ While maintaining the genetic dimension, he argued that eugenics also served economic goals, as he (over)stated:

The new eugenics is commercial, not social. In place of the shrill eugenic cries for racial purity, the new commercial eugenics talks in pragmatic terms of increased economic efficiency, better performance standards, and improvement in the quality of life. The old eugenics was steeped in political ideology and motivated by fear and hate. The new eugenics is grounded in economic considerations and stimulated by utilitarianism and financial gain.¹³⁶

Rifkin dismissed too quickly the social nature of eugenics' goals. What he did capture was the extent to which eugenics sought to minimize deviance and impediments to social control. Already mentioned is how Osborn's standards stress the extent to which people should be well adapted to the work demands of an industrial order. Muller promoted physical well-being, social feeling, and high intellect.¹³⁷ Sanger often justified her position with the economic language of efficiency and utility. In sum, the eugenicists sought to ensure that society was populated by individuals who efficiently fit their environment which was the current culture and economy.

To summarize, eugenics is distinguished from other attempts to influence characteristics by its reliance on an idealized norm. Premised on Darwinian evolutionary theory eugenics added the society as creator of ideal characteristics toward which evolution should be "encouraged" to move. The primary strategy has been to influence reproductive practices on an individual and voluntary basis. However,

the rapid growth of genetic technologies offers means capable of attacking the genes directly and must now be included in the eugenic arsenal. With these tools, society may now assume the task of directing nature and adapting nature to the demands of the political economy.

What is wrong with eugenics? Why do supporters of the new biology try to distinguish their techniques from eugenics and the new biology's critics wrap eugenics around it? An obvious answer is the mistaken belief that eugenics is synonymous with its despised past. The force of this concern is seen in the American Eugenics Society changing its name to the Study of Social Biology in 1972. There is truth in this issue, but the concerns run deeper.

Another part of the answer lies in what goes along with calling something eugenic. Eugenics not only implies, but asserts, a political dimension to science. It presents a framework that transcends the science within which the research proceeds. This violates the norm of objective science. Questions are not being asked just because they are intellectually interesting. Nor is science separate from its technological application.

Other problems remain. Eugenics is premised on the belief that our civilization's problems can be lessened through biological means. This tends toward a biological reductionism. Glover illustrates this issue:

It is less easy to sympathize with opposition to the principle of changing our nature. Preserving the human race as it is will seem an acceptable option to all those who can watch the news on

television and feel satisfied with the world. It will appeal to those who can talk to their children about the history of the twentieth century without wishing they could leave some things out.¹³⁸

Unless you support the parade of horrors marching across our evening newscasts, you should support efforts to biologically change our nature which in turn will improve our world. In other words, poverty, war, and violence are located in genes. Galton would have approved.

From this perspective, it is easy to slide into a form of technological imperative. As this approach takes hold, issues increasingly will be defined in biological terms and focused on the individual (e.g., genetic screening in the workplace). Ironically, if the technological imperative progresses far enough, it would usurp political prerogatives and undermine eugenics which, at its base, is political. If this is true, the world of biotechnology¹³⁹ would grow irrespective of eugenic needs. In that case, the justifications for using technologies would adjust to match the new capabilities of technology. An example may be abortion. Abortion long served the narrow role of protecting a mother's life. As newer, safer, and easier methods of abortion developed, and related technologies developed which could lead one to want an abortion (e.g., contraception and amniocentesis), pro-abortion forces sought to "enlarge the concept of what is therapeutic" and redefine the nature of the fetus.¹⁴⁰ A political rationale had to adjust to accommodate the changing practices resulting from the greater capabilities of the technique. The result was first the reform laws of the 1960's and later the Supreme Court

decision.¹⁴¹ On the other hand, we could argue that the eugenic environment encouraged the development of these techniques resulting in political (i.e., eugenic) considerations co-opting scientific/technological developments. In either case, the issues are seen in biological terms and this is a manifestation of the technological and naturalistic bias whereby we look to science to solve our problems.

Returning to eugenics' flaws, another one flows from eugenics' own base: Darwinian evolution. Basing any political philosophy on scientific theories is a precarious act. As has been discovered in the nuclear power/weapons field, scientific theories and interpretations change and these changes may undermine the political beliefs supporting the use of that science. American eugenics matured under the wing of Darwinian evolution modified by Mendelian genetics. Today, Darwin's theory is fiercely debated. Stephen Jay Gould, for example, argues that Darwin correctly identified natural selection as the mechanism of evolution but misunderstood the process. Rather than being a process of slow and gradual change (an important element supporting eugenics), evolution is, in fact, a series of "big bangs" followed by centuries of no evolutionary change. Rather than being a slowly evolving variation of a species, we represent a branch of a species from which a part became isolated and then adapted to its new environment, creating a new species that remains unchanged until another splinter breaks away. If this is true, then the premise of eugenics is undermined.

Another premise of contemporary eugenics, deleterious mutations, has also been challenged. According to Rifkin, some now argue that the mutation load is a means to preserve the species, not, as Muller argued, a threat to survival. This new argument claims that mutations are the mechanism by which a species fine tunes its relationship to the environment in order to preserve its nature. Mutations do not change the evolutionary nature of the species, rather they allow adjustments to small environmental changes.¹⁴² Regardless of the final outcome of this debate (the gadflies still compose a distinct minority of natural historians) it illustrates the precarious nature of scientific theories. Because many political positions sustain themselves by custom and acceptance, the undermining of their theoretical underpinnings may not "trickle up" to political practice.

Another problem, and one more serious, is the idea of normality underlying eugenics. Darwin's work embodied a standard: "best fit". The eugenicists turned "best" into a normative position reflecting where we should be rather than the empirical where we are. All eugenicists argue that as a society we must establish standards as to what we want as the "best fit". This becomes the idealized norm. (This does not preclude a certain amount of deviation around the norm.) Osborn sought to legitimate this process by democratically (in the free market sense) choosing the characteristics and he succeeded in shifting the debate to this procedural issue, as Etzioni illustrates:

At issue is a public policy which welcomes certain biological features over others--e.g., energetic over lethargic qualities. This is rather similar in nature to our call for limiting the family

size. Some are influenced by it, others ignore it. . . . In short, I no longer saw a contradiction between a genetic policy and a democratic society.¹⁴³

This resolves the problem if the fundamental question concerns the nature of an authority and what it chooses. It is hard to argue against democratic choice. But, this form of democracy also embodies a coercive dimension. The danger of the idealized norm--and this also applies to the therapeutic medical interventions--lies in our perception of those who fall outside the norm. They face stigmatization; in the extreme, a status less than human: a freak.

Drawing upon his research on the social status of freaks, Leslie Fiedler raised some important concerns regarding normality which provide an important perspective on eugenics and conclusion to the Chapter. He characterized our relationship to freaks as an "image of the secret self."¹⁴⁴ We looked upon them with fear and wonderment, bringing them into our religion and then our entertainment (e.g., carnival sideshows). Both confer a moment of legitimacy on them. The development of technology allowed us to move into a third stage and "repair" freaks.¹⁴⁵ The Greeks portrayal of their gods in "idealized human form" raised "normal . . . to its highest power."¹⁴⁶ Today, the norm is not expressed in our gods, but in ourselves. In the past, the "secret self" could be confined to religious belief, the sideshow of a carnival, or the movie screen. Today we can exorcise it with the genetic scalpel.

The belief that we can remove our secret self denies humanity's complexity. "It is especially important [argues Fiedler] for us to realize that finally there are no normals at a moment when we are

striving desperately to eliminate Freaks, to normalize the world."¹⁴⁷

Our uncomfortable wonderment of freaks involved a recognition that they were a part of us; that others viewed us as freaks. Who has not lived through the insecurities resulting from perceived inadequacies and deformities? They often occur at night and are controlled as we age, but few can eliminate them completely.¹⁴⁸ The issue becomes compounded by the shifting understanding of normal. Few wanted to be Black in the 1950's. Today, those who, in the 1950's, wore their whiteness proudly look for Indian blood. The big busts of the 1960's (real or artificial) gave way to the liberated bust of the 1970's. If they were alive today, how would those "repaired" by sterilization early in the century feel about our current view of normality?

Forgetting our self begets a dangerous kind of politics, as Fiedler appropriately warned:

And I sympathize with [the dwarf's] stand [against being seen as abnormal], insofar as the war against "abnormality" implies a dangerous kind of politics which begins with a fear of difference and eventuates in a tyranny of the normal. That tyranny, moreover, is sustained by creating in those outside the norm shame and self-hatred--particularly if they happen to suffer from that vast majority of "deformities" which we still cannot prevent or cure.¹⁴⁹

And this is what Osborn sought to do. His campaign to turn public opinion into a force to direct marriages along eugenic lines would create the subtle force in society that leaves as illegitimate those unfortunates who do not measure up to the ideal and damns those who do not try.

NOTES

1. 274 U. S. 200.
2. Francis Galton, "Hereditary Talent and Character: Part II," MacMillan's Magazine 12 (1865):326.
3. Francis Galton, "Eugenics: Its Definition, Scope and Aims," in Sociological Papers (London: Macmillan and Co., 1905), p. 50.
4. Galton, "Eugenics: Its Definition, Scope and Aims," p. 50; emphasis added.
5. Galton blinks at the issue of man creating the knowledge through his interpretation of it.
6. Francis Galton, Memoirs of My Life, 3rd ed. (London: Methuen and Co., 1909), p. 311.
7. Galton, "Eugenics: Its Definition, Scope and Aims," p. 47; emphasis added.
8. Galton, "Eugenics: Its Definition, Scope and Aims," p. 42.
9. Galton, "Eugenics: Its Definition, Scope and Aims," p. 47.
10. Galton, "Hereditary Talent II," p. 319.
11. Galton, "Hereditary Talent II," p. 319.
12. Galton, Memoirs, p. 314. Galton not only based this point on impressionistic evidence, but his impressions were wrong.
13. Francis Galton, "Hereditary Talent and Character: Part I," MacMillan Magazine 12 (1865):158-163.
14. Galton, "Hereditary Talent II," p. 326.
15. The three scientists working independently were: William Bateson (England), Hugo de Vries (Holland), and K. Correns (Germany).
16. Kenneth Ludmerer, Genetics and American Society: An Historical Appraisal (Baltimore: The Johns Hopkins University Press, 1972), p. 48.

17. This theory claimed that environmentally acquired traits could be passed on to future generations.
18. Mark Haller, Eugenics: Hereditarian Attitudes in American Thought (New Brunswick, N.J.: Rutgers University Press, 1963), Chapters IV and VI.
19. Eugenics and The Progressives (Nashville, Tenn.: Vanderbilt University Press, 1968), p. 182.
20. See Everett Carll Ladd, Jr., American Political Parties: Social Change and Political Response (New York: W. W. Norton and Co., 1970) and James L. Sundquist, Dynamics of the Party System: Alignment and Realignment of Political Parties in the United States (Washington, D. C.: The Brookings Institution, 1973).
21. Haller, p. 77.
22. Ludmerer, 43; emphasis added.
23. Stephen Jay Gould, The Mismeasure of Man (New York: W. W. Norton and Co., 1981), p. 21.
24. Gould, p. 26.
25. Gould, p. 22.
26. Gould.
27. Gould.
28. Gould, pp. 22-23.
29. Haller, p. 91.
30. Haller, p. 137.
31. Harry H. Laughlin, Eugenical Sterilization in The United States (Chicago: Psychopathic Laboratory of the Municipal Court of Chicago, 1922), pp. 446-447; emphasis added.
32. Laughlin, p. 447.
33. Walter Berns, "Buck v. Bell: Due Process of Law?," Western Political Quarterly 6 (1953):766.
34. Haller, p. 65.
35. Ludmerer, p. 101.

36. See Gould, especially Chapter 5, for a devastating critique of the methods used to measure intelligence and, in particular, the techniques in practice. The investigators relied on visual screening for intelligence and when they administered a test, many of the questions called for information clearly unavailable to those (literally) just off the boats. Social, racial, and ethnic prejudices on the part of the eugenicists exudes from Gould's account.
37. Laughlin, p. 446; emphasis added.
38. Mrs. Mary Brown, quoted in Ludmerer, p. 103; emphasis added.
39. Pickens, p. 215.
40. See Berns.
41. Margaret Sanger, Woman and the New Race (New York: Brentano's; Reprint ed., Elmsford, N. Y.: Maxwell Reprint Co., 1969, 1940,1920), pp. 94-95.
42. Sanger, p. 44.
43. Sanger, pp. 3-4.
44. Margaret Sanger, The Pivot of Civilization (New York: Brentano's; Reprint ed., Elmsford, N. Y.: Maxwell Reprint Co., 1969, 1922), p. 25.
45. Sanger, The Pivot of Civilization, p. 70.
46. Sanger, The Pivot of Civilization, p. 48.
47. Sanger, Woman and the New Race, p. 36.
48. Sanger, Woman and the New Race, p. 37.
49. Sanger, Woman and the New Race, p. 44.
50. Sanger, Woman and the New Race, p. 143.
51. Sanger, The Pivot of Civilization, p. 103.
52. Sanger, The Pivot of Civilization, p. 180.
53. Sanger, Woman and the New Race, p. 68.
54. Sanger, The Pivot of Civilization, p. 184.

55. Sanger, The Pivot of Civilization, p. 91.
56. Sanger, The Pivot of Civilization, pp. 101-102.
57. Sanger, The Pivot of Civilization, p. 140.
58. Sanger did limit her birth control clinics to married couples. The logic of her arguments, however, carried over to the unmarried. It appears the limitation of marriage was politically inspired. She objected to eugenic manipulation of marriage on the ground that people married for more reasons than just sex. Therefore, a reliance on marriage would fail to fully achieve eugenic purposes.
59. Frederick Osborn, who will be discussed below, was Secretary of the American Eugenics society and a leading force in the movement's attempt to modernize and regain credibility.
60. Sanger, The Pivot of Civilization, pp. 144-145.
61. Frederick Osborn, "Development of A Eugenic Philosophy," American Sociological Review 2 (1937):389.
62. Frederick Osborn, Preface To Eugenics (New York: Harper and Brothers, 1940), p. 101.
63. Frederick Osborn and Carl Jay Bajema, "The Eugenic Hypothesis," Social Biology 19 (1972):341.
64. American Eugenics Society, "The Development of Eugenic Policies: Scientific Background for a New Orientation of Eugenics," (1937), Margaret Sanger Papers, Sophia Smith Collection, Smith College, Northampton, Mass., p. 20.
65. Osborn, Preface, pp. 45-46.
66. Osborn, "Development of A Eugenic Philosophy," p. 394; emphasis added.
67. Osborn, Preface, pp. 195-196.
68. Frederick Osborn, Preface To Eugenics, Revised Ed. (New York: Harper and Brothers, 1951), p. 240.
69. Osborn, Preface, p. 196.
70. Osborn, "Development of A Eugenic Philosophy," p. 390.
71. Osborn, "Development of A Eugenic Philosophy," p. 391.

72. Osborn, Preface, p. 20n.
73. Osborn, "Development of A Eugenic Philosophy," p. 396.
74. Frederick Osborn, The Future of Human Heredity: An Introduction to Eugenics in Modern America (New York: Weybright and Talley, 1968), p. 91.
75. Osborn, Preface, Revised, p. 237.
76. Osborn, Preface, Revised, p. 236.
77. Osborn, Preface, p. 27.
78. This position is a topic of hot debate among experts. Some argue that changes are the result of major change followed by a period of calm. Gould, for example, promotes this position.
79. Osborn, Preface, Revised, p. 237.
80. Osborn, Preface, p. 98.
81. Osborn, "Development of A Eugenic Philosophy," pp. 393.
82. Osborn, "Development of A Eugenic Philosophy," p. 393.
83. Osborn, Preface, p. 36.
84. Osborn, "Development of A Eugenic Philosophy," p. 393.
85. Osborn, "Development of A Eugenic Philosophy," p. 393.
86. Osborn, Preface, pp. 31-33.
87. Osborn, Preface, pp. 31-33.
88. See generally, Osborn, The Future of Human Heredity.
89. Osborn, The Future of Human Heredity, p. 91.
90. Garrett Hardin, "Genetic Consequences of Cultural Decisions in the Realm of Population," Social Biology 19 (1972):350-361.
91. Hardin, p. 358.
92. Hardin.
93. Hardin.

94. Hermann Muller, "Our Load of Mutations," in Hermann Muller, Studies in Genetics: The Selected Papers of H. J. Muller (Bloomington, Ind.: Indiana University Press, 1962).
95. Hardin, p. 359.
96. Hardin, p. 360.
97. Osborn and Bajema, "The Eugenic Hypothesis," p. 337.
98. Osborn, The Future of Human Heredity, p. 104.
99. (New York: Vanguard Press, 1935).
100. Hermann Muller, "One Hundred Years Without Darwinism Are Enough," The Humanist 19 (1959):140.
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106. Hermann Muller, "The Dominance of Economics Over Eugenics," in H. Perkins, et al., eds., A Decade of Progress in Eugenics, Scientific Papers of the Third International Congress on Eugenics (Baltimore: The Williams and Wilkins, Co., 1934), p. 140.
107. Muller, Out of the Night, p. 49.
108. Hermann Muller, "Further Studies Bearing on the Load of Mutations in Man," in Hermann Muller, Studies in Genetics: The Selected Papers of H. J. Muller (Bloomington, Ind.: Indiana University Press, 1962) pp. 573-574.
109. Muller, "Our Load of Mutations," p. 569.

110. Hermann Muller, "How Radiation Changes the Genetic Constitution", in Elof Axel Carlson, The Modern Concept of Nature: Essays on Theoretical Biology and Evolution by H. J. Muller, (Albany, N.Y.: State University of New York Press, 1973), p. 102.
111. Muller, Out of the Night, p. 35.
112. Muller, p. 32.
113. Muller, pp. 61-62.
114. Muller, p. 82.
115. Muller, p. 46n.
116. Muller, "Our Load of Mutations," p. 570.
117. Muller, "Our Load of Mutations," p. 570.
118. Muller, Out of the Night, pp. 108-111.
119. Muller, Out of the Night, p. 111.
120. Muller, Out of the Night, pp. 111-112.
121. Muller, Out of the Night, p. 113.
122. Muller, Out of the Night, p. 44. See also p. 125 where Muller wrote:

And so we foresee the history of life divided into three main phases. In the long preparatory phase it was the helpless creature of its environment, and natural selection gradually ground it into human shape. In the second--our own very short transitional phase--it reaches out at the immediate environment, shaking, shaping, and grinding it to suit better the form, the requirements, the wishes, and the whims of man. And in the long third phase it will reach down into the secret places of the great universe of its own nature and, by the aid of its ever-growing intelligence and co-operation, shape itself into an increasingly sublime creation--a being beside which the mythical divinities of the past will seem more and more ridiculous, and which, setting its own marvelous inner powers against the brute Goliath of the suns and planets, challenges them to contest.

123. see p. 9, n. 23.

124. See Jeremy Rifkin, Algeny: A New Word--A New World (Harmondsworth, England: Penguin Books, 1984).
125. See Swann v. Charlotte-Mecklenburg Board of Education, 402 U. S. 1 (1971) and Milliken v. Bradley, 418 U. S. 717 (1974).
126. Jonathan Glover, What Sort of People Should There Be? Genetic Engineering, Brain Control and Their Impact On Our Future World (Harmondsworth, England: Penguin Books, 1984).
127. Glover, p. 26.
128. Glover, p. 27.
129. Glover, p. 27.
130. Glover, p. 29
131. Glover, pp. 29-30.
132. Justice Jackson concurring in Zorach v. Clausen, 343 U. S. 306, 325 (1952). This, of course, was writtten in regard to church/state issues.
133. Amitai Etzioni, The Genetic Fix: The Next Technological Revolution (New York: Harper and Row, Harper Colophon, 1973) pp. 101-133.
134. For contrasting views, see William T. Vukowich, "The Dawning of the Brave New World--Legal, Ethical, and Social Issues of Eugenics," University of Illinois Law Forum 1971 (1971):189-231 supporting genetic advances and Charles Frankel, "The Specter of Eugenics", Commentary, March 1974, pp. 25-33 who is cautious.
135. see Rifkin.
136. Rifkin, p. 231.
137. Muller, Out of the Night, pp. 118-119.
138. Glover, p. 56.
139. The term is from Rifkin.
140. Frank Ayd, Jr., "Eugenic Sterilization: Medical-Moral Considerations," in Jonas Robitscher, ed. Eugenic Sterilization (Springfield, Ill.: Charles C. Thomas Publisher, 1973) p. 45.

141. For a scholarly description and discussion on the history of abortion policy, see Kristin Luker, Abortion and the Politics of Motherhood (Berkeley: University of California Press, 1984).
142. Rifkin, part 4.
143. Etzioni, p. 115.
144. Leslie Fiedler, "The Tyranny of the Normal," The Hastings Center Report 14 (April 1984):40-42 and Freaks: Myths and Images of the Secret Self (New York: Simon and Schuster, 1978).
145. Fiedler, "The Tyranny of the Normal," p. 42.
146. Fiedler, p. 41.
147. Fiedler, p. 42.
148. Fiedler.
149. Fiedler.

CHAPTER II

STERILIZATION

One of the eugenicist's strategies was to promote sterilization policies. The last chapter noted that this strategy failed. Sterilization, however, has continued. At present, most sterilizations are for contraceptive purposes and are performed routinely without controversy. As a technique, however, it remains embroiled in controversy. Needless to say, those writing on the subject (especially, but not exclusively, the critics) are quick to recall its eugenic past; the technique's defenders distinguish their support from the eugenicists. The following recounts many of the complaints and explores the contemporary basis for the controversy: is it eugenics revisited or some other dimension of politics?

Historical Review

Sterilization is not a new technique to power: its cruder form, castration, was used earlier in Europe as a penalty for rape. But these were exceptional practices. Castration's extraordinary nature made it awkward to use as a technique of general policy. Not until 1894 when a Swede performed the first vasectomy and 1897 when a Swiss doctor performed the first sterilization of a woman through the abdomen did a technique offering a more precise means to control reproduction become available. In 1899 an Indiana doctor named Harry Sharp performed the

first eugenic sterilization in America.¹ Some eugenicists, as was noted in the last chapter, had grand plans for sterilization. They hoped to sexually "kill" those who represented a biological threat to others.

The eugenicists' legislative strategy achieved their first success in Pennsylvania in 1905. The governor, however, vetoed the bill allowing Indiana, in 1907, the dubious honor of being the first state with a eugenic sterilization law on its books. Table 2 presents a chronology of early state laws. Those laws passed before World War I tended to be punitive and loosely written. After World War I, the state legislatures paid closer attention to procedural due process safeguards and avoided the punitive dimension that had been disallowed by the courts as cruel and unusual punishment.

The justifications employed by sterilization's proponents ranged from individual freedom to protecting the state. Gosney and Popenoe stressed the therapeutic rather than punitive nature of sterilization. Sterilization "is a protection to the subject, to his family, to the state, and to future generations."² In their review of sterilization in California, Gosney and Popenoe tried to present sterilization as a moderate and responsible policy. They stressed that it was "merely an adjunct to supervision of the defective or diseased."³ They limited its use to those whose mental disease or defect was a menace to the state;

Table 2

Sterilization Laws

<u>Year</u>	<u>State</u>
1907	Indiana
1909	California
	Connecticut
	Washington
1911	Iowa
	New Jersey
1912	Nevada
	New York
1913	Kansas
	Michigan
	North Dakota
	Wisconsin
1915	Nebraska
1917	New Hampshire
	Oregon
	South Dakota
1919	Alabama
	North Carolina
1923	Delaware
	Montana
1924	Virginia
1925	Idaho
	Maine
	Minnesota
	Utah
1928	Mississippi
1929	Arizona
	West Virginia
1931	Oklahoma
	Vermont

Source: Mark Haller, Eugenics: Hereditarian Attitudes in American Thought (New Brunswick, N.J.: Rutgers University Press, 1963), pp. 133-137.

where the condition is perpetuated by heredity; and where sterilization was the best means available to deal with all or part of the condition.⁴

Sterilization, although defended as a means to protect the individual, actually was used to advance the states' interests.

Sterilization's proponents were determined to define acceptable genetic characteristics. For example, they argued that "no one [had] any right to carry the gene of Huntington's chorea or hemophilia into another family."⁵

The negation of individual rights found even stronger support in George Mangold, Head of the St. Louis School of Social Economics. He "was angered by the appeal to 'individual liberty' as an objection to eugenic measures. The price of such tender concern for the rights of individuals, he warned, would be 'racial deterioration, stupid citizenship and social disintegration.'"⁶ Thus Mangold linked together all possible justifications: race, polity, and society.

Gosney and Popenoe continued the social theme. In a chapter entitled "Sterilization For Eugenic Reasons"⁷ they included three subsections: "Cutting off Bad Heredity";⁸ "Cutting off Carriers of Defects";⁹ and "Cutting off Underprivileged Children."¹⁰ The first two fit easily into the eugenic logic, but the third can only be explained as a social goal. Under this heading sterilization is employed to prevent the mentally deficient parent from raising children out of a fear that the child "could not expect to have normal, healthy, happy lives."¹¹ This applies even if the condition is not inherited.¹² An epileptic parent, for example, fell under this category. Sterilization is the most cost effective means to handle these cases.¹³

To summarize, the early sterilization movement purported to seek the reduction of mental disease for biological purposes, but in fact it also served the interest of the state and economic and social reformers.

The movement was, however, more rhetoric than action. With the exception of California and North Carolina, few states vigorously exploited their sterilization authority. Even though most states did not repeal the laws, sterilization became disgraced as a policy tool along with the eugenics movement. What this controversy demonstrated, however, was that the eugenics movement was more than an attempt to apply science for the betterment of society; it also rested upon a vision of the social order premised on a view of the normal.

Contemporary Sterilization Practices

Despite carrying the onus of eugenics, sterilization did not die out as a practice. Voluntary sterilization has been a long standing method of contraception and in recent years has become the most common method of contraception.¹⁴

The rejection of the coercive eugenic approach has not abated controversy over sterilization. The practice has been surrounded by persistent debate centering around the issue of voluntary consent. Principally, it involves three groups in society: women, those on welfare, and the mentally ill.

Welfare, Women, and Coerced Sterilization

Reviewing sterilization practices and alleged abuses in the modern context illustrates the difficulty of identifying eugenics after Osborn. His theory was to make its practice as hidden as possible and

rarely, if ever, under the name eugenics. Osborn's agenda included issues only indirectly related to genetics, further complicating the issue.

Another complication is the extent to which sterilization has become an accepted form of contraception. While controversial in some cases, sterilization is a widely accepted technique and thus its practice may represent nothing more controversial than extending the best available technique to those unable to afford it on their own. If this is eugenics, and it is not clear that it is, it is not the hard-line practiced in the early twentieth century.

There is no shortage of allegations of abusive practices inflicted on women and, in particular, women on welfare. Abuse has been called "systematic and widespread."¹⁵ The following will review the nature of these alleged abuses and attempts to respond to the allegations. Following this discussion, data will be examined in order to evaluate the allegations.

The evidence supporting charges of abuse is circumstantial and anecdotal. Many of the abuses are thought to result from the private agenda of doctors and carried out within the context of the special doctor-patient relationship. Suspicions about doctors' attitudes has received some empirical support. In a survey of 105 doctors in an urban southeastern United States community (80% of the local doctor population) the doctors characterized those on public support as insufficiently "reliable," "intelligent," or "motivated" to use oral contraceptives.¹⁶ The public patient was seen as "a person with limited

education, who may not even be able to count, let alone sustain the motivation for contraception over a long time." (The average education of the woman on public support was ten years.¹⁷) As a consequence, the doctors recommended the pill for 73% of their private patients, IUD for 15%, and sterilization for only 6%. In contrast, for only 24% of the public patients was the pill preferred while the IUD was method of choice for 58% of the public patients and sterilization for 14%.¹⁸ When queried on their treatment of AFDC recipients who had at least three illegitimate children, 40% believed contraception should be mandatory (49% said voluntary) and among those recommending sterilization, 46% desired compulsory (51% voluntary). Fifty-eight percent supported withholding public assistance for additional children.¹⁹ "Compulsory sterilization or the withholding of public support for additional children was favored by 77%." This was highest among those doctors born south of the Mason-Dixon line (80% as compared to 47% from other regions).²⁰

Many opportunities occur during common medical practices for the doctors to act on these beliefs. The best opportunities exist during labor, the postpartum period, while the woman is sedated, or during an abortion.²¹ Other allegations include doctors refusing to perform abortions unless they are able to sterilize the woman as well. Known abuses include threatening the withdrawal of welfare benefits; failure to inform the patient of alternative forms of birth control; not asking for consent in the person's native language; or conditioning medical services, welfare, or employment on becoming sterilized.²²

But even granting the existence of these occurrences, it is not clear that they were legally coercive or illegitimate. The case of Dr. Pierce²³ illustrates the difficulty of such labels. Dr. Pierce was one of three obstetricians in Aiken County, South Carolina, but he was the only one taking on new patients. In 1972, Virgil Walker consulted him for delivery of her fourth child. She relied on Medicaid to pay her medical expenses. Pierce informed her that his policy was not to deliver the third child of those unable to pay their own bills without also sterilizing them. If she did not consent to this, she would have to find a new doctor. This was a longstanding policy on Pierce's part. Walker twice resisted his demand but finally consented, believing that her further protests would be futile. By the time she was sterilized, she had signed three consent forms.

A divided Fourth Circuit court did not find this to be coercive. Decided in 1977 and announced by Senior Circuit Judge Bryan, the court concluded that because Pierce had previously made known his position, he could not be held in violation of any laws. Citing her signature on three consent forms, the court concluded that "[a]t no time [was Dr. Pierce] shown to have forced his view upon any mother;"²⁴ this despite her having twice refused to consent out of a desire to remain fertile.²⁵

Dissenting, Judge Butzner agreed that Pierce should be left unrestricted on medical issues, but Butzner contended that Pierce's motives were economic and social, not medical. This is the pivotal issue. Doctors participating in the Medicaid program serve as the representatives of the program but are to be left alone on medical

issues. Thus if Pierce was acting on his professional judgment, he was within his proper realm. However, if the actions represented social or political values, then he fell under the color of state law and abandoned the special position granted doctors. As evidence to support his argument, Butzner related that Pierce had told one of the plaintiffs (Brown) that his tax dollars paid for her to have children and that he was tired of supporting them.²⁶ As a matter of policy, Pierce made no sterilization demands on those privately paying for his services. Butzner argued that this supported the claim that Pierce's policy derived from economic rather than medical concerns.²⁷ The plaintiff Brown had received no pressure from Pierce until he discovered that she was not paying privately. Pierce then requested her consent for a sterilization, she refused and he immediately released her from the hospital.²⁸

Butzner also contended that Pierce was an integral part of a government program, and thus fell under the color of state law. As a matter of policy, Medicaid doctors interact with the patient unimpeded. This freedom, contended, Butzner, anointed the doctors with an administrative role. (The fact that Pierce based his policy on economic considerations underlined the administrative character of his position.²⁹) Previously, Pierce had accepted \$60,000 in Medicaid funds (thus his involvement had not been minor)³⁰ and had freely chosen to accept medicaid patients. State law prohibited any coercive sterilization. In other words, Butzner refused to draw a clear

distinction between private practice and the public program. He wanted to convict Pierce.

This case illustrates the difficulty of generalizing on these issues. Pierce (or his policy) pressured the patient, but not so much as to coerce, in a legal sense. A decentralized and somewhat ambiguous program allowed protections against coerced sterilization to be defined out of the case. The dissenter would have this be a case of governmentally coerced sterilization; the majority defined it as a matter of private choice.

Less ambiguous public attempts have been made to sterilize those on welfare. The efforts to tie sterilization to welfare have been persistent. Julius Paul documents a sordid history of efforts along these lines. He identified twelve states that in the 1960's expressed "various degrees of interest in punitive sterilization."³¹ Again none of the proposals passed. Virginia and North Carolina, after attempts at coercive legislation failed, passed voluntary sterilization laws in 1962 and 1963, respectively. Several states had one house pass a law only to have it defeated in the other. Paul argued that these efforts represented the beginning of the modern eugenics where eugenic and economic goals merge:

Whereas the earlier eugenic efforts were aimed at cutting off the 'defective germ plasm' of the American population before it 'drowned' us, current efforts would be aimed at cutting off both the defective germ plasm and welfare payments in order to avoid economic strangulation of the public purse.³²

In 1973, four states considered laws that would have linked sterilization to the reception of AFDC benefits. In New Hampshire,

legislation proposed a \$1000 incentive to welfare recipients who successfully applied to the welfare office for sterilization. The bill was eventually killed.³³ In Tennessee a bill was introduced to deny welfare payments to any female who became a mother of more than two illegitimate children unless she submitted to sterilization. If she refused, any further children would be considered orphans. This received a favorable report from committee but died at adjournment.³⁴ Two bills were proposed in Ohio. One would deny AFDC funds to those with two or more illegitimate children. The other would sterilize any father who failed to support his minor children.³⁵ Neither bill received action. Finally, a legislator in Illinois introduced legislation offering free sterilization and a \$100 incentive to couples who fulfilled certain residency, income, and family considerations. The bill, after receiving an unfavorable committee report, died in the legislature.³⁶ On the other hand, in 1974 Massachusetts passed a law which prohibited tying sterilization to welfare benefits.³⁷ The failure of the bills seeking coercive sterilization bespeaks of an official reluctance to employ coercive sterilization. It cannot be ignored that the only one to pass prohibited coercion.

Relf v. Weinberger: The Federal Government Responds

The allegation of abuses reached a head with the federal government in the 1973 case of the Relf sisters.³⁸ Over the previous four years, the federal government had been working on sterilization regulations.³⁹ The Relf case resulted from the sterilizing of two black

sisters Minnie (fourteen) and Mary (twelve and retarded) Relf. The sterilization occurred at an OEO funded agency, the Montgomery County (Alabama) Community Action Agency, on June 14, 1973. AFDC funds were involved. The Relfs alleged that they were coerced into being sterilized; the agency reported that their mother consented by marking an "X" on a consent form.

In response to the publicity accompanying the sisters' sterilization, HEW issued regulations to prevent further abuses in federally funded programs. These regulations provided for written consent, a review board for those under 18 years old, legally incompetent minors must be given the above protections and in addition the approval of a state court of competent jurisdiction, and, finally, sterilization of mental incompetents of all ages receive approval of the review board and a court, but they do not need to personally consent--the consent of their representative was considered sufficient.⁴⁰ While these regulations provided an improvement over the previous condition, they were challenged in court by the National Welfare Rights Organization (NWRO). The case was consolidated with that of Katie Relf, the two sisters' mother.

NWRO challenged the regulations as inadequately protecting women from pressure to be sterilized in order to maintain their welfare benefits. The court found that "uncontroverted evidence [existed] in the record that minors and other incompetents have been sterilized with federal funds and that an indefinite number of poor people have been improperly coerced into accepting a sterilization operation under the

threat that various federally supported welfare benefits would be withdrawn unless they submitted to irreversible sterilization."⁴¹ The court determined that the legislation establishing the relevant programs required voluntary consent. The court proceeded to investigate as to whether or not HEW's regulations assured voluntarism.

The court placed the issues into the context of reproductive privacy:

The Supreme Court has repeatedly stated that the right of privacy entails the right of the individual to be free from unwarranted governmental intrusion into matters so fundamentally affecting a person as the decision whether to bear or beget a child. . . . Involuntary sterilizations directly threaten that right.⁴²

Within this context, "sterilizations are permissible only with the voluntary, knowing and uncoerced consent of individuals competent to give such consent."⁴³ In the absence of specific statutory guidance, the court defined voluntary to mean the uncoerced exercise of free will based upon information necessary to reach a decision by people of sufficient mental competence to appreciate the significance of the information.⁴⁴ Under this definition, the mentally incompetent is unable to consent and the guardian should not be allowed to consent on the incompetent's behalf.⁴⁵ This differs from the accepted practice of a guardian consenting to surgery for an incompetent. The difference between the procedures lay in sterilization's nature and permanence.

In regard to welfare abuses, the court ruled that the regulations inadequately protected the woman. New regulations must provide at the outset for the oral notification "that no federal benefits can be withdrawn because of a failure to accept

sterilization."⁴⁶ This notification must also be displayed on the consent form. The court also addressed sterilization's constitutional status, concluding that sterilization of the mentally incompetent or coerced welfare recipient constituted involuntary sterilization which "invades rather than compliments the right to procreate."⁴⁷

In sum, the court concluded that HEW's procedures to assure voluntary consent were adequate with two exceptions. First that the mentally incompetent could not voluntarily consent and second that the regulations inadequately protected against welfare abuses. Both of these exceptions are important to the politics of sterilization. Determining who can voluntarily grant consent became a central point of contention in cases arising late in the 1970's and into the 1980's. In part this concern reflects sensitivity to the eugenic legacy haunting sterilization. As the Relf court recognized, if one demands voluntarism, consent cannot be granted in the case of the mentally defective. Thus the difficult task of the defenders of sterilization of the mentally defective is to finesse this dilemma and the Relf ruling.

The significance of the finding of welfare abuse points up the social (welfare) side of sterilization. It should warn the government that sterilization, even when it is not being used as a systematic and coercive policy tool, is subject to abuse and must be monitored with great care. On this point, the court warned:

The dividing line between family planning and eugenics is murky. And yet the Secretary [of HEW], through the regulations at issue, seeks to sanction one of the most drastic methods of population control--the involuntary irreversible sterilization of men and women. . . . Whatever might be the merits of limiting irresponsible

reproduction . . . it is for Congress and not individual social workers and physicians to determine the manner in which federal funds should be used to support such a program. We should not drift into a policy which has unfathomed implications and which permanently deprives unwilling or immature citizens of their ability to procreate.⁴⁸

Reflecting on the evidence so far, no apparent policy exists promoting sterilization for eugenic purposes. On the contrary, the government has acted to prevent abuse. On the other hand, these cases of abuse, while not being systematic, are also not isolated. Their location, in the medical community and welfare programs, provides a structure that supports and hides their practice. Those who recommend it as a means of birth control must recognize that legitimating it at that level carries with it the real possibility of hidden abuse.

Although eugenics may not be at issue, sterilization remains controversial for other reasons. Empirical studies have focused on two concerns. One centers on discrimination, the other on contraception. Illustrating the first position, a Note in the DePaul Law Review presented the following indicators. The percentage of Black women sterilized is almost three times that of white (32.5% to 11.6%); Black and Latin American women's sterilization rate is almost two-thirds higher than white women; non-white welfare recipients are twice as likely to "elect" sterilization than are white welfare recipients; welfare recipients (regardless of race) are twice as likely as non-recipients to be sterilized.⁴⁹ To examine these contentions and the relative merits of the contraception view of sterilization two sets of data will be examined. The first is a survey by the National Center for

Health Statistics (Tables 3-6) and the second is a National Survey of Family Growth (Table 7).

Table 3

Choice of Contraceptive Method Among Currently Married Women, 15-44 years old, 1973, 1976, 1982 (in percent)

	Black Female	White Female	All Races
1973			
Sterilized	13.6	8.2	8.6
IUD	7.6	6.6	6.7
Pill	26.3	25.1	25.1
Diaphragm	1.2	2.5	2.4
1976			
Sterilized	10.9	9.6	9.5
IUD	6.2	6.3	6.3
Pill	22.2	22.6	22.5
Diaphragm	1.8	3.0	2.9
1982			
Sterilized	21.0	17.0	17.4
IUD	5.9	4.8	4.8
Pill	15.6	13.4	13.5
Diaphragm	3.3	4.7	4.5

Source: National Center for Health Statistics, Advancedata (December 12, 1984):3.

Examining first the data collected by NCHS, one finds reasonably consistent evidence supporting the contraception explanation. The NCHS data, however, contain a significant limitation. Based on surveys, most of the studies are restricted to married women. By excluding single women and thus also underrepresenting minorities, both prime targets for the alleged abuses, the surveys build in a bias against the eugenic and anti-welfare explanations. Nonetheless, this body of data is the best

data base available and offers important information. It also includes one study including single women.

Based upon the NCHS data, sterilization is best explained by age and parity (the number of live births)--both indicators of contraception. Table 3 portrays a decade long movement away from the pill toward sterilization. During this period, the change was most pronounced among white women. The increased popularity of sterilization among this group accounts for it becoming the most common form of

Table 4

Percent of Women 15-44 Years of Age Contraceptively Sterile

Marital Status and Parity	Contraceptively Sterile
------------------------------	-------------------------

All women	17.4%
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Parity 0	1.4
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Parity >1	29.2
-----------	------

Never married

All parities	1.3
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Parity 0	--
----------	----

Parity >1	7.9
-----------	-----

Currently married

All Parities	27.8
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Parity 0	--
----------	----

Parity >1	33.0
-----------	------

Formerly married

All parities	19.9
--------------	------

Parity 0	--
----------	----

Parity >1	23.2
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Source: National Center for Health Statistics, Advanced data
(February 11, 1985):2.

birth control. Table 4 re-enforces the contraception explanation. Those most likely to be sterilized are those married with at least two live births. They have their family and no longer feel the need to remain fecund. Breaking this data down by age confirms that increased family size and age are central to explaining sterilization. Nonsurgical contraception among the 30-44 years old group is 28.1% while the comparable rate among the 15-29 years old is 43.2%. Sterilization, on the other hand, ranges from 3.7% among the younger women to 22.6% among their elders. Among the currently married, the 35-44 age group weighs in with a 42.3% sterilization rate in 1982 compared to a 27.6% rate in 1976. These figures are consistent with the contraception explanation.⁵⁰

Table 5

Choice of Contraception Among All Women 15-44 Years Old, 1982 (in percent)

	Sterilized	IUD	Pill	Diaphragm
Black Female	14.2	4.7	19.8	1.8
Black Male	0.7	--	--	--
White Female	11.6	3.8	15.1	5.0
White Male	6.7	--	--	--
All Blacks	15.0	--	--	--
All Whites	18.4	--	--	--
All Races	17.9	3.9	15.5	4.5

Source: National Center for Health Statistics, Advancedata, no. 102 (December 12, 1984):2.

On issues of race and welfare, the data fail to support arguments of gross abuse. Tables 3 and 5 point to the greater power of contraception over race as explanatory variables. While some race

differences exist they are not large. The races differ over the method chosen and, generally, the blacks choose the most effective means (even though, as a group, they are less likely to use contraception).⁵¹ Table 6 offers the closest to direct support for welfare abuse. Two qualifications, however, limit the significance of the findings. First, the differences among the income levels are not large and, second, the change in rate of sterilization from high to low income women is greatest among the whites. The second point indicates that if these findings reflect abuse it is directed at factors related to income, not race.

Table 6

Contraception by Income and Race Among Currently Married Women 15-44 years of Age (in percent)

Percent of poverty level	Whites Sterile	Blacks Sterile
<100	18.9	26.6
100-149	19.0	25.9
150-199	13.1	24.0
200+	10.0	20.3

Source: U.S. Department of Health, Education, and Welfare, National Center for Health Statistics, 25 Monthly Vital Statistics Report 3 (October 4, 1976):14,16.

Further support for the contraception interpretation, but also support for welfare biases, is found in a study by Thomas Shapiro. His study drew from a 1976 National Survey of Family Growth. The sample interviewed included women married, divorced, separated, widowed, single, and living with their own children. Single women without children were not included.⁵² Table 7 summarizes his findings. Again,

race does not stand out as an explanation but welfare achieves a level of significance absent in the NCHS data.

Table 7

Sterilization Rates (per 1,000) by Race and Welfare Status

	Race		Welfare Status	
	Minority	White	Recipient	Nonrecipient
Number of live births				
0	6	4	--	--
1	3	19	11	16
2	77	128	125	115
3	185	183	260	173
4+	307	303	433	274
Race				
White	--	--	220	130
Minority	--	--	160	130
Poverty status				
<150% poverty	150	181	203	166
>150% poverty	86	96	133	120
Welfare status				
Recipient	160	220	--	--
Nonrecipient	110	130	--	--
Age				
15-24	25	27	42	43
25-34	128	117	224	125
>35	192	166	371	161

Source: Thomas Shapiro, Population Control Politics: Women, Sterilization and Reproductive Choice (Philadelphia: Temple University Press, 1985), p. 98.

Interpreting the significance of these findings is more difficult than identifying the pattern. Consistent with the NCHS, Shapiro's data present a rapid increase in sterilization as the number of births increase. It also presents large increases among welfare recipients. As a matter of official policy, the government through its

welfare program does not advocate sterilization. The data in Table 7, however, cannot be explained simply as displaying a greater desire to become sterilized. Shapiro presents other evidence isolating welfare as a significant variable. He found welfare recipients planned to be sterilized at a rate 38% greater than nonrecipients. They actually became sterilized, however, at a 91% higher rate.⁵³ Some factor other than voluntary contraception must be present. A reasonable inference is that while no systematic effort to coerce the welfare/poor into sterilization exists, greater pressure is often brought to bear on them than nonrecipients. The data presented above is what one would expect if the cases of Dr. Pierce and the Relf sisters fall into a gray zone between isolated incidents and government policy. One can imagine social workers or Medicaid doctors pushing for the most effective means of contraception. Given that sterilization has gained in popularity among the population as a whole and is clearly the preferred means of fertility control among those desiring an end to fertility, recommending it to clients need not appear to the counselor to be coercion or irresponsible. In fact, it would be natural because it fits so well into the contraception environment. Thus, as sterilization gains acceptance within the mainstream of the American population, care must be taken to ensure that its new found legitimacy does not carry over to less acceptable policy agendas.

Sterilization and the Workplace

While most attention has centered on public misuse of sterilization, it has also been the center of controversy in the private sector. On October 9, 1979, OSHA issued a citation against American Cyanamid Corporation. At issue was the company's policy of removing fertile women from jobs where they would be exposed to dangerous levels of toxic substances (Female Protection Policy). OSHA believed this amounted to forced sterilization and violated the Occupational Safety and Health Act of 1970. At issue was a policy shared by the major chemical producers: Dow, Monsanto, DuPont, General Motors, Allied Chemical, Bunker Hill Smelting Co., St. Joseph Zinc Co., Eastman Kodak, and Firestone Tire and Rubber.

The company appealed the ruling and in Secretary of Labor v. American Cyanamid Corporation⁵⁴ an administrative court rejected OSHA's action. The court concluded that the Female Protection Policy fell outside OSHA's regulatory authority. The judge argued that Congress intended the agency to protect the worker against injury or ill-health resulting from the work-place and in this case, neither the work process nor work material altered the physical integrity of the employees. Granted, the policy had an effect on the workers' decisions to be surgically sterilized, but the court concluded the influence was indirect. The direct causes were social and economic (and a desire to keep the job) and consequently outside the company's control. But in fact the choice the company offered, job or surgical sterilization, is comparable to the choice between job and exposure to sterilizing

chemicals, which the Act covers. The company countered by noting that they offered other employment, comparable in pay but not necessarily comparable in quality. At present, the company has disbanded the policy and the other companies cited in the case claim they do not require sterilization.

Temporary Sterilization

Advances by science have expanded contraceptive options and simultaneously widened the sterilization debate. Most notable has been the increasing use of the drug Depo-provero. A form of contraception where an occasional injection provides protection, this drug (along with new chemical castrations) has raised concerns among feminists. One of the major objections against traditional sterilization procedures was its permanence. This objection can now be overcome without the inconveniences of a daily pill. Unfortunately, the health side effects may be problematic,⁵² specifically some have questioned the chances of pregnancy after ceasing to use the drug.

Of greater policy concern is the early signs that judges may find the flexibility of these drugs useful in sentencing. Following the pattern of earlier public practices involving sterilization, these judicial practices are few and exceptional. A federal court in Georgia did not specifically endorse sterilization but reacted to a conviction for stealing by sentencing a woman to five years probation on the condition that she "not birth any additional children."⁵⁶ That was in 1979. Since then, a few judges have moved directly into the

sterilization/Depo-provero controversy. In 1983, a South Carolina judge sentenced a rapist to a thirty year minimum sentence or the option of castration. Initially, the judge preferred physical castration but later relented and accepted chemical castration.⁵⁷ Joseph Frank Smith of San Antonio, Texas, was the first to receive Depo-provero in a rape case as part of a condition for a ten year probation. At The Johns Hopkins University, one hundred-fifty men are currently undergoing experimental court ordered therapy involving Depo-provero and counseling.⁵⁸ Depo-provero is used to control the sex drive.

If these remain isolated practices, there will be little cause for concern. These practices have, however, been the subject of debate. In 1971, Nicholas Kittrie identified this movement as the "therapeutic state."⁵⁹ This state "divests" certain practices from the normal workings of the criminal justice system:

This process of divestment has not been motivated, on the whole, by societal willingness to begin tolerating the conduct or condition previously designated as criminal. Instead, divestment has most frequently indicated a shift from criminal sanctions to a different system of social controls. Thus divestment, carried out in the name of the new social emphasis upon therapy, rehabilitation, and prevention--as contrasted with criminal law's emphasis upon retribution, incapacitation, and deterrence--has produced new types of borderland proceedings and sanctions, lodged between the civil and criminal law.⁶⁰

At its heart, divestment denies individual responsibility. It "suggest[s] that external conditions, while contributing to criminal developments, are not controlling, but that an inner imbalance is a prerequisite to crime."⁶¹

The therapeutic state moves from criminal to therapeutic; it transforms legal issues into medical. Kittrie places science at the foundation of this state. "It speaks not in terms of moral judgment . . . but in concepts reputed to be descriptive and scientific ("mentally ill," "socially delinquent," "psychopathic," etc.)."⁶² The scientific basis ensures that our understanding of events will be technical and descriptive because the issues behind those terms will be treated in a scientific manner, in this case through the science of medicine, and moral categories will not only fail to describe the issues, but mislead the society as to the meaning of the issues. Calling someone "good" or "evil" carries with it a different understanding of how to deal with him than calling him "psychopathic." In other words, the misnomer would result in practices either irrelevant to, but probably inimical to, a proper and successful handling of the person's problems. Neither the "criminal" nor society would be any better off.

If punishment plays a lessened role, what then is the goal of this system? According to Kittrie, it is "tinged with a lingering desire to defend society by isolating and controlling socially dangerous persons."⁶³ Against this background, the Depo-provero programs and sentencing option make perfect sense. Rape enters the therapeutic state when defined as an abnormal sex drive (the language, not coincidentally, is the same as Sanger's). Those committing the act cannot be held personally responsible and the state's interest lies in correcting their defects. Through a chemical treatment, their problem, and therefore

their threat to society, can be controlled. Two problems with this approach can be raised. One criticizes the releasing of those who commit violent acts. If they are the animals that the act implies why are we safe when they are released? The answer is that they are not necessarily violent. Their violence stems from a chemical imbalance or psychological disturbance. The other objection, more abstract than the first, criticizes locating the corrective measures in the body. It is as if we returned to the medieval practice of mutilation. This criticism is met by the retort that the body is the appropriate target because it is where the problem is located.

To date, the use of permanent or temporary sterilization in the criminal justice system has been an exceptional practice. The technology necessary for it, under the political framework suggested by Kittrie, is now being developed. It remains an area worth watching in the future and is quite possibly the next area of controversy involving sterilization.⁶⁴

Sterilization, The Courts, and Mental Incompetency

One area where the issues of the therapeutic state have long been a subject of open debate is the sterilization of the mentally incompetent. These practices are the direct descendents of eugenic sterilization. The issues discussed in the previous sections question the extension of eugenics to social welfare and the extent to which abusive practices occur. Sterilization and mental illness, on the other hand, has a long history of known abuse.

The contemporary battleground has been the courts. Two cases by the United States Supreme Court have set many of the issues, but most cases remain in state courts and occasionally in the lower federal courts. The issues have ranged from legal arguments over jurisdiction to extending constitutional rights.

The first significant case on sterilization was Buck v. Bell.⁶⁵ Previous to this case, lower courts explored sterilization's constitutionality against due process and cruel and unusual punishment charges, but Buck is the case from which the current lineage descends.

In his opinion for the Court, Justice Holmes defended a Virginia statute against procedural and substantive due process and equal protection challenges. His opinion remains "good law," although it ranks among the most disgraceful of the Court's pronouncements. Holmes' defense of the law against procedural due process and equal protection claims has remained relatively intact. It is his foray into the substance of sterilization policy that continues to draw criticism.

The contested Virginia law allowed for sterilization of inmates of state institutions for the mentally impaired after a special board of directors approved a written request from the superintendent of the institution. The inmate received notice, a guardian to defend her interests, and an opportunity to attend the hearing. All evidence was in writing and the proceedings subject to judicial appeal. Holmes concluded that these procedures "most carefully considered" the rights of the patient.⁶⁶

The statute found sterilization to be in the interests of the patient and welfare of society. The law presumed that the mental deficiencies were based in heredity but "if [the inmate was rendered] incapable of procreating [he or she] might be discharged with safety and become self-supporting with benefit to themselves and society."⁶⁷

The principal attack on the statute and the thrust of Holmes' short opinion dealt with these substantive conclusions. Holmes wrote:

In view of the general declarations of the legislature and the specific findings of the Court, obviously we cannot say as matter of law that the grounds do not exist and if they exist they justify the result.⁶⁸

Given the politics of the Court in 1927, this was the liberal and prudent response. While a conservative majority used the due process clauses of the Constitution to render void state and national economic legislation, Holmes deferred to legislative judgment if he believed a reasonable man would uphold the legislation's reasonableness.⁶⁹

Despite his restrained finding, Holmes' dicta journeyed into substantive issues. He made two claims for sterilization: social need and social obligation. Under social need, Holmes placed society's right to protect itself against the "menace of incompetency." "It is better for all the world [Holmes wrote], if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind." Then, in the most infamous line in the opinion, Holmes extended the argument by implying that heredity was at the root of these problems: "Three generations of imbeciles are enough."⁷⁰

Having accepted the eugenic claim of heredity, Holmes was able to join sterilization and social obligation. Because the individual may be a threat to the public welfare and the threat results from a flaw in the individual's nature, then the society's right to preserve the social welfare at the expense of the individual's freedom justifies imposing sterilization on mental incompetents. After all, society asks people to die for their country, can anyone argue that sterilization constitutes a greater deprivation of liberty? When the state finds an important social interest at stake, the individual's social obligations extend to allowing the state to act on his/her body. In Holmes' words:

We have seen more than once that the public welfare may call upon the best citizens for their lives. It would be strange if it could not call upon those who already sap the strength of the State for these lesser sacrifices. . . . The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes.⁷¹

One must ask whether the social costs of "imbecility" are comparable to those of war or even those of communicable disease (small pox).⁷² By failing to require a demanding standard of proof that a serious social threat existed and that sterilization was the only realistic remedy, Holmes left the impression that a legislature need only find bodily intrusions to be a reasonable policy in order to mandate sterilization.

Holmes legitimated sterilization but with two significant qualifications. He deferred to legislative judgment and required procedural safeguards. While Holmes' embrace of eugenics taints the case, his procedural arguments continue to dominate the issue and in

fact have been made more stringent. Recent courts, however, have not shared his deference to legislatures.

Since Holmes wrote, two significant changes in the issues as defined by the courts have changed the debate. First, judges have distanced themselves from eugenics. Holmes' reasonable man could uphold the Virginia statute because of the eugenic rationale. Now the courts focus on the well-being of the patient. The issue of defining and obtaining voluntary consent has become the central issue while Holmes disposed of the patient's right through the due process finding.

The second, and most complicating, development is the introduction of the politics of rights. By placing sterilization within the context of fundamental rights, the stakes of the debate are raised and the issues become more complicated. This development can be traced to Skinner v. Oklahoma,⁷³ the next significant Supreme Court case.

Skinner involved the punishment of criminals, not eugenic sterilization of the mentally defective. Procedurally correct, the legislation failed a narrow equal protection claim because it punished those who had been twice convicted of a felony involving moral turpitude but did not punish those whose non-felonious crime was of equal magnitude (e.g., embezzlement). Justice Douglas, writing for the Court, found this created an "invidious discrimination" between intrinsically equal offenses. Douglas wrote:

We are dealing with legislation which involves one of the basic civil rights of man. Marriage and procreation are fundamental to the very existence and survival of the race. . . . In evil or

reckless hands it [sterilization] can cause races or types which are inimical to the dominant groups to wither and disappear. . . . [S]trict scrutiny of the classification which a State makes in a sterilization law is essential.⁷⁴

This argument foreshadowed his creation of the privacy right in Griswold v. Connecticut and its later expansion in the birth control and abortion cases.⁷⁵ Even though Douglas decided the case on narrow grounds, he raised the stakes sufficiently to make sterilization hard to achieve. A right to procreate severely constrains the legitimacy of forcing sterilization on those unable to voluntarily consent.⁷⁶

During the next twenty years, no major cases surfaced. In the early 1960's, however, sterilization returned to the policy agenda.⁷⁷ In 1962, an Ohio probate court approved sterilization for a mentally incompetent eighteen year old woman.⁷⁸ No legislation supported the decision. The judge justified his action on two grounds: to protect Nora Ann Simpson from further pregnancies and to avoid "additional burdens upon the county and state welfare departments."⁷⁹

In 1965 and 1966, three California cases, and in 1966 another in Ohio, joined with Simpson in establishing a small trend toward promoting sterilization.⁸⁰ Two California cases offered sterilization as a condition for probation and the second Ohio case resembled Simpson. All five cases relied on a social interest in sterilization.

By 1970, however, the trend among the courts on this issue had shifted to extending deference to legislative action (generally meaning legislative inaction). In 1968, the Nebraska Supreme Court voted to sustain a law requiring sterilization before leaving an institution for

the mentally impaired.⁸¹ Although agreeing that mental deficiency "accentuates sexual impulses," the Court concluded that the issue belonged in the legislature.

The Nebraska court worked with the benefit of a statute. Between 1969 and 1979, courts drawn into the controversy without a statutory grounding declined jurisdiction.⁸² The reasoning ranged from treating sterilization as extraordinary medical treatment requiring explicit policy support, to concerns over the legality of sterilization (again needing legislative resolution) to fears that in the absence of a statutory base the judges would be denied judicial immunity. All of the courts were concerned about judicially imposing sterilization on one unable to voluntarily consent.

In 1978, the tone of these decisions began to change. The following passage from Guardianship of Tulley illustrate how the jurisdictional concern was brought together with a new constitutional right:

Whether in absence of statute the court is authorized to order the involuntary sterilization of a mentally incompetent ward when, as here, the guardian consents to such an operation, and the procedure is justified both medically and socially. . . . The awesome power to deprive a human being of his or her fundamental right to bear or beget offspring must be founded on the explicit authorization of the legislature. . . .⁸³

This court did not want to hide the compulsory nature of sterilizing a mentally incompetent. But the reasons go beyond the extraordinary nature of sterilization: they touch upon a fundamental right. All infringements on this right were suspect and must be accompanied by strict scrutiny. In this case, a statute authorized sterilization for

those institutionalized. The court refused to use this as justification for someone not institutionalized. The next year, in Hudson v. Hudson, the Alabama Supreme Court refused to authorize sterilization because of the "profound constitutional and social issues." It singled out the right of marriage and procreation enunciated by Douglas in Skinner.⁸⁴

While these courts were refusing to act, the Federal courts sent a different, albeit mixed, message. Relf v. Weinberger, discussed above, required strict guidelines and excluded the mentally incompetent. Three other cases, on the other hand, greatly expanded the availability of sterilization. In Hathaway v. Worcester City Hospital⁸⁵ the First Circuit Court of Appeals prohibited a municipal hospital from denying voluntary sterilization while offering other comparable non-therapeutic surgery. The court relied on Roe v. Wade⁸⁶ and Doe v. Bolton⁸⁷ in establishing a fundamental interest in procreation and required a compelling rationale to permit some surgery and deny others without significant differences in risk or cost.⁸⁸ The court concluded that this violated equal protection guarantees. The case did not involve a mental incompetent, but it did assert a judicial role in a state with no statute and it asserted sterilization as a positive right.

The second case proved to be more assertive and daring. Ruby v. Massey⁸⁹ involved mentally incompetent minors whose parents sought their sterilization. Ruby continued the constitutional theme found in Tulley and Hudson. But now, the right was an affirmative one involving choice, the exercise of which the courts must safeguard. After making reference to Relf, the court argued that the choice must be voluntary. Relf did

require voluntary choice, but for that reason excluded the incompetent. The Ruby court ignored this last point and looked for an acceptable mechanism to achieve choice. After rejecting the parents, the court concluded that the courts represented the answer. They reasoned that given the fundamental rights involved, only the courts could ensure legitimate consent. At this point, the court noted that the Connecticut statute inadequately distinguished between those institutionalized and those not and concluded the case by applying to both groups the requirements found in the statute.

In 1976, a three judge federal panel in North Carolina addressed the constitutionality of involuntary sterilization.⁹⁰ North Carolina required a director of a state institution or the county director of social services to institute sterilization procedures under the following conditions:

- (1) when he feels that sterilization is in the best interests of the mental, moral or physical improvement of the retarded person,
- (2) when he feels that sterilization is in the best interests of the public at large,
- (3) when, in his opinion, the retarded person "would be likely, unless, sterilized, to procreate a child or children who would have a tendency to serious physical, mental, or nervous disease or deficiency; or, because of a physical, mental, or nervous disease or deficiency which is not likely to materially improve, the person would be unable to care for a child or children."⁹¹

The court upheld the constitutionality of the law. Despite the court's attempt to distinguish itself from eugenics,⁹² point three is clearly eugenic. In fact it closely approximates Osborn's position and verges on the goals of the early eugenicists. The result was validating involuntary sterilization and genetic rationales. Few courts, however,

have used this as precedent and none for eugenic purposes. On the other hand, no court has repudiated it.

Hathaway and Ruby transformed the sterilization issue from procedural arguments over jurisdiction into a debate over constitutional rights and the courts' role in protecting them. By 1980, the state courts had begun to follow this lead and actively debated the substantive issues.

The Matter of the Guardianship of Hayes,⁹³ decided by the Washington State Supreme Court in 1980, set the tone and direction of the new set of cases. Rejecting self-restraint, the court disposed of these precedents as merely expressing a preference for the legislature over the courts. Placing itself as the guardian of the incompetent's interests, the court detailed strict guidelines to be met before any sterilization could be approved. Finally, the court entered into the scientific thicket. The court turned to science for assurances that sterilization was the least intrusive strategy and would remain that way for the foreseeable future. Specifically, it asked science for assurances that no new treatments or relevant contraceptive techniques were imminent.

This point was not unanimously accepted. In his concurring opinion, Justice Stafford concluded that the court's reliance on the state of science was too demanding. "It is too much to ask the moving party, the alleged mentally ill person or the judiciary to litigate such nebulous eventualities of science."⁹⁴ But the telling commentary came from Justice Roselini in dissent. He argued that the majority falsely

assumed that the person affected was indifferent to the operation. By this, Roselini meant that the court imposed its own policy preferences on the individual since it lacked any standard derived from the person's own evaluation of her position. The court tried to meet this objection by requiring the lower court judges (it is in the lower courts where these decisions were to be made) to assess the individual's attitude toward sterilization. But the problem with this is that the reason the case was in the courts in the first place was because she was mentally incapable of making a meaningful statement on the issue of consent. The dissenter painted the court as part of the imperial judiciary: entering on its own into a controversial area without first obtaining legislative guidance and acting in such a way as to permanently alter a person for whom the court purports to speak.

While Hayes broke the barrier, In re Grady⁹⁵ has received the attention. In Grady, the New Jersey Supreme Court sought to resolve the elusive issue of consent. The court reasoned that the situation was not the equivalent of compulsory sterilization (that involves her resistance), nor was it voluntary because she cannot consent. The court proceeded to create a third category of neither voluntary nor compulsory sterilization. Having created this, it sought to give it content by defining the issue as one of constitutional right. They reasoned that the constitutional right of privacy extended to voluntary sterilization. On the other hand, one also had a right to procreate--not to be involuntarily sterilized. "Implicit in both these complementary liberties [wrote the court] is the right to make a meaningful choice

between them."⁹⁶ The court recognized that Grady herself could not make the choice, but they believed that a court could approximate what she would have done, working on the assumption that she would have acted in her own best interests. In fact, the court believed that they must act because her disability should not serve to limit her constitutional rights. "To preserve that right and the benefits that a meaningful decision would bring to her life, it may be necessary to assert it on her behalf."⁹⁷

The extent to which this actively brought the court into the substance of the issue can be seen in the following. The court acknowledged that most precedents worked against its ruling but argued that Grady's constitutional right of privacy was paramount; only her ability to exercise it was lacking. The court became the neutral guarantor of that right, acting benevolently on behalf of her interests:

We do not pretend that the choice of her parents, her guardian ad litem, or a court is her own choice. But it is a genuine choice nevertheless—one designed to further the same interests she might pursue had she the ability to decide herself. . . . Our Court should accept the responsibility of providing her with a choice to compensate for her inability to exercise personally an important constitutional right.⁹⁸

But wait, from where did the right to be sterilized materialize? The court traced this right to two sources. The first root lay in the United States Supreme Court's right of privacy.⁹⁹ This right grew out of cases ensuring one the right to prevent or terminate pregnancy. The specific right to be sterilized, the second root, was developed in the lower federal courts, including Hathaway and Ruby.¹⁰⁰

The leap by the court is not entirely appropriate. Does the right to prevent conception necessarily include all means to that end including a positive guarantee that the right will be exercised? The following excerpt from a 1977 United States Supreme Court case confirms the New Jersey court's characterization of the issue as a matter of reproductive choice. Speaking for the Court, Justice Brennan wrote in Carey v. Population Services International:

. . . the underlying premise of these decisions [Griswold v. Connecticut and Eisenstadt v. Baird] that the Constitution protects "the right of the individual . . . to be free from unwarranted governmental intrusion into . . . the decision whether to bear or beget a child." . . . Eisenstadt v. Baird, holding that the protection is not limited to married couples, characterized the protected right as the "decision whether to bear or beget a child." . . . Similarly, Roe v. Wade, held that the Constitution protects a woman's decision whether or not to terminate her pregnancy. . . . "Read in light of its progeny, the teaching of Griswold is that the Constitution protects individual decisions in matters of childbearing from unjustified intrusion by the State."¹⁰¹

But sterilization differs in kind from the contraceptive methods involved in the privacy cases and the facts in Grady differ in the nature and degree of the government's involvement. In the cases establishing the privacy right, the technique allowed for future choice, including a choice opposite to that made at the time of the case.

(Obviously this does not apply to the abortion decisions when viewed from the fetus' perspective.) Sterilization, on the other hand, in its present state precludes future choice.¹⁰² It would appear that the courts expanded the right to include sterilization because sterilization was the most effective means to prevent pregnancy. In doing this, the court reflected the movement in society toward sterilization as the

preferred means of contraception. Reflecting current social practice, however, is no substitute for sound constitutional reasoning. Does the decision mean that all new scientific breakthroughs would/should be granted similar status? What if the legislature sought to regulate the contraceptive techniques out of a fear for a patient's health or because it understood the technique's effectiveness differently from the court? At what point does a technique reach the stage where a court can anoint it with this exhalted status?

The state courts have divided on this issue. The most direct response to the Grady case came from the Wisconsin Supreme Court in The Matter of Guardianship of Eberhardy. This court commented:

The fault we find in the New Jersey case is the ratio decidendi of first concluding, correctly we believe, that the right to sterilization is a personal choice, but then equating a decision by others with the choice of the person to be sterilized. It clearly is not a personal choice, and no amount of legal legerdemain can make it so.¹⁰³

The court then proceeded to the central issue:

Any governmentally sanctioned (or ordered) procedure to sterilize a person who is incapable of giving consent must be demonstrated for what it is, that is, the state's intrusion into the determination of whether or not a person who makes no choice shall be allowed to procreate.¹⁰⁴ The public policy of the state is inevitably involved.

This raises a two part criticism of the Grady decision. First, the decision effectively denies the political branches a substantive role. Relying on a fundamental right precludes the state legislature from addressing the policy issues except at the margins. To further complicate the matter, the court included the interpretation of scientific knowledge in the creation of the right and in its particular

application. In Eberhardy, the Wisconsin court expressed concern over a court's competence to deal with these technical issues. Specifically, the court questioned the depth of any court's understanding of contraception, about the retarded's ability to raise a family, as well as the relationship of the sterilization policy to other policies dealing with the mentally retarded.¹⁰⁵ A court, factually limited to those parties presenting briefs, cannot obtain the well-rounded understanding of the issue that the legislature can. In effect, the court froze out from political consideration several sensitive and integral issues.

Secondly, accepting for the moment sterilization as a right, what governmental action prompted the court's intervention? Brennan's summary of the privacy cases concluded that they protected against "unjustified intrusions by the state." But, as Eberhardy observed, the only governmental intrusion here was by the court. Nature, not the state, deprived Grady of the right to act. This is a significant difference and cannot be seen as a logical and minor extension of the privacy right. Paradoxically, the New Jersey court's decision allowed for one to sterilize another in order to protect the latter's privacy! In its desire to make this right effective, the court acted prematurely.

Another issue within the Grady opinion focuses on the standards used to protect the interests of the incompetent. In this area, the Grady court pursued a course of "strict moderation." As was already noted, the goal was the best interests of the incompetent and the court required a moderate evidentiary test: the evidence, taken as a whole,

must be clear and compelling. Most courts have followed this or a similar approach (although requiring the evidence taken individually to be clear and compelling). Others have required medical necessity and still others required substituted judgment combined with a preponderance of evidence standard.¹⁰⁶

In determining the patient's best interest, the Grady court saw itself as a facilitator, authorizing but not compelling sterilization. In future cases, the probate court, involved because of the existence of an individual right, would review the facts of the patient's condition and life situation, determine whether or not these conditions provide clear and compelling reasons for sterilization and, if so, approve the sterilization request. To this end, the court considers: the likelihood of exposure to sexual activity, the availability and feasibility of alternative contraception, the possibility of serious trauma or psychological danger from pregnancy, and the incompetent's ability to care for a child or the possibility of a future marriage to someone who could provide adequate child care. The court also reviews scientific and medical considerations, specifically: permanence of a person's (in)ability to understand reproduction and contraception, future changes in feasibility of alternative contraception, and evidence that scientific or medical advances may occur within the foreseeable future to improve the patient's medical condition or contraceptive alternatives.¹⁰⁷

The court provided several safeguards to avoid abusive sterilization. They include a guardian ad litem to argue the case

against sterilization and to cross-examine witnesses, independent medical and psychological evaluation, and, while the incompetent need not be present for the hearing, the judge should meet with the patient (not necessarily formally) and attempt to ascertain the person's views on sterilization.¹⁰⁸

Aside from the court's need to divine the future of science, these are difficult standards to meet. But the court believed them necessary given the potential conflict in interest between the guardian and patient and to prevent judicial abuse. These standards have been criticized as too restrictive by legal scholars and the Massachusetts Supreme Judicial Court.¹⁰⁹ In the latter case, the court required protective standards similar to those listed above (with less emphasis on future scientific discoveries) but lowered the standard of evidence required to that of preponderance of evidence. The court also replaced the best interests test with the doctrine of substituted judgment. Rather than the court paternalistically determining the best decision, the court decides what the patient would decide if he or she were competent. This drew the charge from the dissenter that "the court today has decided that the probate judge has the power to divine the wishes of a severely mentally retarded woman."¹¹⁰ Consequently, the process of divining has been moved from science qua medicine to psychology.

Returning to the Wisconsin case, an opening exists through which to raise general questions about this line of cases. Working from its base of legislative deference, this court faulted the best interests

test as inappropriate. In practice, this test works from experience-- both through experience gained from other cases and adjusting to experience in current application. Based on fact-finding, the court determines the best interest of the individual but reserves the option of "second thoughts" and the opportunity to correct errors. But in the case of sterilization, this is not possible. No judicial method exists to correct the errors.¹¹¹ Given a court's limited understanding of the technical issues, the difficulty in obtaining a thorough presentation of all issues and interests, and the permanence of the procedure, the court concluded that judicial action "unguided by well thought-out policy determination reflecting the interests of society, as well as the person to be sterilized, are hazardous, indeed."¹¹²

The Wisconsin court's underlying criticism of this line of cases (articulated as a criticism of the Grady case in particular) is that they ignore the social dimension and interest that must be present given the role of social institutions in the decision to sterilize. This concern cuts in several directions. First, the existence of social interests suggests legislative action before judicial intervention; or at least the court prompting the legislature to act, as the Wisconsin court did. Second, the interests of the individual must be protected against coercive state interests. The fact that the court accepted jurisdiction in this case (it simply declined to exercise it) signifies its recognition of a judicial role in this matter. But the court also believed that the legislature--learning the issues from the multiple advocate groups involved--could provide better guidelines protecting the

individual than could the courts. The court, afterall, could reject the legislature's actions.

These criticisms reflect disagreement over the proper role of the courts and which institutions should possess primary responsibility for setting sterilization policy. A criticism of greater importance to this work links the issues of these cases to issues of science policy. In a concurring opinion, Justice Coffey discussed how social biases could enter through expert testimony and distort the issues of the case. In his opinion, Justice Coffey made an argument on the influence of social ideas on science. His argument on the sterilization issue's inexorable link to social value deserves to be quoted at length:

It is my belief that this decision is a most difficult one and should never be made by courts alone as it involves a value judgment central to the constituent fabric of our society. We all ought to be involved in making this decision whether we participate as a litigant, judge, attorney, physician or as an American citizen, voting for elective representatives. In an age when the courts are for the first time declaring retarded individuals to be of equal worth with other individuals in our society and under our constitution, mandating equal educational and training opportunities, it seems anomalous that equal justice is being threatened. This is a decision on a subject matter which our society will be grappling with for years to come.

I question the physician's judgment in this case based on the court record presented for review and wonder if it is an attempt to substitute the quality of life ethic for what should be the sanctity of life ethic in medicine. In this case, it is most important to examine the rationalization involved in this medical management decision in order to understand the implications of this recent development in medical ethics and its significance for the profession and society as a whole. The rationale is easy to understand in relation to the new quality of life ethic so eloquently propounded by the social engineers of the Twentieth Century. Two questions are presented: Should a group of doctors[,] whose only basis for this fundamental and irreversible medical, surgical procedure according to this record is the guardian's request based upon a fear that this young retarded adult may in the future have sexual contact with a man[,] in the absence of statutory

guidelines and authority be allowed to substitute their judgment for society and assume complete control over the individual and subordinate her to their own ideas of what is good for her well-being? Does any court ever have direct power over the body of a living person in the absence of showing that the life of the person is in jeopardy requiring medical attention? I think not.¹¹³

Coffey questions the court's right to regulate the incompetent's life.

Of course, he does not deny the state's right to do so, he simply questions the institutional location of that regulation.

These cases do not represent sterilization abuse of the same sort discussed in the previous sections. For all their faults, the courts' decisions demonstrated an understanding of the promises and dangers of sterilization. While the culmination of the line of cases was to approve sterilization under narrowly specified circumstances, it did not represent the resurrection of the old eugenics. Osborn would probably approve of this resolution as it has the virtue of producing eugenic outcomes while being justified on other grounds (birth control).

Coincidentally converging with eugenic goals, however, is not sufficient grounds for labeling something eugenic. Osborn recommended striving for eugenic goals through other means but he also desired a tacit public consensus on eugenic ends. This clearly was not the case here. With the exception of the Buck court and the federal court in North Carolina,¹¹⁴ the courts distanced themselves from eugenics and, instead, relied upon the technological fix. The courts sought neutral and technical solutions; the virtue of sterilization was its simplicity, precision, and permanence. Through an array of procedural safeguards, the individual was protected against abuse while science entered through

expert testimony on the state of scientific knowledge and on the condition of the patient. All issues were reduced to legal and scientific terms.

The problem with this approach is that the issues are not simply legal and technical. At stake are societal decisions on the quality and sanctity of life. Who makes a fit parent? What rights do those institutionalized for mental reasons have? How should care for these patients be organized? These are among the issues at dispute behind the decision to sterilize, not just the narrower issues of the patient's health. The questions are first and foremost legislative.

The necessity of emphasizing the failure to employ the democratic political channels is due to the nature of technocratic solutions: they bypass the political realm but embody within them political values because of the context of its practice (e.g., alternatives foregone). In this case, the solution places the burden on the patient: she must be sterilized. It is the ideal solution in times of scarcity since most alternatives would be labor intensive. The Wisconsin court recognized the limited benefit of technical solutions. It refused to take this approach without first pressing the political issues to the attention of the political branches. Social theories, new medical ethics, and political values belong in this discussion; the sterilization issue belongs in the give and take of pluralist politics.

NOTES

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6. Rudolph Vecoli, "Sterilization: A Progressive Measure?" Wisconsin Magazine of History 43 (1960):199.
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9. Gosney and Popenoe, p. 126.
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17. Measham, Hatcher, and Arnold.
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20. Measham, Hatcher, and Arnold, p. 501.
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32. Paul, p. 101.
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35. Family Planning/Population Reporter 2 (August 1973):87, 98.
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39. Thomas Shapiro, Population Control Politics: Women, Sterilization and Reproductive Choice (Philadelphia: Temple University Press, 1985), p. 113-115.
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41. Relf v. Weinberger, p. 1199.
42. Relf v. Weinberger, p. 1201.
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44. Relf v. Weinberger, p. 1202.
45. Relf v. Weinberger, p. 1202.
46. Relf v. Weinberger, p. 1203.
47. Relf v. Weinberger, p. 1203.
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66. Buck v. Bell, p. 207.
67. Buck v. Bell, p. 206.
68. Buck v. Bell, 207.
69. See Holmes' dissent in Lochner v. New York, 198 U.S. 45 (1905).
70. Buck v. Bell, p. 207.
71. Buck v. Bell, p. 207.
72. Jacobson v. Massachusetts, 197 U.S. 11 (1905).
73. Skinner v. Oklahoma, 316 U.S. 535 (1942).
74. Skinner v. Oklahoma, p. 541.
75. Griswold v. Connecticut, 381 U.S. 479 (1965) birth control for married couples; Eisenstadt v. Baird, 405 U.S. 438 (1972) birth control for singles; Roe v. Wade, 410 U.S. 113 (1973) and Doe v. Bolton, 410 U.S. 197 (1973) abortion.
76. On this point Justice Jackson wrote in Skinner:
- There are limits to the extent to which a legislatively represented majority may conduct biological experiments at the expense of the dignity and personality and natural powers of a minority--even those who have been guilty of what the majority defines as crimes. (p. 546)
- This is the most substantive statement on this issue by any Supreme Court justice and hints at future rejection of sterilization.
77. See Paul.
78. In re Simpson, 180 N.E. 2d 206 (Ohio, 1962).
79. In re Simpson, p. 208.

80. See Elyce Zenoff Ferster, "Eliminating the Unfit--Is Sterilization the Answer?" Ohio State Law Journal 27 (1966):609-613.
81. In re Cavitt, 157 N.W. 2d 171 (Neb., 1968). The vote was four to declare the law unconstitutional and three in support of the act. The state constitution requires five votes to declare a law unconstitutional and thus the act was sustained by the majority vote of three.
82. See: Frazier v. Levi, 440 SW 2d 393 (Tx, 1969); Holmes v. Powers, 439 SW 2d 579 (Ky., 1969); A.L. v. G.R.H., 325 NE 2d 501 (In, 1975); Guardianship of Kemp, 118 Cal Rptr 64 (1974); Guardianship of Tulley, 146 Cal Rptr 266 (1978); Hudson v. Hudson, 373 So. 2d 310 (Ala., 1979).
83. In the Matter of the Guardianship of Tulley, p. 268 (emphasis added).
84. Hudson, p. 312.
85. 475 F. 2d 701 (1st Cir., 1973).
86. Roe v. Wade, 410 U.S. 113 (1973).
87. Doe v. Bolton, 410 U.S. 197 (1973).
88. Doe v. Bolton, p. 705.
89. 452 F. Supp. 361 (D. Conn., 1978).
90. North Carolina Association For Retarded Children v. State of North Carolina, 420 F. Supp. 451 (1976).
91. North Carolina Association For Retarded Children v. State of North Carolina, p. 455.
92. North Carolina Association For Retarded Children v. State of North Carolina, p. 454. The opinion reads on this point: "Most competent geneticists now reject social Darwinism and doubt the premise implicit in Mr. Justice Holmes' incantation that '. . . three generations of imbeciles is enough.'"
93. The Matter of the Guardianship of Hayes, 608 P. 2d 635 (1980).
94. The Matter of the Guardianship of Hayes, p. 643.
95. In re Grady, 426 A 2d 467 (N.J., 1981).
96. In re Grady, p. 474 (emphasis added).

97. In re Grady, p. 475.
98. In re Grady, p. 481.
99. See Griswold v. Connecticut, 381 U.S. 479 (1965); Eisenstadt v. Baird, 405 U.S. 438 (1972); Roe v. Wade, 410 U.S. 113 (1973); and Doe v. Bolton, 410 U.S. 197 (1973).
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101. 431 U.S. 678, 687 (1977); emphasis Brennan's.
102. Matter of the Guardianship of Eberhardy, 307 N.W. 2d 881, 896 (Wisc., 1981).
103. Matter of the Guardianship of Eberhardy, p. 892.
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105. Matter of the Guardianship of Eberhardy, p. 895.
106. Application of Eichner, 423 NYS 2d 580 (1979) (Substituted Judgment); In the Matter of Moe, 432 NE 2d 712 (Ma, 1982) (Substituted Judgment and preponderance of evidence); North Carolina Association For Retarded Children v. State of North Carolina, 420 F. Supp. 451 (1976) (Medical/Biological basis); Matter of the Guardianship of Hayes, 608 P 2d 635 (Wash., 1980); In re Perry, 414 A 2d (NH, 1980); In the Matter of C.D.M., 627 P 2d 607 (Ak, 1981); Motes v. Hall County Department of Family and Children Services, 306 SE 2d 260 (Ga., 1983) (Clear and Compelling Evidence); Matter of A.W., 637 P 2d 366 (Co., 1981) (Clear and Compelling Evidence with Medical Necessity).
107. In re Grady, pp. 481-486.
108. In re Grady, pp. 482-483. This last one is a curious requirement given that the patient is, by definition, unable to make an informed decision
109. In the Matter of Moe.
110. In the Matter of Moe, p. 724.
111. Matter of the Guardianship of Eberhardy, p. 894.
112. Matter of the Guardianship of Eberhardy, p. 895.

113. Matter of the Guardianship of Eberhardy, p. 905.
114. North Carolina Association For Retarded Children v. State of North Carolina, 420 F. Supp. 451 (1976).

CHAPTER III

GENETIC SCREENING

While sterilization practice has moved from eugenics to welfare politics, genetic screening has remained embroiled in the politics of genetics. This practice, varying widely in method, purpose, and effectiveness, has proven to be the most successful legacy of the eugenics movement and epitomizes the strategic concerns outlined by Osborn and Muller. Specifically, it operates under the rubric of two respected professions--medicine and genetics--and thus successfully hides its eugenic origins.

Genetic screening, as compared to other forms of screening, focuses on an unrealized risk for an individual or his/her offspring.

It is:

[a] systematic search in a population for persons of certain genotypes. The usual purpose is to detect persons who themselves are at risk or whose offspring are at risk for genetic diseases or genetically determined susceptibilities to environmental agents.¹

Conventional screening (e.g., for german measles or venereal diseases) ordinarily deals with those whose physical proximity to the screened-for disease places them at risk. Genetic screening, on the other hand, focuses on factors within the person: his/her genes or the fetus' genes. In this respect, it resembles such developing genetic techniques as gene therapy and gene recombination. All act upon the individual per se

rather than the environment. This, of course, was the direction in which Osborn's thought evolved and where Muller's began.

As is true for most tools, genetic screening is most interesting for the consequences resulting from its use (and it will be in these consequences where the proof of the eugenic pudding will be found). They are varied and often controversial. It offers apparent benefits for future generations ("potential people") who, without screening, would include many carrying debilitating defects "diluting" the gene pool, but now will be aborted or not conceived or whose doctors will know their condition and be able to offer treatment at a crucial moment (e.g., PKU babies) or, at a minimum, offer support to the parents. These are "apparent" benefits because treating them as benefits assumes a social, but potentially contestable, understanding of what is normal and presumes that a particular deviation from this norm is undesirable and justifies acting on the body up to and including death.

Screening represents a technical fix. The tests can identify the condition of a fetus for many disorders and thus relieve parental anxiety over the future child's health or allow a parent to abort the fetus and avoid the trauma of a handicapped child. The principal alternatives available to one after screening are abortion or doing nothing. Eventually, alternative actions, which are now exceptional, will become more routine. Fetal surgery or therapy will allow doctors to repair the defective fetus. These, however, are not available to most people screened or for most impairments.

The consequences of this practice lead in two directions. First is into the politics of abortion. Even though the genetic information provides no moral basis to justify abortion (this would rest upon a qualitative argument regarding acceptable physical states), an imperative toward abortion exists. Abortion becomes reduced to a therapeutic technique, stripped of its moral overtones despite the failure to establish that the genetic defects uncovered are abnormalities requiring therapy as opposed to unfortunate acts of nature. In fact, this carries over to other types of screening as well and is neatly represented by the expected chain of events laid out in the following statement by two genetic counselors:

[A] combination of screening for carrier status, amniocentesis, and selective abortion of a defective fetus enables a couple to achieve desired normal biological parenthood, provided the couple at risk monitors each pregnancy. Thus, by following these procedures the couple has neither to relinquish socially approved biological parenthood nor to give birth to a defective child.²

This statement hints at the second political aspect. Even though it is essentially a technical answer it works in a particular direction: eugenic. A risk is that the logic justifying narrow health care can extend to social concerns. The extent to which screening and "therapeutic" actions resulting from the screening become accepted as health issues, other issues, less clearly related to health, may become invested with this instrumental reasoning. In other words, anything that is within the reach of screening's gaze assumes the public health classification. This would allow abortion, the extent to which it can even be thought of simply as a technique, to reach to a broader range of

issues under the protective shield of health care. This would be ideal from the eugenicists's perspective because it hides the controversial eugenic element.

What the discussion of these issues will illustrate is the extent to which modern genetics fits into the modern eugenic hypothesis; the extent to which institutional settings affect the value of a technique; how technical developments push politics; and the political consequences of extended capabilities. Not all types of genetic screening have the same political implications. Prenatal screening, for example, is more closely associated with abortion than is neonatal. Consequently, it is necessary to examine each separately and through that analysis search for threads of commonality.

Prenatal Screening

Prenatal diagnosis involves examining a fetus when certain characteristics of the parents indicate a high risk of an inborn defect. It explores the possibility of hereditary disease or congenital defects. Prenatal diagnosis primarily employs five techniques. Amniocentesis involves removing a sample of the amniotic fluid. The test evaluates fetal chromosomes and therefore excludes testing for specialized cell diseases such as sickle-cell anemia. A second technique is fetoscopy. This allows the researcher to view the fetus and placenta. It can also aid in drawing out fetal blood or in fetal skin biopsies. This is one means to diagnose hemoglobinopathies and is used in fetal surgery. However, it has a higher miscarriage rate than amniocentesis.

Ultrasonography provides a means to examine the physical condition of the fetus and its age without having to invade the amniotic sac. Use of ultrasound can aid in diagnosing neural tube defects and such correctable defects as cleft palate. Neural tube defects are also tested for through measuring the alpha fetoprotein's in the maternal blood. This, however, must be conducted in conjunction with ultrasonography and amniocentesis since the gestational age of the fetus is important and amniocentesis provides a more accurate analysis of the alpha fetoprotein levels.³ A final and promising technique is still in the development stages. Chorionic villus sampling involves inserting a catheter "transcervically under sonographic guidance to a location within the villus of the chorion frondosum."⁴ This technique is seen as an alternative to amniocentesis during the first trimester. Like amniocentesis, it is confined to chromosomal analysis. It suffers from a higher miscarriage rate but is undertaken approximately four weeks earlier. Another problem of concern to researchers is a 1.7% rate of error between the test and the actual state of the fetus.⁵

Prenatal diagnosis offers the parents few options. Fetal therapy and surgery are not yet well developed and can be relegated to the background at this point. Before doing so, however, it must be observed that in the long run, they will become meaningful alternatives which will operate along the same lines as the following discussion but in a more subtle way. The screening techniques developed before these therapeutic possibilities were developed and the only realistic option was abortion. Thus the context within which these techniques were

introduced was one of eugenic abortion, not strictly therapeutic medicine.

Putting aside, for the moment, festering political controversies (e.g., abortion), prenatal screening is well within the modern health and family care paradigm. This includes a search for information on a patient's condition and their treatment as allowed by the state of medicine. Prenatal screening is a powerful information gathering tool. It can identify approximately ninety conditions.⁶ In this sense, it is just one more technique in our search for control over our health and body. In sum, it is part of a technical fix (technically repairing damage).

Unfortunately, it cannot be removed from its political context. That context is health care including the option of abortion and the pressure of normality as a norm influencing our actions. To the extent that the issues of abortion and normality influence the reception of this new technique--it illustrates how new technologies become politically contentious when introduced into unprepared institutional and intellectual contexts.

Wrongful Birth and Wrongful Life

Wrongful life and wrongful birth cases are the most enduring political response to the introduction of this technique. They allow an examination of how this particular technique has affected society and to draw generalizations about science/technology's introduction into a political context. The issues in this legal controversy were framed in

the 1967 New Jersey Supreme Court case Gleitman v. Cosgrove.⁷ Although screening techniques were not at issue in this case, the issues remain the same in the subsequent cases involving amniocentesis and Tay-Sachs screening. Gleitman involved a woman who contracted german measles early in her pregnancy and whose doctor failed to inform her of the possible adverse effects of this disease on a fetus. She contended that had she known, she would have aborted the fetus. Her child had the predicted defects. The Gleitmans brought two causes of action. First the child sued to collect for damages resulting from his birth. The mother sued for similar damages. Both causes were rejected by the court. The plaintiffs did not allege that the doctor caused the defects but rather that the doctor's negligence was the proximate cause of the birth of an impaired child. The fact of birth (or life in the infant's cause) was the injury. If the doctor had practiced properly, the parents would have possessed the information upon which they could have prevented the birth. Therefore, the argument concluded, the doctor was a proximate cause of an injury.

In rejecting this claim, the court followed two lines of argument. First it rejected the claim because of the nature of tort law. Tort law measures compensatory damages; it compares the injured state to what would have been had no negligence occurred. The court defined the choice as follows: "the infant plaintiff is therefore required to say . . . that he should not have been born at all."⁸ In other words, comparing life to nonlife. The consequence of this position was that no legally cognizable question existed:

The infant plaintiff would have us measure the difference between his life with defects against the utter void of nonexistence, but it is impossible to make such a determination. This Court cannot weigh the value of life with impairments against the nonexistence of life itself. By asserting that he should not have been born, the infant plaintiff makes it logically impossible for a court to measure his alleged damages because of the impossibility of making the comparison required by compensatory remedies.⁹

Secondly, the court added that a policy issue was at stake: the right to life. The court concluded that "it is basic to the human condition to seek life and hold onto it however heavily burdened."¹⁰ While most of the court's opinion placed the issue into the context of the competence of a court to handle the issue of compensation, in fact the court's opinion reflected a reluctance to enter into a sensitive area of public policy.

The court correctly interpreted the issue as one similar to the issues surrounding eugenic abortion. But the eugenic position was rejected because it contained an instrumental view of life: "The sanctity of the single human life is the decisive factor in this suit in tort. Eugenic considerations are not controlling. We are not talking here about the breeding of prize cattle."¹¹ Although eugenics is not strictly applicable because the condition is not genetically based, in the subsequent cases involving genetic disease it will be. What the court has identified is the desire for "normal" children. The stand of this court became the issues around which later arguments were waged. Is this a policy appropriate for a court? Is it even a public policy? If an abortion can be obtained legally (which all courts, including the Gleitman court, conceded), is it the place of a court in tort law to

prevent abortions just because they are eugenic? The court's reluctance to enter into this area denied one legal avenue to eugenic child birth. The New Jersey Court, valuing life as an end, rejected the invitation to set standards to guide the instrumental manipulation of life.

Dissenters challenged the court's policy stance and rejection of the parents' suit. No one dissented in support of the infant's cause. Justice Jacobs argued that measurable damages existed. Granting the legality of abortion, the issue to Jacobs became compensating the parents for expenses due to the "abnormal" child. The injuries were actionable because their manifestation (but not cause) resulted from poor medical advice that precluded abortion. The extra costs are measurable and, presto, the suit is justiciable.¹² Jacobs dismissed the policy issue by denying its existence in this context.

But there is no policy favoring the breach of duty here or its immunization. Nor is there any dispute that the Gleitmans could have terminated the pregnancy lawfully outside New Jersey.¹³

Jacobs proceeded to review the abortion law and concluded that it did not preclude abortion in this case.¹⁴ Consequently, no explicit policy impediments existed. The majority, on the other hand, rested its decision on a societal consideration favoring life over nonlife: "The right to life is inalienable in our society."¹⁵

The difference is significant. Aside from raising questions of judicial legislation, the social values are what the abortion and, later, the screening technologies challenge. The effectiveness of this challenge, combined with persistence by those wishing to change the law so as to take advantage of the advancing techniques, culminated in Roe

v. Wade¹⁶ and its constellation of reverberations throughout the legal system. In the wrongful birth and wrongful life cases, Roe's influence was to provide the wedge that broke the grip of the Gleitman decision. Roe not only removed the controversy over the legality of abortion, but it also undermined the position of those claiming an unqualified policy supporting life. This changed attitude was reflected as early as 1975 in cases which dealt with pre-Roe events. In that year the Texas and Wisconsin Supreme Courts both accepted the wrongful birth arguments and granted the parents the possibility of extraordinary expenses.¹⁷ Although both of these cases involved German measles, they promote an environment favorable toward prenatal screening. The courts relied upon extraordinary expenses as a means of circumventing the problem of measuring life against nonlife. In reaching its conclusion, the Wisconsin Court relied upon the argument that the mother had been denied the opportunity to receive an abortion and this constituted an injury.

This, however, does not adequately address the life versus nonlife issue. The Texas court finessed this by changing the calculus:

Previous Texas cases have indicated this distinction between the cause of action which seeks damages for wrongful birth or life and the cause of action seeking recovery of those expenditures required because the child is deformed.¹⁸

The previous cases granted cause when the birth resulted in a deformed child and denied it in those cases where the child was healthy. Thus the court can measure normal versus deformed life and need not consider the option of no life. This, of course, is the distinction motivating those undergoing prenatal screening. This distinction also places into

two different categories dealing with deviations from perfection due to deformity and those where the deviation is a matter of preference (e.g., eye color or sex). The former is given a special position, while the latter is accorded no support under the color of law. Thus perfection is meant in terms of the biological or medical average. In Jacobs, the court not only supported the abortion right but also eugenic abortion. If the deformity is what is important, then it is imperative that the health care system offer all opportunities to avoid it if the parents so desire.

Unfortunately for the eugenicists, this position was not universally accepted. While in New Jersey and Washington¹⁹ the wrongful birth claims were accepted, courts in Alabama, Illinois, Michigan, and New York²⁰ rejected the argument that a child has the right to be born free from deformity. But in dismissing the claims the Alabama and Illinois courts, and a dissenter in New York, raise important issues which address concerns underlying all of the cases. Briefly, they focus on the extent to which technology brings with it new rights (including a right to the technology) and raise a concern over the sorts of questions the application of this technology imposes on the political system. One argument, raised in dissent, claimed that technology, once developed, should be accessible to individuals. When it is denied them and the denial causes harm, the denial should be actionable. Judge Cook argued:

Certain facts of life of the 1970's must be recognized and accepted at the outset. One such fact is the legal right of a mother to abort a pregnancy Another is the developments and application of tests to identify carriers of Tay-Sachs disease and the occurrence of that disease in their yet unborn offspring.²¹

In other words, the law must accept technological developments as entitlements for those who desire their use. If it is not the technology that the person is entitled to, then it is the right to birth a physically normal child. The conflict between the court and its dissenter appears to reflect the difficulty a new technology faces as it enters into the existing setting. The new technologies offer new possibilities but their status remains in doubt.

The Alabama court took a slightly different approach:

We are not unaware of the rapid progress made in medical science in recent years. Many mysteries of the how and why of human development have succumbed to medical knowledge. However, we do not understand that the state of the art in the medical profession is such that it can be said that no child need be born deformed.²²

The implication is that by extending our capabilities we extend our rights; if the "state of the art" assured that "no child need be deformed" then the court would have granted the cause. The right to exploit our extended capabilities appears to be what the Grady court²³ found. There the most efficient technology was extended as a matter of right. Although non-voluntary sterilization is socially controversial, the interest in controlling the mentally impaired and extending access to technology overrode the controversy. In this case, however, abortion is, at present, too controversial. Although the moral issues raised by abortion have limited the extent to which prenatal screening is extended as a matter of right, the trend among the courts appears to favor its extension. It will be worth looking again at this issue to determine whether the lure of technique triumphs. If they do continue to extend access, the courts may find themselves on a slippery slope. Since the

justification used to extend access is to prevent deformed children, the courts would find themselves confronting the difficult issue of determining "by what standard and by whom would perfection be defined?"²⁴ This would open up the possibility (more likely a probability) that the understanding of perfection would move from the medically expected to the desirable. This is most likely if abortion becomes widely accepted. Under these conditions, it becomes harder to justify denying some parents relief while granting it to others. In other words, the distinction between different deviations from perfection raised by the Texas court will collapse.

To what extent should the courts build technological developments into their decisions? Is it proper for others to decide on the child's behalf what it means to be a "whole functional human?" Does a child have a right not to be born? The wrongful birth cases struggled with this issue and have slowly moved toward accepting the imperative of technology. The wrongful life cases have begun to pick up on these questions but with a different resolution. The courts answered these questions by rejecting the children's claims but accepting, sub silentio, much of the argument. In the 1982 case, Turpin v. Sortini,²⁵ the California Supreme Court granted the infant a cause of action in regard to extraordinary expenses incurred because of the infirmity. Denying general damages (the central wrongful life position), the court claimed that it was not accepting the wrongful life argument. But, it reasoned, if the parents can collect special damages why not the infant who will continue to have expenses after the parents are no longer

responsible and why should the infant depend upon parents to sue for the damages?²⁶ The court reached this compromise because it wanted to support the child's claim but found measuring life versus nonlife an impossible framework but extraordinary expenses were a manageable figure to calculate.²⁷ Thus the court was able to give the infant something without having to deviate explicitly from the precedents which denied the possibility of wrongful life. Politically, the wrongful life compromise may make sense--it extends the principle into a new area without enlarging the principle itself. The Texas court's recognition of the normal versus abnormal trade-off, on the other hand, is the most accurate reflection of the issues.

These cases represent pressure placed upon the political system to incorporate into law the advantages of new technologies. The courts incorporated these screening techniques into the requirement that physicians and laboratories provide accurate and complete professional services. While these are not unreasonable goals in themselves, when placed into the context of the alternatives available after their use, they produce politically sensitive and not entirely salutary results. The logic of the cases is that the doctor's negligence resulted in an impaired child who otherwise would not have been born. The doctor is liable for damages resulting from the birth. This places onto the doctor the responsibility to inform the patient of tests available to them. It also provides an incentive for the doctor to promote abortion.

That underlying these cases is a model of normality can be seen by the reason they exist. They are brought by parents who want children

but do not want "defective" children. The courts distinguished these cases from accidental birth wrongful birth suits (e.g., failed abortion or sterilization). At issue in the defectives' cases is whether the parents should be able to determine the nature of their children. This is a qualitative step beyond Roe which allowed parents to determine the fact of their children. When the courts finally relented and allowed a cause of action against physicians, it was because the courts accepted this eugenic goal: determining the children's nature.

The dialogue among the judges as the courts worked out the legal contours of this position approached eugenic issues. Part of the modern eugenic movement was an attempt to blend together genetic and environmental issues. The following excerpt illustrates how the courts approached this:

The Court proceeds on the notion that the claims of the infant plaintiff are based on her "wrongful life". "[T]he gist of the infant's complaint is that had defendants informed her mother of the availability of amniocentesis, Sharon would never have come into existence" It is acknowledged by the majority that this thesis--injury consisting of a wrongful life--poses insuperable analytical problems in measuring damages. "[P]lacing a value upon non-life is not simply difficult--it is humanly impossible." . . . Nevertheless, the Court does not rest its rejection of the infant's claim upon the inordinate difficulty of measuring damages for her "wrongful life", as did the Court in Gleitman. Rather, the Court now says: "[As a matter of law,] Sharon has not suffered any damage cognizable [in] law by being brought into existence." . . . Sharon, the Court states, has been given life and even with a handicap it "is more precious than non-life." . . .

An adequate comprehension of the infant's claims under these circumstances starts with the realization that the infant has come into this world and is here, encumbered by an injury attributable to the malpractice of the doctors. That injury does not consist of the child's afflicted condition. . . . Rather, the injury consists of a diminished childhood in being born of parents kept ignorant of her defective state while unborn and who, on that account, were less fit to accept and assume their parental responsibilities.²⁸

Osborn's eugenic hypothesis posited that eugenics could best be achieved by working it through conventional practices such as medicine and family life/planning. He sought to imbue the middle class life with a healthy environment which favored the fit over the unfit and supported those best able to produce the fit. Consequently, public policy consistent with that goal would have to promote wholesome family settings and the freedom of the fit to reproduce (thus the welfare state). Handler objected to the majority opinion because it posited, as a matter of public policy, that life, regardless of its quality, is sacred. Handler, on the other hand, started with Osborn's quality of life position and sought to provide the institutional conditions whereby the ideal or normal would take precedence over even life itself.²⁹ In other words, Handler desired to write into law both halves of Osborn's thesis: the rejection of genetic flaws and the promotion of a eugenic environment. The court accepted only the first.

The courts have not accepted as such the arguments in favor of wrongful life, but in their acceptance of the parents' position, they have come close. What several courts have established is the parents' right not to have defective children and that this carries a duty to the medical community. The Washington Supreme Court, for example, stated that because of the advances in medicine, "parents have a right to prevent the birth of a defective child and health care providers a duty correlative to that right."³⁰ Consequently, screening has become a part of the medical process and, from the physician's perspective, is now a component of normal medical care. Politically, it has increased the

feasibility of eugenic family planning, although when assigning it this exhalted position, the courts did not do it for eugenic reasons, but rather in the name of normality and parental choice.

Politics

The politics of prenatal screening falls into two contexts. The first is family health care; the second is abortion. Approaching prenatal screening through the wrongful birth and wrongful life cases aids in identifying how the two link together. The court cases grew out of a health care concern over identifying the status of the fetus in order to ensure that parents had as much choice in the family planning decision as was legally possible. Thus the health care component depended on the diagnostic ability of the medical practitioner.

The principal consequence of correct identification was abortion based on parental assumptions about quality of life considerations (both their's and the infants'). The failure to offer this possibility led to malpractice charges. Into this setting entered the screening techniques. They offered greater precision and power in identifying genetic defects. But this extended capability increased the opportunities for abortion. (It also offered information which might prevent abortion.) Thus the pressure of malpractice and the goals of family health both provide pressures toward recommending prenatal screening.

By itself, the technique simply offers information. It is neutral and, for most tests, effective. But no technology exists in a

vacuum divorced from social institutions. It is the social context disclosed in the court cases that makes the clinically effective technique of questionable social efficiency.³¹ In practice, two contestable practices are enhanced, abortion and quality of life considerations.³² Evaluation of the technique cannot be separated from these consequences (as well as an improved health of infants that may result).

The politics of prenatal screening in the context of these cases illustrates two factors inherent to technology in general. One is a social push toward the technology, the second the technology's push on society. At the first level, the political institutions applied pressures to introduce and expand the use of the technique. This pressure resulted from the malpractice cases where the doctors, in order to protect themselves, are under pressure to provide their patients with as much information (or inform them of the availability of the means to obtain that information) as is possible. An example of this is the action of the American College of Obstetricians and Gynecologists recommending to its members that they inform their patients about an alpha fetoprotein (AFP) prenatal screening test even though the College did not endorse the test. California has also promoted the use of the technique in its AFP screening program. By setting-up a program making the test widely available, it has placed the physicians in the position of facing malpractice if they do not inform their patients.³³

The other consequence is the force of the technique's push on the political system. In this case, the principal push is on the

abortion controversy. But it works in two ways. Although not a latent controversy to begin with, prenatal screening increases the relevance of abortion to family planning. Expanding the availability of the technique increases the number for whom abortion may become a live option. It may also prevent unnecessary abortions. However, identifying soon to be aborted fetuses is the part that causes controversy among the antiabortionists.³⁴ (It is the killing of any fetus, not net lives saved that concerns them.) Because abortion is the principal remedy, it is of necessity a part of screening. Pressure, however, is also on the antiabortionists to compromise. Although the screening in no way legitimizes abortion per se, opposition to abortion used to avoid the suffering of an infant's death (e.g., Tay Sachs) may seem unnecessarily restrictive.

Against this background falls the California AFP screening program. Under the California program, all who provide prenatal care must distribute a brochure (written at a sixth grade reading level) to each patient. The patient is asked to sign a form indicating consent or refusal to consent to the blood test. This is to re-enforce that the program is voluntary but also to protect the doctors against malpractice suits. Most insurance covers the forty dollars cost of the testing. The two principal diseases uncovered are neural tube defects (about 80% of the serious cases) and Down's syndrome (20% of the cases).³⁵ This is potentially significant because spina bifida, one of the NTD's, may be treatable so as to allow the individual to live a normal life. Successfully identifying those afflicted may allow for improved neonatal

care. While many states offer prenatal screening, this program is the only systematic AFP program. It is also the first major use of the AFP blood screening technology in the United States; the technique receives wider use in Europe.³⁶

Despite clearly benefiting many children, the program remains controversial. One element of the controversy reflects issues running through the malpractice cases: the conflict between abortion and the pressure to offer screening. California made a careful attempt to distance the program from abortion: it included the necessary follow-up testing (amniocentesis and ultrasonography) in the initial fee, but excluded payment for abortion and ensured that the failure to abort did not preclude other forms of state assistance. Despite these efforts, abortion remains an issue. In defending the program against this concern, the argument made by the chief of California's Department of Health genetic disease branch, Dr. George Cunningham, is telling:

It is not a question of offering abortion. It is a question of offering a test that offers information about the state of a pregnancy. What a person does about this depends on her own set of values.³⁷

This defense fails. When the options, as was noted above, are abortion or neonatal care, then the provider of the information is not innocently providing information. The state can reasonably expect that many will terminate their pregnancy--in fact this is a goal because they hope to reduce the costs of health care. It is blinking at reality to then argue that the state bears no responsibility for the actions it made possible. At this point the pressure of malpractice enters. Doctors

opposed in principle to abortion and who, because of their beliefs do not desire to participate, must confront the possibility of being sued for failing to offer their patients the information. Barring statutory action removing prenatal screening from malpractice claims, an unlikely event indeed, the doctor's moral dilemma cannot be solved by abstaining from the program. Thus, the program forces upon unwilling participants involvement in activities to which they object in principle and for an end (abortion) that lacks a powerful moral defense that other socially controversial and mandatory programs, such as desegregation, possess.

Finally, controversy surrounds this form of screening. The blood test does not provide definitive information, and is, in fact, subject to error because it depends upon the date of conception.³⁸ The second battery of tests will provide answers by the twenty-fourth week of a pregnancy, late in terms of abortion. The program depends upon counseling to help the mothers who receive a positive blood test draw the appropriate conclusions. This is an important part of the program because it is crucial if unnecessary abortions of normal fetuses are to be avoided. Concern over the possibility that women will not accept or understand this procedure and insist on a possibly premature abortion has been a part of the controversy over this program. It only reinforces the critical link between prenatal screening and abortion. Concerns over how successfully the testing could be carried out given the two stage (and potentially very misleading initial test) process led the FDA to delay approving the test from 1980 to 1983 and has contributed to its slow acceptance since its approval.³⁹

To summarize, prenatal screening, conceived within the preventive medicine rubric, is part damage control (alerting the medical providers to the special needs of the neonate) and part the struggle for normality. It also highlights a theme of science in politics: extended capability coupled with extended responsibility imposing a pressure to act where no pressure previously existed. The techniques have extended our ability to know the nature of our children. This potential, however, created within the political and health care system a pressure to exploit it. After the wrongful birth cases blossomed, the pressure carried with it the force of law. This response was not the only one available. The extended capability could have carried with it the responsibility to apply the technique prudently: fully aware of the moral, religious, and philosophical implications of legislating and acting on visions of normality. To a certain extent this concern was present (often noted in the early court opinions), but it was, at best, secondary. The direction of the response reflected a belief in the value of technological advances and the belief that their application improves our well-being. The veracity of this belief in this case cannot be denied. But it is too narrow. It misses the pressures placed upon the political system by expanding the abortion debate. It ignores the extent to which even the technical application of the technology revitalizes the eugenic strain in American society. With extended capabilities comes extended responsibility, but initially this responsibility is seen only in technical terms, almost as if the

technology brought with it a set of blinders to obscure problems residing outside the logic and framework of the technology.

Newborn Screening

Newborn screening examines inborn errors of metabolism.⁴⁰ The most widely practiced form of screening⁴¹ it encompasses diseases such as: Tay-Sachs, Sickle Cell Anemia, and phenylketonuria (PKU) disease. A 1986 survey⁴² found that thirty-eight states mandated a neonatal screening program and five had no mandatory program but a good compliance rate in their voluntary programs. Thirty-eight states required screening for at least one other defect and sixteen states three or more (including: Hypothyroidism, Homocystinuria, Maple Syrup Urine Disease, Galactosemia, Tyrosinemia, or Sickle Cell Anemia). The remaining five offered at least one other test.

The most common form of screening is PKU. PKU is a defect in the enzyme phenylalanine used to transform the amino acid phenylalanine into tyrosine. If untreated it results in severe mental retardation. Treatment consists of a special diet low in phenylalanine but it must be started at infancy. An inexpensive diagnostic test became available in 1961 when Robert Guthrie developed a simple, yet sufficiently reliable, blood test for the disease. The test involves removing a drop of blood from an infant's foot and measuring the amount of phenylalanine present.⁴³ In 1962, Massachusetts began a voluntary PKU screening program and made it mandatory the following year. During the 1960's several states joined Massachusetts in programs, 43 by 1973 and 48 by

1980.⁴⁴ Some objected that the early programs were premature; that they began before PKU, the Guthrie test, and the treatment were fully understood. The programs, however, proved beneficial.⁴⁵

Although accepted as "an ideal preventive health program"⁴⁶ and "a model for screening programs,"⁴⁷ controversy still follows the program. Most states test when the infant is three days old and at this young age, many false positives occur. Under these conditions the need for a follow-up test is important.⁴⁸ The specific dietary strategy has been questioned,⁴⁹ although at present this is not seen as a limiting factor on the program. Some variation exists among types of PKU and the screening program and the normal PKU diet do not cover all variations. While this does not threaten the integrity of the program, it illustrates how illusive a comprehensive screening program can be.⁵⁰

Another problem with PKU programs follows from their success. Those diagnosed early and successfully treated are usually assured of the possibility of marriage and parenthood. Many choose to reproduce. Unfortunately, many of their children suffer from retardation. This results from maternal PKU which produces retardation from elevated levels of phenylalanine in the maternal plasma, not a metabolic problem of the offspring. To alleviate this problem, it is necessary to identify "PKU mothers" and counsel them on the implications of their condition and the need for a special diet while pregnant. Quebec, Canada, undertook a genetic registry program including all people known to have PKU. The latter were "recalled" at twelve years and counseled on reproduction and PKU.⁵¹ This has been advocated by the American

Journal of Public Health for the United States.⁵² Based on the 1986 survey, 37 of the 43 states responding, had (34) or were developing (3) some form of follow-up on those treated in infancy for PKU.

In this case, "improving" the public health resulted in deleterious unintended consequences. New institutional arrangements were needed to identify the new "target" population and arrange for treatment (when possible). Again, extended capabilities extended responsibility. This, however, brings to the surface the extent to which screening may invade privacy. A genetic registry may provide a means to identify and then treat PKU mothers but it also increases the extent to which society possesses a centralized control over individuals' genetic information. The trade-off is fraught with traps which cannot be avoided as long as we extend our technological control over life. Most technological advances bring with them the need for human management of the new environment--management otherwise provided by nature--and this control and management ultimately centralizes access to the information relevant to the new environment.

On balance, newborn screening offers a major opportunity to improve public health. The principal dangers lie in adopting programs before the testing techniques and treatment are fully developed and in the extended responsibility thrust upon the health care system to meet the new challenges created by the successful use of the technology. The former may result in false expectations which could undermine the legitimacy of these programs or, in the extreme cases, severe damage to the child due to faulty diagnosis or treatment. The second danger

speaks to the political concerns of privacy, freedom, and social responsibility.

Carrier Screening

Neonatal screening and, with advances in fetal care, prenatal screening address the condition of the living. Carrier screening aims at future generations by identifying the genetic health of prospective parents. The emphasis behind this form of screening is to allow for more informed reproductive decisions. Of all three forms of testing, this one is the most intrusive into a person's life. It also has been the most politicized.

Perhaps because it is removed from the here and now, the politics of carrier screening has been less a part of public health and family planning than a part of interest group politics. The contentiousness and controversy surrounding this form of screening is rooted in programs whose origin, as well as transformation, resulted from interest group politics.

Currently, the main value of carrier screening is as a tool guiding reproduction. If the prospective parents know which deleterious genes they carry, then they can estimate the probability of a child suffering from a disease. Combined with prenatal screening (where you can determine if the worst case materialized, then abort) this can be a powerful means to assure a "successful" birth. If no prenatal tests exist, the couple faced with two carriers must judge whether the risk is

acceptable and, if not, consider adoption, AID (Artificial Insemination by Donor), or no children.

This information properly applied could result in a reduction in the number of children born with genetically transmitted diseases. It would simultaneously lessen the burden on families and the health care system; both motives of those promoting carrier screening.

Paradoxically it could have the effect of increasing the number of the deleterious genes in the pool. Without the prenatal screening, a couple would have to determine whether or not the risk was acceptable. Many would opt out, ending their gene line. Now, a variety of techniques exist which allow the genes to be passed on. For example, the couple could conceive and then prenatally evaluate the outcome, aborting if necessary. Alternatively, they could use AID if the donor was not a carrier. In a similar vein, they could hire a surrogate mother, again assuming she was not a carrier. Prenatal screening results in a 50% chance that the recessive gene is passed on (assuming they abort an affected fetus); both AID and surrogate parenting carry a 25% probability that the gene is transmitted. To the eugenicist this is a disaster because the eugenicist strives to eliminate or limit the genes in our genetic load.

The controversy over carrier screening, however, has not focused on its diseugenic potential but instead on its political consequences. Intended as a good faith means of improving family planning, it has instead been bombarded with controversy centering around questions of privacy, stigmatization, and racial bias. This practice highlights one

of the troubling aspects of information: it is not a tangible and discrete item. The testing provides information about me the use of which I cannot always control. One concern is dishonesty. The information is supposed to be confidential but the records are not totally under my control and the information may be released without my permission or knowledge. Another concern is that once the information is known, it cannot be withdrawn. Others will know something about me. They are free to make judgments and take action accordingly. Of course, this is also possible with tangible items. If I own a new BMW many may peg me as a yuppie. To some, this is an undesirable stigma. If I desire, however, I may be able to eliminate or mitigate the stigma. I can sell my BMW and otherwise make clear that what others perceived as a yuppie life was either a case of mistaken identity or a brief fall from grace. At present, I cannot change my genes. Information cannot be traded or withdrawn in the same fashion as tangible goods and consequently may create conditions outside of my control.

Adding to the problems associated with the transfer of information is the substance of this information. Screening identifies a person's genetic essence, not substances invading the body. The information describes me; how people (including me) interpret the information is also how, in part, they understand me. This concern breaks into two parts. First is confusing the identified trait (sickle cell trait) with the disease (sickle cell anemia disease) and second is a stigma attached to the carrier as a result of the confusion. The trait means you carry the recessive gene (are heterozygous for the

trait) but you do not have the disease and the heterozygous state may not carry any deleterious symptoms. The only concern is over reproduction. The disease is self-evident: you are homozygous for the condition and therefore have the disease. Unless this distinction is clear in peoples' minds (and experience with sickle cell screening demonstrated that it was not) being identified as carrying the trait can easily be interpreted as having the disease. Since for sickle cell anemia that can mean extended hospitalization and possibly a shortened life span, potential employers or insurers may (and did) discriminate against those carrying the trait in order to avoid the hardships the disease's symptoms impose on an employer (lost work time, sick pay) and an insurer (payments).⁵³ If the trait is identified early enough, it may affect parental or a teacher's expectations toward the child or even the child's self-understanding. It may also affect the extent to which others see the person as a desirable marriage partner.

The concern over stigmatization distinguishes carrier from neonatal and prenatal screening. It does not negate the value of screening but does dictate prudence in implementation. Prudence, however, has not always characterized these programs. Tay-Sachs and Sickle Cell Anemia screening have been the leading programs. Tay-Sachs began in 1970 and Sickle Cell Anemia shortly thereafter. Both programs have been recounted in detail elsewhere and only the key lessons will be discussed here.⁵⁴

The Tay-Sachs program is considered a success and Sickle Cell Anemia a failure. Tay-Sachs began as a pilot program in the Washington-

Baltimore area. It was organized through the community involving community leaders--including churches and schools. "Fourteen months of planning, leadership training, personnel development, and public education preceded the Baltimore-Washington pilot program."⁵⁵ After a successful pilot, the program expanded so that by 1980 only 13 children were born with Tay-Sachs in North America, down from the previous average of 50-100.⁵⁶ (Although how much of this can be attributed to screening may be debatable given that only 10% of the eligible population is reported to have been reached by the screening programs.)⁵⁷ Participation was voluntary.

Sickle cell anemia screening started because state governments were petitioned by the Black community concerned about sickle cell anemia but believing that governments were not responding. Tabitha Powledge's observation, which to a lesser degree applies to the later federal legislation as well, captures the failure of this early movement:

It has become increasingly clear that the arguments in favor of sickle cell screening have had more to do with politicians' desires to do something dramatic (and comparatively inexpensive) for a neglected population, and doctors' desires to encourage black interest in health in general, than with the medical wisdom of a current program of carrier screening per se.⁵⁸

In fact, reading the congressional testimony as these programs developed and were later revised, confirms Powledge's observations. Three points jump out. First, Democrats were using this as a vehicle to criticize a Republican Administration's agenda; second, the representatives were straightforward about the program's purpose as serving a neglected

group; and finally, the concern for the neglected group overshadowed concerns over stigmatization, the absence of a cure, and care in planning the program.⁵⁹

In their haste to respond, the states' programs were sloppy and not carefully planned. Some of the sins included: inadequate involvement of the community in planning and insufficient attention to educating the community to the nature and goals of the programs. Some states punished those failing to screen: four states levied fines and five either withheld marriage licenses or school attendance. (The latter being a sanction irrelevant to the condition.) Inadequate counseling left many who carried the trait confused as to their status and options. Finally, the lack of confidentiality (by 1974 only four states provided for confidentiality in their statutes) and a misunderstanding over the meaning of carrier status caused some employers to dismiss carriers and insurance companies to refuse coverage. At this point, the black community not only rejected the programs but many believed them to be an attempt to limit their population.⁶⁰

The lessons that have been drawn from this program center on management and planning. Many states mandated the screening but failed to adequately educate the target population as to the nature and value of the program. Consequently, many felt threatened or misunderstood the meaning of the test results. Closely related to this was the failure to draw people into genetic counseling, due in part to inadequate resources when the program was begun. Unclear before entering the program as to

its value and procedures, many who tested positive for the trait left believing they had the disease or that their value as a parent was diminished. The advantage the Tay-Sachs program had on these issues were community involvement in establishing the program and an extensive educational effort designed to explain the nature of the condition, what the testing would provide, and the counseling services available to work through the findings.

The recommendations follow easily: firmly ground the programs in the community; ensure extensive education (including tertiary actors, such as employers and insurance companies) before beginning the testing; provide genetic counseling as a continuous part of the program; and keep the testing voluntary. These recommendations would alleviate most of the problems uncovered in the Sickle Cell experience. A solid genetic education (note that Osborn, too, advocated this) and genetic counseling are the best remedies to the problems that Sickle Cell Anemia programs encountered. Other valuable conditions include strict confidentiality of the results, a prenatal test expanding the choices available to two carriers, and a clearly identifiable population to whom a program can be addressed. From this base, carrier screening could be extended to Thalassemia (population of Mediterranean descent) or identifying those at risk for hyperlipoproteinemia (coronary artery disease) or alpha-1 antitrypsin deficiency (susceptible to lung and liver disease).

In fact, this has been the direction of national carrier screening policy. The political response to the controversy over sickle cell was not to stop the screening but to reform and enlarge it by

bringing carrier screening under the public health cover. In 1972 Congress passed the Sickle Cell Anemia Control Act.⁶¹ This Act was broadened in 1976 to encompass Sickle Cell, Cooley's Anemia, and Tay-Sachs.⁶² Amendments in 1978⁶³ provided for basic and applied research, training, testing, counseling, information, and education for a wider range of diseases. In 1979 and 1980, 34 state genetic service programs received funds through the National Genetic Diseases Act.⁶⁴ The next significant change occurred during the 1981 budget reconciliation process. The funds for genetic programs were folded in with public health monies in the Maternal-Child Health block grant.⁶⁵ The controversy resulting from Sickle Cell did not repudiate carrier screening, only sloppily designed programs.

Reflecting upon the outcome of these controversies, a narrowly conceived screening program is reasonable. The screening programs are a technical approach to a genetically based condition. Regardless of debates over social definitions of disease, sickle cell anemia is painful and causes suffering. Tay-Sachs kills. These conditions occur because of nature (with society's intervention confined to the act of conception). Furthermore, this has an advantage over prenatal screening in that a remedy may involve not having children rather than abortion. This eliminates the question which haunts the abortion decision: can someone with sickle cell anemia live a happy and normal life? (Many can.) In this context, offering screening to those whose family history indicates a need seems reasonable. This does not, however, justify broad or mandatory programs. Mandating neonatal screening for treatable

conditions can be justified under the health provision of a state's police powers. But in the diseases screened for here, treatment is not possible and mandating screening risks stigmatization, decimating some people's self-image, and invading privacy. The only state interest that could justify mandating the screening would be to limit the number of carrier couples. Seeking to achieve this goal through mandatory screening is not too far removed from prohibiting marriage between two carriers. At present, that remains unacceptable. But if society is unwilling to do the latter, it should not undertake the former.

In the case of screening for genetic diseases (or traits), society and science's interests join easily and comfortably. For science, the social focus on the genetic dimension provides justification for research into the basic causes. It also increases its authority over the society as the definitive interpreter and principal implementor of its knowledge. For the society, it has the opportunity to improve its health. The working assumption is that the best way to attack disease is at its most fundamental point. That, too, is the goal of the research: to gain total control over the workings of genetics (albeit, piece by piece).

The bargain struck between science and society (some call it Faustian for both) reflects the technical nature of health care. Nature--the body--is reduced to an object to be addressed technically. All moral meanings attached to the being are stripped away; the being becomes the body. This is why the fact that the screening has dealt with genetically based disease is important. Screening approaches the

condition from a narrow and technical perspective; this limits the scope of what it can find. Its definition of the situation will be in terms of genetics which, fortunately, is also the source of the problem and the key element in any solution. At this point, the danger of stigmatization becomes clear. What this involves is transferring the technically defined problem (that person x deviates from the average genetic condition) into a moral one. Social evaluations of the person should not turn on the technical identification per se but rather on societal (political, economic, moral) considerations. The point behind genetic identification is that the knowledge should empower the individual, not the society over the individual.

While offering power to the individual, this recommendation does have limitations. Principal among them is its reliance on the medical system. Not everyone has equal access to it. Trust in health providers, a regular relationship with the system, and resources to enter into it fully differ across income, occupation, and region. Another concern centers on questions of power. Focusing on the genetic dimension re-enforces the relationship between a doctor and patient: the doctor acting on the patient. In fact, it places the patient in an even more passive position since his role in relating symptoms can be replaced by a sample of his blood. Of course the fact that as a society we generally accept this authority of doctors helps legitimize the genetic approach.

In relation to genetic disease, therefore, carrier screening can be appropriate although not without limitations. Enthusiasm for the

technique, however, is not confined to disease. For example, according to James and Margaret Thompson, "It is theoretically possible to screen adult populations to identify members who are at risk for one of several kinds of disorders that could be forestalled by diet, by avoidance of smoking, or by other health-promoting measures that are matters of life-style rather than of medicine."⁶⁶ It has already been used in the workplace to identify those susceptible to exposure to certain hazardous substances and has been suggested as a means to improve AID. In these cases, screening is being extended to events which have genetic aspects but which become actuated by societal or human intervention. In other words, the blame for any illness can no longer rest principally on the gene. This key change limits the force of the argument for a technical explanation and solution to the problem.

The practice of screening in the workplace has been limited and controversial. It operates on the premise that carriers of a trait, who under ordinary circumstances would not suffer from the condition, may be at risk if certain environmental insults were to trigger the condition. For example, some fear that the sickle cell trait could interfere with the blood's oxygen carrying capacity and this might be a problem for those exposed to oxidizing chemicals. The idea of screening is to identify those with such hypersensitive conditions and assign them to less threatening jobs. While sickle cell is not a good prospect for screening (the connection between workplace insults and adverse reactions has not been shown),⁶⁷ glucose-6-phosphate dehydrogenase deficiency (G6PD) and serum alpha-1 antitrypsin (SAT) were considered

viable. The former, which disproportionately affects black males and Mediterranean Jews, can predispose carriers to anemia due to a lack of oxygen. The latter may produce lung disorders.⁶⁸

This form of screening has never been widely practiced and has declined over the past dozen years. According to an Office of Technology Assessment (OTA) study, seventeen companies have tested and only five continue.⁶⁹ A survey of nine chemical companies conducted by the author confirms the general conclusion of the OTA report.⁷⁰ Seven report no current screening, one screens for sickle cell trait at the request of black employees but does not use the results for placement. The five who commented on the issue portray application of the technique as premature. Two left open the possibility of future screening if scientific developments warrant. OTA reported 53 considering future screening.⁷¹ In communication with the author, one company reported abandoning screening because "the tests were not shown to be helpful in providing a safe and healthful workplace." Controversy exists, however, over the reasons testing was abandoned, raising the possibility that the company was selective or misleading in relating its findings.⁷² In sum, the use of screening is not a significant part of employment practices but remains a viable long-term option.

As a result of at least an intellectual acceptance of this technique, the issues surrounding and logic behind it deserve discussion. Workplace screening differs in at least one important respect from the disease screening previously discussed. In the latter programs, simply being a carrier of the trait was not considered a

problem for the carrier. But in the workplace, it is the problem. This raises the problem of stigmatization in its most naked form. This fact alone has proved controversial and raises one of the many objections to this practice. First, the tests risk shifting the burden of a safe workplace from the employer to the employee. If a means exists to identify any who apparently are at risk, then the pressure to eliminate the harmful substances diminishes. Certainly this fails because it is so dependent on current knowledge. How certain are we that others do not possess unknown conditions which places them at risk? If the workplace can be cleaned up enough to diminish general risk, are not these better odds to play? If later discoveries demonstrate that they were at risk all along, they have good reason to claim preventable negligence. It also smacks of blaming the victim. It is one thing to focus on the victim when nature victimizes him (disease) but it is inappropriate when environmental conditions, within social control, precipitate the problem.

Another concern highlighted here is ethnic bias. Two of the three tests stated above are disproportionately ethnically linked. Even though the genetic condition is real, should only some groups systematically have to bear the largest burden in remedying the problems of workplace safety? Especially when alternative policies exist? This problem is magnified (but not created) when those groups have a history of being stigmatized in the general society.

Finally, while evidence exists to suggest a genetic predisposition to susceptibility to chemical insults the science of this

field is still developing. The conclusion by the OTA on the state of the science of workplace screening is illuminating:

The biological foundations of the concept of genetic screening to identify predispositions to occupational disease are sound. In addition, most of the well-studied traits are reliably identified by easy and inexpensive tests. It should be recognized that other biological variables such as age, nutritional status, preexisting diseases, and lifestyle also affect the body's susceptibility to a variety of environmental insults. The study of factors affecting susceptibility to occupational diseases, therefore, should not stop with a quantification of genetic influences, as important as they may be, but also should incorporate the other biological variables.⁷³

First, given the state of the art it would be inappropriate to screen for job related purposes. The ambiguity of the situation leaves serious doubts as to what the hazard threshold level should be and provides no clear ground to claim that those whose screening identifies possible susceptibilities are significantly more at risk than those whose genetics are "better" but whose "other biological variables" are the same or worse. More generally, the OTA conclusion raises the slippery slope question. If it is legitimate to control the workplace by limiting workers' job options based on their genes, then it also could be appropriate to control other "biological variables," several of which involve personal choices (lifestyles). Once the logic of approaching risks in the workplace through the individual is accepted, then it is a small step to expand that regulation to other relevant factors. These might include such factors as lifestyles which affect the quality of work (alcoholism) or conditions involving third persons (pregnancy). But even in these cases the problem remains that by focusing on the individual may eliminate the imperative to improve the work conditions.

As scientific understanding advances, the scope of relevant factors with a biological element grows; the scope of surveillance and control may grow as well.

The slippery slope alone is not an adequate reason to dismiss this approach. Making difficult discriminations is the nature of policy-making. What is troubling about this approach is the apparent transferring of a technical model to concerns that extend beyond the merely technical. Focusing on the biological dimension implies that the problem is a health problem. In part it is. But to accept that as the overriding problem is to confine solutions to the isolation of environmental insults to individuals as the insults become known. In other words, the problem can be addressed adequately by identifying the person's biological status. This ignores the risks others face because the tests only demonstrate risk, not safety.

While the relevance of a person's body is undeniable, focusing on the body is an attempt to reduce the issue to a level amenable to scientific investigation. The promise of science in this case is to improve the employers ability to fine tune the workplace. Most of the occupational health issues that triggered the interest in screening grew out of our exploitation of scientific advances. Pharmaceuticals, chemicals, and plastics are all components of science driven progress. Science provided these advances through its ability to control nature: to exploit the workings of nature consistent with our priorities. While many benefits result from this, so do unintended costs. That is the tradeoff behind the chemical company's slogan: "Without chemicals, life

itself would be impossible." Three options exist in response to these externalities. First, we could abandon the scientific advances. Few accept this modern day Ludditism. Second, we could simply "write-off" the consequences. What are a few extra cancer cases compared to a great advance? Obviously this is unacceptable as a general rule. Finally (and coincidentally most reasonably), science could be marshalled to explain and remedy the consequences resulting from our exploitation of its earlier advances. Scientific advances often create new scientific problems. Where nature once provided the balance and counterbalance, an artificial world demands artificial balance.

The consequence is that science is called upon to expand its control in such a manner that the previous gains can be retained. Man must be made to adapt to the new environment. The lure of genetics is that it opens up the body as a means to that end. This was the insight of the eugenics movement and it is part of the modern interest in genetics. Science/technology once adopted tends to perpetuate itself. Since scientific knowledge is by definition incomplete (the goal, not the reality, is perfect knowledge), each advance points toward new questions. For society, the imperfect knowledge manifests itself in these unintended costs which provides the opening for further research and advancement on the part of science, which is then adapted and so on. This is the arms race; it is also referred to as a technological imperative. This should not be confused with determinism. Rather, the imperative is to progress along a certain path because of the initial investment in that approach. It is scientific incrementalism. The urge

to screen workers follows this pattern. Confronted with the need to respond to workplace hazards and a growing social interest in the developing screening technology, the logic pointing toward extending its application to a new area is compelling. What better way to adapt to the new environment than through man's essence. The fact that the relevant "science is truly in its infancy,"²⁴ is only a temporary setback. Research continues in the area and the idea remains viable.

The logic of this argument should be familiar. The eugenicists argued that advances in medicine disrupted the evolutionary adaptive process and necessitated human intervention to take nature's place. Workplace screening is economic eugenics. Mankind changed the environment and now must ensure a good fit. This could be achieved by changing the environment, but that would mean giving up many advances that most of society wants to keep. For the present, direct manipulation of the body (e.g., changing genetic vulnerability to environmental insult) is unachievable. That leaves identifying the genetic characteristics and assigning people to the environment for which they are most suited.

Does this fit with the screening for disease? Common to all forms of carrier screening are eugenic goals. All seek to minimize the damage that may result from "our genetic load." In one case the damage results from nature, prompted by human procreation, and in the other through more forceful human intervention triggering an otherwise latent condition. Workplace screening was described as part of a search to improve the fit between man and his environment. Is that true for

disease screening as well? Essentially, it is. In this case best fit is defined as no genetic disease. Given the advances in medicine, whatever side benefits may accrue to carrier status can be taken over by medicine (e.g., someone with sickle cell trait is more resistant to malaria than others). The implicit argument is that everyone is better off without it: the child, the parents, and the society. What is normal (no "disease") is what is good and what is good is what is desirable. It is, however, the goal of normality rather than the evolutionary laden eugenics that guides this practice.

NOTES

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3. U.S. President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, Screening and Counseling for Genetic Conditions: A Report on the Ethical, Social, and Legal Implications of Genetic Screening, Counseling, and Education Programs (Washington, D.C.: Government Printing Office, 1983), pp. 27-31. (hereafter referred to as President's Commission).
4. W.A. Hogge, S.A. Schonberg, and M.S. Golbus, "Chorionic Villus Sampling: Experience of the First 1000 Cases," American Journal of Obstetrics and Gynecology 154 (June 1986):1249.
5. Hogge, Schonberg, and Golbus, p. 1250.
6. Michael K. McCormick, "Screening for Genetic Traits and Disease," American Family Physician (1981):158.
7. Gleitman v. Cosgrove, 227 A 2d 689 (1967).
8. Gleitman v. Cosgrove, p. 692.
9. Gleitman v. Cosgrove, p. 692.
10. Gleitman v. Cosgrove, p. 693.
11. Gleitman v. Cosgrove, p. 693.
12. Gleitman v. Cosgrove, p. 704.
13. Gleitman v. Cosgrove, p. 704.
14. Gleitman v. Cosgrove, pp. 704-6.
15. Gleitman v. Cosgrove, p. 693.
16. Roe v. Wade, 410 U.S. 113 (1973).

17. Jacobs v. Theimer, 519 SW 2d 846 (Tx, 1975); Dumer v. St. Michael's Hospital, 233 NW 2d 372 (Wisc, 1975).
18. Jacobs v. Theimer, p. 849.
19. Berman v. Allan, 404 A 2d 8 (NJ, 1979) and Dumer v. St. Michael's Hospital, 233 NW 2d 372 (Wisc, 1975).
20. Elliot v. Brown, 361 So 2d 546 (Ala, 1978); Becker v. Schwartz, 386 NE 2d 807 (NY, 1978); Strohmaier v. Associates of Obstetrics and Gynecology, 332 NW 2d 432 (Mich, 1982); Goldberg by and through Goldberg v. Ruskin, 471 NE 2d 530 (Ill, 1984).
21. Howard v. Leichner, 366 NE 2d 64, 67.
22. Elliot v. Brown, p. 548.
23. In re Grady, 426 A 2d 467 (NJ, 1981).
24. Goldberg by and through Goldberg v. Ruskin, p. 534.
25. Turpin v. Sortini, 643 P 2d 954 (Calif, 1982) and in Procanik by Procanik v. Cillo, 478 A 2d 755 (NJ, 1984) the New Jersey Supreme Court accepted the extraordinary expenses argument on behalf of the infant.
26. Turpin v. Sortini, p. 965.
27. Turpin v. Sortini, p. 965.
28. Berman v. Allan, p. 19.
29. A specific recommendation that Osborn would probably have rejected.
30. Harbeson v. Park-Davis, 656 P 2d 483, 491.
31. Giandomenic Majone, "Technological Assessment in a Dialectic Key," Public Administration Review 38 (January 1978):52-58. In his article, Majone distinguished between the laboratory state and the social application of a technology. Once a technology is thrust into the institutions of the society and the skills of those operating it, a technology which works in a laboratory (effective technology) may fail in the social context (inefficient). Majone concluded that it is necessary to assess institutions as well as technologies.

32. This is what the Eberhardy court warned against. The social setting cannot be eliminated from the application of a technology. The Matter of the Guardianship of Eberhardy, 307 NW 2d 881 (Wisc, 1981)
33. Robert Steinbrook, "In California, Voluntary Mass Prenatal Screening," The Hasting Center Report 16 (October 1986):5-7.
34. Kristin Luker, Abortion and the Politics of Motherhood (Berkeley: University of California Press, 1984), p. 236.
35. Steinbrook, p. 6.
36. Steinbrook, p. 5
37. Steinbrook, p. 7.
38. President's Commission, pp. 27-31.
39. Steinbrook, p. 5.
40. "Normal human functioning depends upon the co-ordinated activities of many enzymes and other proteins necessary for proper cellular activity and structure. Thus, a mutation that results in the absence or abnormality of an enzyme or other protein interrupts this co-ordination and can lead to a metabolic disorder." President's Commission, p. 12.
41. Rowley, p. 139.
42. In a survey conducted by the author for this work, forty-three of those surveyed responded.
43. President's Commission, pp. 12-13.
44. President's Commission, pp. 13-15.
45. U.S. National Academy of Sciences, National Research Council Committee for the Study of Inborn Errors of Metabolism, Genetic Screening: Programs, Principles, and Research, (Washington, D.C.: Government Printing Office, 1975), p. 23 (hereafter referred to as Genetic Screening: Programs, Principles, and Research)
46. President's Commission, p. 14.
47. Robert H. Blank, Redefining Human Life: Reproductive Technology and Social Policy (Boulder, Colo: Westview Press, 1984), p. 60.
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49. President's Commission, p. 14; Blank, p. 60.
50. Rowley, p. 139.
51. Harvey Levy, "Editorial," American Journal of Public Health 72 (1982):1320.
52. Levy, p. 1320.
53. See Tabitha Powledge, "Genetic Screening as a Political and Social Development," in Ethical, Social and Legal Dimensions of Screening for Human Genetic Disease, ed. Daniel Bersma (New York: Stratton Intercontinental Medical Book Corporation, 1974) and Genetic Screening: Programs, Principles, and Research.
54. Genetic Screening: Programs, Principles, and Research.
55. President's Commission, p. 19.
56. President's Commission, p. 19.
57. Rowley, p. 141.
58. National Foundation p. 37.
59. U.S. Congress, House, Committee on Interstate and Foreign Commerce, Research, Treatment and Prevention of Sickle Cell Anemia, Hearing before the Subcommittee on Public Health, 92nd Cong., 1st sess., 1971 and U.S. Congress, Senate, Committee on Labor and Welfare, Amendments to Revise Programs for Sickle Cell Anemia and other Genetic Diseases, 94th Cong., 1st sess., 1975.
60. Genetic Screening: Programs, Principles, and Research, pp. 120-3.
61. PL 92-294, 86 Stat. 136 (1972).
62. National Genetic Diseases Act, PL 94-278, 90 Stat. 407 (1976).
63. PL 95-626, 92 Stat. 3583 (1978).
64. President's Commission, pp. 31-34.
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66. James S. Thompson and Margaret W. Thompson, Genetics in Medicine, 3rd Edition. (Philadelphia: W.B. Saunders Co., 1980), p. 336.

67. U.S. Office of Technology Assessment, The Role of Genetic Testing in the Prevention of Occupational Disease (Washington, D. C.: Government Printing Office, 1983), p. 91; (hereafter referred to as OTA).
68. OTA, pp. 90-1 and 93-4.
69. OTA, pp. 34-5.
70. The nine companies are: Mobil Oil Corporation, Firestone Tire and Rubber Company, E.I. du Pont de Nemours and Company, Monsanto Company, Atlantic Richfield Company, Dow Chemical USA, Eastman Kodak Company, Exxon Corporation, and American Cyanamid Company.
71. OTA, p. 35.
72. Deborah Schechter, "Genetic Screening in the Workplace: Though Becoming More Prevelent, These Tests Raise Legal, Scientific and Ethical Problems Which Remain Unresolved," Occupational Health and Safety 52 (April 1983):9-12.
73. OTA, p. 99.
74. OTA, p. 98.

CHAPTER IV

THE BODY POLITIC

The eugenic legacy, although not dominant, is important. It kept alive an interest in shaping and controlling the nature of future generations and focused concerns on deviations from a genetically normal body (either physical or mental normality). But what both case studies present is the greater importance of science and technology in shaping the events. This occurred in several ways. First, science provided a more exact understanding of the eugenicist's concerns. Genetic knowledge illuminated the nature and root of the frailties (enabling a eugenicist to discriminate meaningfully between a condition capable of being passed on to offspring (and thus important to the eugenicist) and one specific to the individual (theoretically of no eugenic importance)) and also provided tools of identification and action that made this knowledge of practical importance. But this led to another influence of science where the application of science changed the issue. This took two forms in this study. First, eugenics became buried in genetics. This was part of the Osborn/Muller strategy.¹ As a result eugenics can only be de facto, no longer an explicit policy. This accounts for some genetic screening programs' diseugenic consequences (i.e., permitting the passing on of defective genes). The genetic research and application were defended in terms of science's social value: paralleling the logic used to defend the application of physics. For

this reason, the wrongful birth court cases² could extend the most successful eugenic recommendation (genetic screening) while denying the eugenic dimension. The consequence was that political controversies were fought on noneugenic terms. The resolutions to these conflicts, too, were not eugenically based. Slowly, then, the association with science transformed the eugenic programs into ones dominated by the politics of technology: applying the fruits of science and then coping with the results.

This transformation is the change reflected in the movement from eugenic sterilization to the politics of genetic screening and the technocratic use of sterilization. This became the political battleground: the means to attain social goals and the reason for the nature of the political reaction. The means side of the equation is reflected in the modest trend toward the use of sterilization as a tool to maintain control over the mentally impaired as their legal status changed. It is also reflected in prenatal screening and the response to the interest group pressure that brought about the carrier screening programs. The political reaction centered on the degree and permanence of the intervention in the sterilization cases; the status of abortion; and concerns over stigmatization based upon the fact that genetic screening provides such constitutive knowledge of an individual's biological being. In general, these would not be controversial to the eugenicist, attesting to the extent eugenics has been removed from the calculus.

This political science that developed contains several elements. First is the eugenic background. Second is the increased responsibilities placed on the social system as a result of the use of its increased capabilities. Third, the programs together provide an institutional context within which politics occurs and which will shape future decisions, in particular those over which new technologies to employ. Finally present is reductionist tendencies.

I

The hopes of Osborn and the modern eugenicists of a eugenic revival or culture has not been demonstrated in the preceding two chapters. What is demonstrated is the urge to control and the search for the most effective means of control. Beginning with sterilization, the most significant aspects were the state court cases extending sterilization to the mentally impaired and the developments in the area of reversible sterilization. The former represents the growing legitimacy of the use of sterilization to control, even in cases when voluntary consent is not possible. This last point is important because voluntary consent has been a central issue and, as the federal court in the Relf³ case illustrated, a key obstacle to eugenic sterilization. The Grady⁴ court went to great lengths to hide the fact of state imposed sterilization, but this charade failed. Significantly, the strong dissent by the Wisconsin Supreme Court⁵ did not oppose the policy, per se, only the location of the decision, namely in the courts. These developments suggest rather than proclaim a trend, but the suggestion

seems plausible given the 1960's legislative interest in linking sterilization to welfare and the abuse of sterilization within the welfare system.

The anecdotal and statistical evidence pointing toward sterilization abuse directed against those on welfare is serious yet does not constitute the new economic eugenics Julius Paul envisioned.⁶ Rather, it was used for social (in this case largely economic) purposes. The fact that sterilization was chosen illustrates two factors working together, which in turn create a third. First, in many cases the issue was reproduction, and sterilization provided the easiest solution (the "technical fix"). A second factor, relevant in the Relf and Grady cases, was the eugenic legacy which provided precedent for using sterilization in the case of mental defectives. These two blended together to create a third, "politics place[ing our] existence as a living being in question."⁷ In other words, the increasingly sophisticated technology joined with the eugenic focus on genes to create a willingness to treat the body as an object of political activity to the degree of shaping the development of future generations, in this case by denying someone the ability to contribute to it. This argument does not imply that sterilization was inevitable, only that it was available and a socially accepted technique (independent of contextual acceptance).

The line of court cases⁸ on sterilizing the mentally impaired embodied the technocratic focus of sterilization's rejuvenation and served to ratify its status. How else can one explain granting

sterilization constitutional status and, even more absurdly, as part of the privacy right? For all its reasonableness as a policy compromise, the Grady decision represents the legitimization of using biological means to address political questions. The key is not the status granted sterilization, but the fact that the court concluded that it must aid Grady in exercising that right. The court granted the political system permission to exercise surveillance over and possibly act upon Grady's biological life. The sleight of hand contained in the "best interests" position is that her interests and the state's converge. Of all the abuses or misuses of sterilization discussed, this is the worst because it is a lie. In an attempt to make available for public policy a technique, the courts resorted to subterfuge. It accepted a political practice by denying its political nature. This sleight of hand reveals the difference between technocratic politics which denies politics and eugenic politics which accepts politics.

In the area of sterilization, then, one finds two trends converging. First is the revitalized interest in sterilization as a formal (Grady) or informal (welfare abuse) policy tool and second is the growing acceptance of sterilization as a means of contraception. Certainly the growing acceptance of the technique's routine use will re-enforce its legitimacy as a policy tool. What threatens to make this trend a matter of concern is the improvements in reversible sterilization. This offers the possibility of precise and effective control. If a reversible sterilization technology develops with fewer problems than Depo provero, then the use of sterilization could easily

be extended on a routine basis to rapists or welfare clients (especially informally by the doctors). Although each of these could be defended on its own terms, by viewing sterilization as a technique of power, the different practices become linked. They share the strategy of using the body to achieve social goals. In the case of both rape and the family life of the mentally impaired, a biological dimension exists to the problem but not one that demands a biological approach to its solution. The virtue of the body as the means to address these issues, however, is that it is administratively neater and the predictable outcome is more certain than social or even psychological remedies.

In sum, sterilization has, for the moment, become a part of political issues and battles greater than eugenics. Its value is seen in its ability to be a technical fix. While its crude edge has been blunted, it remains a part of and illustrates those political battles which are waged on and through the body.

What emerged from the study of sterilization was that eugenics and the politics of technology work together. The product of this relationship is making the body the object of politics. This partnership becomes more evident in the material on genetic screening. What develops is the outlines of a system through which an increasingly exacting control over the body becomes possible.

The family planning function common to the three types of screening raises an important issue: the extent to which the technique's ability to extend our capabilities also extends our choices and responsibilities. Prenatal screening enables us to know characteristics

of our children early in their development, which in turn offers more choices than previously existed. These choices, however, bring with them new responsibilities. On the one hand the doctors must now offer the advantages of the techniques; on the other hand, this information enhances an ability to act on the revealed fetus. The status of the fetus becomes our active responsibility.

This form of screening exemplifies the processes that Osborn hoped would materialize. The patients undertook the screening in order to determine the status of the fetus. Many would abort if the fetus did not fit their desires. While the parents act out of quality of life concerns (including the inability to bear the extraordinary expenses that an impaired infant requires) their actions also serve eugenic ends. Eugenic goals "under a name other than eugenics."⁹ But this controversy is not eugenic. Social problems (the care and treatment of the mentally and physically impaired; the quality of family life) are being addressed medically. The controversy is over the appropriateness of this strategy and its current manifestation, abortion. Concern over deleterious genes receives scant attention. In this case, the responsibilities carried with the extended choice transform the issue into a debate over the moral dimension of the form of action following from the technique's application. At present this is abortion, but generally it centers on the enhanced ability provided by the technique to define and act on quality of life concerns. The issue itself is part of a strategy which seeks to achieve social goals through the instrumental treatment of life. Eugenics is but a subset of this approach.

While prenatal screening produces eugenic outcomes, neonatal screening is diseugenic. This results from its assistance in the passing on of deleterious genes onto future generations. Begun as a routine public health program the consequences of its success, however, placed upon the government an expanding role in genetic management. This took three forms. First, the success of the PKU program encouraged the expansion of neonatal screening to other diseases. Second, because not all diseases have cures (e.g., sickle cell anemia), the program extends to research as well as public health. Finally, the programs extend into the adult lives of those screened. The infants successfully treated for PKU, must be monitored and then counseled when they reach reproductive age. Most of the states have or are developing programs to collect and maintain this information. In sum, the responsibilities extended relate to an enhanced ability to identify, record, and monitor individuals' genetic status. This sounds more sinister than it has been in practice. But what is important is the extent to which it increases the state's focus on genetic matters and provides an institutional capacity to act.

Carrier screening is the form of screening with the most potential to aid in the eugenic approach to reproduction. It can identify the genetic quality of surrogate mothers or AID donors. It would certainly be employed in the Buck Rogers' world of cloning. But when it was put into a systematic program, it was in response to ethnic interest group politics. Since the capability existed to identify those who might produce a child suffering from an ethnic specific disease, the

reasoning went, then there existed a public responsibility to use it. As was the case for neonatal screening, this is not particularly remarkable other than its break from strict eugenics. These diseases are genetically based and can be best addressed genetically. Carrier screening, however, has been extended beyond this level to the workplace and the ability to address biologically other social concerns (e.g., the link between smoking and disease) is rapidly developing. This expansion betrays an interest in the technique growing out of a willingness to achieve social goals by acting upon the body. In sum, this technique is developing in two ways. First, following its eugenic heritage, it provides a vehicle and partial administrative structure to promote eugenic reproduction, although instituted for noneugenic reasons. Next, its technocratic dimension offers an ability to exercise exacting control over individuals as they relate to various social concerns (e.g., workplace insults, drinking, smoking, drugs).

Hastily developed programs that crept beyond their original scope characterized neonatal screening as well. PKU screening was introduced before it had been proven effective and before the diet was fully tested. But the importance of that form of screening includes the legitimacy it helped confer on neonatal screening, the role for public health in that area, and its extension into maternal PKU programs. In other words, even though the screening is narrowly applicable in its early stages, lessons learned from its use, consequences resulting from its successes, and scientific developments around it combine to transform the program. Carrier screening also exemplifies this.

Beginning as a means to identify blacks or Jews at risk, early programs evolved into part research, part public health programs. The technique is now considered for use in the workplace to provide a more detailed portrait of job candidates and as a means to improve AID through examining the donor's genetic make-up. Introduced in one context it not only transformed that but also expanded into new areas. What holds them all together is focusing attention at the level of genes.

The fact that a technical system was in place made it easier to use the same approach to expand into new areas. In fact, this exemplifies a central issue in the study of technology's political role. According to one student of technological politics, political theorist Langdon Winner, the lasting political importance of technology is not its original adoption, but rather the context it enters and helps to create. He stated this as follows:

I would not deny that there are any number of factors that go into the original and continued employment of these technical ensembles. . . . My question is, however, In what technological context do such systems themselves operate and what imperatives do they feel obliged to obey? That one employs something at all far outweighs (and often obliterates) the matter of how one employs it.¹⁰

Genetic screening provides an institutional setting within which the genetic knowledge can be identified, transmitted to the public, and used. In this process, the status of the body becomes important. No longer are we simply manipulating atoms or other inert objects; now the object of our attention is living and within us: in fact in one sense it defines us. The body, the natural laboratory, is the subject of scientific investigation in the same way that an atom is in physics. By

defining the body clinically and instrumentally in order to bring it under the powerful gaze of science, shaping or repairing people to serve a variety of interests becomes possible.

Of course, science's gaze produces many benefits. From the individual's perspective, living as a PKU mother is preferable to the retardation that results from failing to treat her as an infant. No one would suggest withdrawing into the Luddite's worldview. But the too ready acceptance of these techniques may produce unintended problems. One is the tendency to reduce issues to scientific or technical terms. The danger inherent in genetic technologies involves explaining disease or birth defects simply in scientific or medical terms which implies a scientific or medical response. Marc Lappe elaborates:

I would not attempt to deny scientific or genetically verified realities. . . . It is the social institutions that we develop to respond to those realities when they are verified that I'm concerned with. The rapid appropriation of a genetic model for which the first solution might be sterilization of carriers may not be the most moral way of approaching a problem of a carrier status for a significant gene.¹¹

Concerns regarding workplace screening stem partly from this factor. Defining the risk of workplace insults in terms of the body's reaction to chemicals reduces the issue to one of science, then genetic therapy or social exclusion makes sense. If the companies had maintained the issue at this level of understanding (which all claim they did not) this would be an example of the genetic model at its purest. While employers have not yet reduced policy to the level of genes, the courts have. The wrongful birth cases have required the option of genetic testing in order that all technical remedies are available. The Gleitman¹² court's

reliance on a policy favoring life is a rejection of the genetic model but the legalizing of abortion and the subsequent developments in tort law guaranteeing the genetic option have enhanced the model's stature. Of course it is not accepted without qualification, but its imperatives are ascending.

The issue of eugenics cannot be dropped too easily. Winner, in fact, does provide grounds for dismissing a deterministic eugenics argument but not eugenics entirely. Genetic screening is of eugenic origin and often works to promote eugenic ends. But, in practice, it has become a technological issue subsuming its eugenic dimension to that of genetics. The fact of deployment has been important in that the institutional context transcended the eugenic dimension.

Once the technique is introduced to solve one problem, it expands to deal with new ones. The dangers this brings with it are of losing sight of broader social issues and reducing the subject to a technical issue and, once that is accomplished, falling prey to the narrowing blinders of a technology. Within the technical world of prenatal screening, abortion should not be a problem. Abortion's controversy is social. But it carries over to the screening. The problem occurs because of the context, health care, within which the techniques are used. It is presented as a part of public health (and the doctors pressured into making it available) while the leading remedy to an identified problem is a deeply politicized issue that some may consider murder. The two practices cannot be completely separated yet within the world of health care, the politicized world of abortion makes

no sense. This is the same trap waiting to be sprung in the workplace. Why should it be controversial to identify those whose genes predispose them to risk? Is not this to their advantage? If the issue is simply technical, the answer is yes. The technical focus blinds its participants to those considerations outside of which the technique is programmed to handle. At the same time, its power is also obvious and its potential applications wide (e.g., Tay-Sachs, AID, workplace). The imperative that Winner questioned is to identify even more precisely more characteristics of our genes that are relevant in the modern (post)industrial world. That is reductionism, and moral values exist at which we may have to blink in order to expand the technique.

II

Although the application of scientific advances is rarely denied, it is worth proceeding as if denial were possible. The current focus on regulation and the prudent introduction of new techniques is responsible public policy and beneficial at the important level of the individual, but it obscures broader consequences and misses the contextual concern raised by Winner.

After minimizing the direct influence of eugenics on recent events, it must be acknowledged that one of Muller's strategies is rapidly developing. He hoped to promote eugenic reproduction and recognized that this would mean separating love and reproduction.¹³ Although this is not the necessary result of a systematic and expanded use of genetic screening, it is likely. Muller wanted to make the break

in order to plan birth, but today that is not the sole motivation. Instead it grows from the frustration of infertility as well as from those carrying deleterious genes, such as Tay-Sachs.

Changes along these lines are already apparent. Surrogate parenting has grown in acceptance and, as the Baby M case¹⁴ confirmed, the definition of a parent has changed. The natural mother was denied her child at birth. Certainly "parent" is a socially constituted term and it appears that as technology becomes more effective, pressure is applied to redefine the term. In this case, love and reproduction were disconnected. Love and birth remained, but the act of reproduction was clinical. If the fertility problem resides with the male, AID is a possible remedy. This too breaks the love-reproduction relationship, but little else. In both cases, genetic screening would make the techniques more effective, in the sense of avoiding error.

Liberal societies usually encourage the application of technologies when, as in these situations, they appear to respond to a social need (where social need is defined as the sum of individual needs). But what distinguishes these techniques from others--nuclear power, automobiles--is that they act on and through the person. By opening up the body too completely to science, society risks promoting an instrumental understanding of the human: treating the person as a machine. This is the technical context into which new techniques--or refinements of old ones--enter. In the case of PKU screening it is appropriate. But the controversies surrounding abortion, surrogate

parenting, and non-voluntary sterilization indicate that it is not always appropriate or acceptable.

At stake is society's conception of its children and the family. The promotion of genetic technology rests on the desire to ensure the best quality of life possible for children and their families. This motivation is not entirely unselfish. Concern over expenses involved in raising someone impaired, the psychological trauma felt by parents which may interfere with their ability to be a good parent are all part of this concern. In fact, they are the reasons the courts began to move toward the wrongful birth position. But the approach developing in order to fulfill this responsibility urges that we do all that is technically and humanly feasible to ensure the good life. Careful planning, which would include screening and maybe even the use of donors, is a logical extension of this and offers a more precise vehicle to the desired end. This is not a world without love, but it is one willing to break the love-reproduction bond. This perspective has been accepted by many of the courts, usually in the name of quality of life considerations. It supports the Grady decision, the acceptance of wrongful birth cases, and the initial Baby M decision. It is also consistent with (although not derived from) Osborn's quality of life concerns.¹⁵

But the instrumental view of life this view contains can extend beyond its quality of life concerns. Once instrumental manipulation is accepted in order to minimize natural suffering or hardship, the practices gain social acceptance. This is the importance of the

technical context. If their use to eliminate natural handicaps is legitimate, why not social ones, especially those with significant biological dimensions?

Present here is a difficult dilemma raised by these issues. Unquestionably many of the screening programs help individuals. Many would live longer and happier lives if they knew what dangers their lifestyle might increase. But the step from naturally caused problems to matters of lifestyle expands the aspects of life that are reduced to technical issues. Given the nature of these technologies, it also focuses responsibility on the individual. It allows for more exacting control. This is a problematic approach for the conditions triggered by lifestyle or social practices. The clear health benefits run up against the instrumental, technical perspective the practices spread in their wake.

The Catholic Church, in its Instruction on Bioethics,¹⁶ recognized the extent to which the instrumental treatment of the person was spreading throughout society. In this document, the Church confined its analysis to reproductive issues. Although it is not a useful policy document, the Instruction does identify several important issues at stake. Briefly, it discusses issues of control, spirit, and standards. The Church argues that the technological approach to reproduction shifts control from God and the family to scientists and technology. It transforms a human issue into a technical one. For example:

Homologous [in vitro fertilization and embryo transfer] is brought about outside the bodies of the couple through actions of third parties whose competence and technical activity determine the

success of the procedure. Such fertilization entrusts the life and identity of the embryo into the power of doctors and biologists and establishes the domination of technology over the origin and destiny of the human person. Such a relationship of domination is in itself contrary to the dignity and equality that must be common to parents and children.¹⁷

The Church objects to two aspects of the process. First, the doctors must determine which embryos are strongest and should be implanted. The remainder are destroyed. By what standards are these decisions to be made? What special competence does a doctor possess that empowers him in this case? According to the Instruction, "No biologist or doctor can reasonably claim, by virtue of his scientific competence, to be able to decide about people's origin and destiny."¹⁸ Second, it warns about the dehumanizing effect of these techniques. The instrumental treatment of the body means the instrumental treatment of the person. According to the Church:

Thus, in the body and through the body, one touches the person himself in his concrete reality. To respect the dignity of man consequently amounts to safeguarding this identity of the man corpore et anima unus.¹⁹

Even after excepting the Church's position and accepting the legitimacy of the reproductive technologies, this concern is real. Science, investigating the body, treats the person as an object of nature, removing any soul (secularly or sectarianly understood). The purpose of science is to solve the mysteries of nature: in this case, demystifying the human animal. Thus, to accept the legitimacy of these techniques is to confer on this endeavor the legitimacy of science. In other words, accepting the strategy of addressing an issue through a technical means (e.g., screening) lends credence to understanding the problem as

technical, meaning amenable to science. If it can be technically addressed, it should be. The loss of control found here is spiritual (from the Church's perspective) or human (in the secular view).

Control carries with it another meaning. The Church focused on technical imperatives (and technologists) replacing either God's or Man's ability to shape human destiny. But increasing the scope of the issues which can be addressed through an individual's body increases the ability of those in power (public or private power) to adapt man to the social environment. This means that the social and economic infrastructure does not need to be changed, rather people can be forced to adapt to it. Again, this is the issue at stake in workplace screening and any proposals to extend screening to identify those susceptible to hazards resulting from lifestyle. But it is also applicable to the reproductive technologies. At present the concern of those promoting carrier screening or seeking prenatal screening are genetically linked diseases. It is not a great leap, however, to shift the concern to include other genetically identifiable problems. Now control would occur at two stages. One would be in adult life--carrier screening to identify a person's susceptibilities to hazards. Added to this would be a reproductive strategy to promote the gene lines most resistant to environmental insults. This could be achieved through fine-tuned reproduction using AID, surrogates, in vitro fertilization, and embryo transfers. Both donors and recipients' genetic characteristics would be examined and matched. Ideally, these decisions would be made routinely with individuals responding to social norms.

These sorts of environmental developments could be attempted through tax incentives, different fee structures for health care packages,²⁰ or public education programs identifying the problems, stating why they are undesirable, and then offering the genetic services.

The purpose of speculation is not to raise fears but to try and draw the contours of the developing technological context. To summarize, it is characterized by a technical understanding of the body and its instrumental treatment. While developing out of legitimate public health considerations and a search for an improved quality of life for both parents and children, its successful implementation changes social norms and carries with it the need to establish standards. It focuses on the individual which risks shifting attention away from social factors to the isolated individual. Finally, against the technical expertise of science, the individual is in a weakened position to question the appropriateness of the strategy. This discussion does not resolve the dilemma, but raises it. In a liberal democracy, that is all one can ask.

III

The preceding section brought to the surface concerns over the lingering and indirect implications of genetic techniques. This reflects the same concerns over the slippery slope between therapy and breeding raised at the end of Chapter One. Pushed to their extreme, the concerns over the new techniques could lead to a neo-ludditism. This response is not justified by events to date. More importantly, it is an

impractical response given the American culture. On the other hand, a utilitarian or technocratic acceptance of technology misses the cautionary tales focusing on the extended capabilities and responsibilities brought on by the techniques. A technology introduced as a solution to a present problem may extend to situations unforeseen when it was first introduced. To this extent, it helps shape events.

To the practically minded person who recognizes the truth in each position, but is unwilling to withdraw in despair, it is necessary to find a path through the technical minefield. To help chart the course, it may help to focus on the decision-makers and how different decision-makers bring a different bias to the issues.

Leaving the decision to use and when to use present and developing techniques at the level of the individual involves two sets of actors. First is the doctor-patient tandem. They blend together a health perspective with the individuals' value judgments on issues involving the sanctity and quality of life. It is at this level that religious values or secularly derived moral codes will be most telling. The doctor may serve as a conduit through which the limits of technology can be passed to the parents. Certainly the doctor as a recognized and respected expert will generally receive a privileged position in this dialogue. But the extent of this privilege will vary depending on the parents' values. Those whose world view presents all life, no matter what its condition, as sacred provide strict limits on which technical applications are acceptable. Those who act out of concern over the child's quality of life--and these decisions often resemble situational

ethics--will necessarily work closely with the physician in order to determine the range of options, their consequences, and probability. These different outlooks guarantee that, taken as a whole, decisions made at this level will vary and in ways inconsistent with each other. This, of course, parallels the experience with abortion.

The outcome of this process is a form of incrementalism.

Individual decisions accumulate into a pattern and the process of accumulation may serve to perpetuate the decisions made. In other words, the repetition of a choice may lend it a form of contextual legitimacy. It is incremental because the legitimacy builds slowly from actions which are motivated by events close at hand, including precedents for the chosen action, but not by an overriding goal with a clear strategy on how to achieve it. This was seen in the slow but steady acceptance of genetic screening. It moved from a technique of choice to the point where it was recognized by courts as a standard element of health care. The problem with this form of incremental acceptance of the technique lies in the existence of the competing world-views within which the techniques appropriateness is evaluated. The legitimacy of the technique that precedent of use provided placed genetic screening in the context of a health care technique that grows out of quality of life concerns. The process through which this ripened sufficiently for the courts to accept it did not provide a forum where the indirect consequences and opportunity costs could be examined. This would involve highlighting its link to abortion at the cost of sanctity

of life values. In sum, the courts sanctified the quality of life perspective.

What gives the fact of incremental decision-making importance is the issue of the mobilization of bias.²¹ How an issue or interest is politically organized (that is, organized in a manner meaningful for political action) determines the political definition of the issue. This includes such considerations as: the relevant actors, the issues to which it is likened, the values at stake, and the range of likely options and outcomes. This is what is meant by bias. Mobilization enters in the choice of organization used to bring the issue to the political agenda and the degree to which the issue is visible (in Schattschneider's terminology, socialized).

Technological incrementalism places the political and social issues at a low level of visibility, although the spectrum of issues present may be wide. Decisions are made privately, between the patient (or parents) and doctor or semi-privately, in conjunction with hospital review committees. The substantive conclusions gain precedential legitimacy as long as they are not challenged. Legitimacy means here that the participants can act with relative autonomy.

The scope and bias of action at this level is varied. As was stated, above, the scope varies between religious/moral constraints or actions and a health care perspective. This can be illustrated by examples from sterilization. The difficult sterilization question is how to deal with those unable to consent voluntarily. A restraining force is a belief in the sanctity of the body and autonomy over

reproductive decisions. This was the unspoken quarrel between Justice Douglas in Skinner²² and Justice Holmes in Buck.²³ On the other side, sterilization provides a technically effective means to achieve the health goal of meaningful contraception. Stating it thusly illustrates how, even at the individual level, broader forces influence the decision. In particular, one finds religion, liberty of choice, normality, and the lure of the technologically sweet. A concern that brought the issue to the attention of the courts was that parents would respond to social pressures defining mental incompetents as descriptively and normatively abnormal. This influence may be exaggerated when a safe and effective technology exists to limit the damage, so to speak, to one generation. A person may fear that the failure to be sterilized (or parents failing to sterilize their incompetent child) may result in personal or social retributions ranging from disapproval to the withdrawal of social benefits (by either the public or the private sector). That these social pressures and concerns over normality exist can be seen in the controversies surrounding decisions to let mentally deficient couples keep children and homosexuals be foster parents.

A second actor is the market. The market regulates access to the health care system. In doing this, it determines the options known and available to an individual. The market may intervene to prevent access. Those who lack health care resources may be sufficiently removed from the health care system so as to be denied knowledge about the techniques; financially denied access; or inadequately socialized to

the values of preventive medicine. If the health or moral value of the technique is considered significant, then the government may intervene to provide, or even mandate, access. This was unsuccessfully attempted in the Baby Jane Doe controversy²⁴ and successfully carried out in the neonatal screening programs.

A second influence of the market focuses on the health care providers. The individual's access to a technology, especially within a system of expertise and technical knowledge as the health care system is, may depend on the provider actually informing the individual of the technology's relevance and availability. The patient may have the finances, appreciate the role of preventive medicine, and be deeply involved in the health care system (e.g., regular care) but unable to partake of its fruits if uninformed. This was the issue in the wrongful birth cases. The government's intervention here resulted from equity concerns.

The pattern of outcomes of private decisions raises a set of concerns that raise the stakes of the process. These issues involve parental rights and responsibilities. A common influence of technology on society is to push existing tendencies further than individuals could or would have pushed them before the introduction of the technique. In the case of the biological/genetic techniques discussed above, this appears to be the nature of their influence. One parental concern is the responsibility toward the fetus, the abortion issue. Prenatal screening provides the parent with increased abilities to control the nature of their offspring. The parents can choose their children's

gender and can monitor (within limits) their physical and mental development. This new ability confers onto the parents the responsibility of making judgments concerning quality of their children's life. The wrongful birth cases can be understood as a willingness to provide the parents with the opportunity to make these choices. The long-term concern centers on whether this ability is turned into an expected or optional parental responsibility.

Certainly, the wrongful birth cases have ensured that the federalist value of diversity is being honored. But, at this stage of the debate, the principal follow-up technique, abortion, remains a controversial remedy and the diversity of the wrongful birth law raises the concern that the political system sanctions murder (too much access to screening) or repression (too little access). Neither side can be satisfied. The rigidity of the activists' positions on abortion hinders attempts to find a coherent middle ground on prenatal screening. The prenatal screening techniques define abortion as therapeutic and have increased the number of opportunities for choosing therapeutic abortion. But defining abortion as simply therapeutic diminishes the stakes raised by both sides of the abortion debate. It is a moral Right or moral Wrong; in either case the logic impels a single national policy. The desire to provide parents with more information, control, and responsibility over their children's lives has the unintended effect of challenging the rigidity of abortion positions. If abortion is a Wrong, prenatal screening loses legitimacy; if it is a Right, prenatal screening becomes a subsidiary right. Stated this way, attempts to

incrementally introduce new techniques, and exploit the flexibility of federalism, becomes illegitimate. The dilemma this causes was uncovered by Kristin Luker's study which found the public most sympathetic to aborting deformed fetuses but found the right-to-life activists' opposition strongest against this form of abortion.²⁵

To complicate the issue further, the quality of life perspective may result in the fetus developing rights against the parent. The wrongful birth cases imply that the mother should make decisions on behalf of the fetus. What if she fails to avail herself of these techniques? Wrongful life cases, which fall into this extended picture, are against the doctor, but what is to prevent them from extending to the parent who has access to the technologies and refuses to use them? An intermediate issue is the fetus suing the mother for inadequate prenatal care due to smoking, drinking, or drug addiction. In both cases a parental nondecision becomes a decision. The first of these extensions--the fetus suing the mother for failing to use the test--is a logical extension of the wrongful birth position; the second extension is more probable but not necessary. Holding a mother accountable for damage due to drug addiction or even smoking, taken by itself, may be defensible. It extends, nonetheless, the meaning of parental obligations and responsibility. Although the specifics of court decisions may be discrete and applied narrowly, the trickle down impact of an evolving understanding of parental responsibility may not. The decision-making forum cannot take into account how the new responsibilities effect other issues (such as abortion) and the fact

that the decisions are state based may have the effect of widely diverging standards. In an issue such as this, the wrong, to those who see it as such, is of such a moral nature that allowing it in some cases and not others means the system is implicated by the wrong because it is tolerated at all.

To summarize, decisions left to the individual will, on the whole, promote the flexibility that individual choice implies; the decision's low level of visibility may contain the consequences, in particular moral consequences of the decision; and the incremental decision-making may allow the society to slowly become educated on the techniques and their implications while it limits the ability to turn back. On the other hand, because the decision must come from within the individual it is subject to internalized social values, including religious/moral codes, learned health care values and opportunities, and concerns over normality. Finally, the importance of many of these values to individuals and the incompatibility of the full range of decisions made means that pressure will be placed to raise the private decision to a public issue. Most often this has resulted in judicial involvement. Given the propensity to socialize the conflict, the next set of questions deals with how much to socialize it and the desirable scope and bias of the new conflict.

Throughout this study, the courts have come under close and critical scrutiny in their attempts to regulate and balance these concerns. The criticisms have centered on the bias of their outcomes. In order to generalize on the advantages and disadvantages of the

courts' role in regulating genetic technologies, it is necessary to identify key institutional factors. Once these are established, it will be possible to examine the scope and bias of judicial policy making in this area.

Courts and legislatures diverge in their approach to governing. The courts must work through reasoned and principled analysis while the elected branches logroll or employ other techniques of bargaining. This difference reflects differing objectives. Arguing this distinction, Dworkin wrote:

Arguments of principle are arguments intended to establish an individual right; arguments of policy are arguments intended to establish a collective goal. Principles are propositions that describe rights; policies are propositions that describe goals. . . . A political right is an individuated political aim. . . . A goal is a nonindividuated political aim, that is, a state of affairs whose specification does not in this way call for any particular opportunity or resource or liberty for particular individuals.²⁶

The bias of the court, therefore, rests in its focus on individuals and in the language of rights.

In the two case studies, the courts were natural institutions for those who employed them. The wrongful birth cases reflected individuals seeking access to a technique. Few of the participants perceived broad social goals at stake. The individuals felt wronged and needed redress. Grady and Relf also addressed individual concerns: they sought protection against applications of technology by authorities. In this context, it is not surprising that the courts have, on the whole, sought to ensure choice in the use of technology. In some cases this has meant expanding its availability, in others, limiting it.

Although it was not the intention of the litigants to set social policy, establishing policy could not be avoided. The Relf case provides a good beginning point. Inevitably this court entered into social policy when it defined the mentally impaired out of the voluntary consent category. Working without a legislative definition of consent, the court established the meaning of an accepted constitutional right (the right to procreate) in a narrowly construed context. Although the finding had broad social policy implications, the court refused to resolve them or look beyond the scope of established governmental regulations. By raising the constitutional issue, however, the court made subsequent attempts to resolve the policy consequences difficult.

This follows Schattschneider's theory that enlarging a conflict changes what the conflict is about. In the cases reviewed, the changes centered around making explicit and public the value and moral issues in dispute: in the case of genetic screening, certifying the issue as one of public health and medical practices; in the sterilization cases, the courts recognized that issues of power and coercion were at stake. Finally, the courts placed the issues into the language of rights. Although significant variations exist among the courts, the incremental movement is toward greater judicial activism in extending access to technology and to do so within the context of rights sets precedent (and therefore defines the bias) in the same way that individual incremental decision-making does. The courts, however, do so in a more public and authoritative manner. One of the characteristics of incremental change is that although it moves forward in small steps, it is difficult to

reverse direction, except incrementally. Here is seen Schattschneider's insight: once the substance of the conflict is changed, the next change is not likely to return to the status quo ante but rather to a new conflict, albeit the offspring of the first two.

Taken as a whole, the Relf court acted responsibly. It focused on the facts before it and evaluated the consequences of governmental practices on an individual. This is what courts should do and can do well. At this point, Dworkin's distinction becomes central. Different objectives imply different institutional roles. The complexity of society, however, means that these roles and goals will overlap. At what point does the presence of the other institution's objectives diminish an institutions responsibilities to pursue its own? Stated differently, did the fact that social policy was involved mean that the Relf court overextended itself? J. Craig Youngblood and Parker Folse, also concerned with identifying boundaries, raised this issue as follows:

Courts govern, and they produce social policy; yet their institutional nature is such that they do not always produce sound social policy, at least as judged from the social scientist's perspective. Their attention to the individual rather than to social conditions generally and their emphasis on principle, even when principle is inadequate to capture the complexity of a social organization, are not conducive to effective policymaking. . . . The dilemma, however, is only apparent. A society that wishes its government to do more than simply make policy--that wishes its government also to accept claims that interfere with the making of policy--must become comfortable with institutions like the American judiciary.²⁷

The bias of Relf was to limit the scope of a technology's application without denying the technology in general and by limiting, but not excluding, the role of elected officials.

Whether or not this decision falls within the acceptable limits of the judicial role depends on how one answers the general question of the role of the court. It is not self-evident that a reasonable man must necessarily find informed consent under these circumstances unreasonable. A federal court in North Carolina, for example, found it reasonable.²⁸ Most courts, however, have begun to follow the activist course set out in Relf and in doing so illustrate the scope and bias of an activist court. The scope in Relf was broad but the substance of the scope resulted from the bias restricting its focus to an individual case. Although it made policy, it worked from the narrower base of its legal context, in this case the constitution, rather than centering on the substance of the policy.

This scope and bias may leave the court as a poor choice to be the institution of first resort in the area of technological application. This is illustrated by the debate between the Grady and Eberhardy courts. The Grady court was unwilling to accept the strong position on consent taken in Relf. Although the court did not argue this directly, it appeared to be motivated by the desire to make sterilization a viable policy option. While working within the language of procreative rights, it sought to keep the option open. Once rejecting this as involuntary sterilization, the court felt compelled to constrain the opportunities for abuse. This was not necessary. The

court could have ruled that sterilization was permissible but that inadequate guidelines existed and then returned the issue to the legislature. This was the Eberhardy resolution. By rejecting this, the court established policy guidelines without reviewing either the past and current practices or the practice and needs of caring for the mentally impaired. These are not considerations central to the determination of rights but are at the core of establishing social goals. Their neglect is also part of the bias of rights oriented and individual centered institutions promulgating broad social policy. This was the thesis of Youngblood and Folsie's argument. Given this position, was it necessary to carry the argument as far as the Grady court did to resolve the issue of rights? If society must accept institutions like the American judiciary, the judiciary must make a good faith effort to stay within its domain. The Relf case illustrates a protection of rights with a minimal intrusion into social policy. Grady only needed to establish the issue of rights and could have left the implementation of its ruling to the legislature. Eberhardy recognized this as a justiciable issue but desired to wait for legislative guidelines as to the policy goals. Once these are established, the court could examine the rules and evaluate their impact on rights. The Grady approach prematurely raises the rights issue and constrains the policy-making institutions from subsequently dealing with these questions. The difference between the scope and bias found in the Eberhardy and Grady approaches is the difference between using the courts as the institution of first or second resort.

Several political consequences follow from an activist court.

By granting the status of right to individual technologies, the question of what general principle is behind that right remains. Did the outcome in Grady really mean that a woman has the right to the most effective contraception? If so, this could severely limit the legislatures' ability to regulate reversible sterilization. This issue resembles the influence of the abortion right on the courts' willingness to accept the wrongful birth position. In each case, a right's scope grows as new capabilities extend the opportunities to apply it. But all the situations are not equivalent. What general principle resides behind these rights? Is it the privacy of the body? The sanctity of the body? The courts need to draw out the arguments more fully and explicitly in order to provide the policy-making institutions with guidance. If the right's scope grows too large, the political system will be handicapped in its attempts to regulate new technologies. At issue here is whether courts should be evaluating techniques or principles.

Another consideration of the activist court, especially one establishing a positive right, is that it further socializes the issue by committing the state to a certain position. This was true of Grady and certainly was true of the wrongful birth cases. Again, the use of the courts as the institution of first resort biased the policy issue. Prenatal screening is one of several technologies whose purpose is to allow potential parents to choose their children. This choice may be zero-sum--to beget or abort--or it may, in the future, allow for remedial work that may change the child's nature (fetal therapy). The

question becomes: to what extent society wishes these to be unregulated opportunities or rights. By linking prenatal screening to the abortion right and imposing the burden on doctors of offering it as routine health care (enforced through malpractice tort law) the courts have limited a legislature's ability to control this issue. It has also placed the state's institutions in the role of ensuring the option of eugenic abortion. Again, this is a consequence of approaching the issue as one of individual rights rather than public policy. The trend by courts to link access to technologies and individual rights has limited the ability to treat the issue of regulating the body--both current and future bodies--as a coherent policy issue. For this reason, the decision by the New Jersey Supreme Court to return the surrogate parenting issue to the legislature is welcome. More surprising, however, was their urging the legislature to look at reproductive technologies as a whole.²⁹ Although the opinion reflects a bias toward allowing access to technology, it also reflects a recognition that these are interrelated and problematic issues of public policy, not principled and individuated questions of rights.

In doing this, they recognize the limits of the courts to resolve the pressures placed on the political system by these techniques. No longer can abortion and abortion guided by prenatal screening be seen as equivalent. The first has many motives; the second is an issue of breeding goals. But a cogent and complete analysis of these connections cannot be undertaken by an institution whose scope is limited by the questions brought to it by the litigants; who must wait

for issues to come; and who lack the institutional capabilities and representational mandate to bring together, debate, evaluate, and conciliate the varied interests and values raised by modern technology.

Once again the argument points toward the legislative nature of these issues. In fact, even if many of the institutional obstacles to the courts could be overcome, these remain legislative matters. This follows from a lesson the text has sought to teach: in subtle ways, technology legislates. It legislates through directing our actions and outlook in a certain manner (in this case, the genetic model and reductionism) and it provides both tools and justifications to extend the technique to issues beyond those initially addressed (e.g., genetic screening for lifestyle conditions). The bias of technology itself raises issues of general public policy. Rights are involved but the problem with the judicial outcomes is that they have treated access to a technology as a right in and of itself. This is, for lack of a better term, "rights reductionism." Rights become specific technologies (abortion, sterilization) rather than substantive or procedural issues of politics (free speech, due process). As is true for technological reductionism, this confuses means and ends. By making the technology itself a right, the courts also institutionalize the public policy embodied in the technology. This concern adds to the problems of judicial governing in this area.

Aside from the limitations of the courts as technology policy-makers, the legislature as an institution has several virtues. Not the least is that it should be more democratically responsive. It is

designed to offer the most complex and complete representation of the various interests and perspectives within the country. As it has developed its system of committees and support organizations, such as the Office of Technology Assessment, it offers the possibility of integrating democratic representation with technical knowledge. This, ideally, results in responsible governance. Compared to the courts, this should allow for a greater representation of all relevant interests and capabilities to place issues into broader policy contexts. Therefore, genetic screening could be considered in conjunction with surrogate parenting and AID programs all of which reflect similar desires to control reproduction for quality of life concerns and implicate important social relationships (love-reproduction) and social institutions (parenting).

Unfortunately, the experience of legislatures uncovered, above, is not promising. What emerged reaffirmed Theodore Lowi's gloomy theory of interest group liberalism.³⁰ Lowi argued that the institutionalization of positive government transformed the role of interest groups from a necessary, but worrisome, aspect of balanced government, to an integral part of government. Groups have played an important part in American political theory. Madison, in his defense of the Constitution, sought multiple and diverse groups to create balanced politics. Representatives would act as a filter capable of transforming narrow social interests into broader political ends, "to refine and enlarge the public views, by passing them through the medium of a chosen body of citizens, whose wisdom may best discern the true interest of

their country."³¹ Implicit in this scheme is distancing the group from the institutions of government.

This contrasts sharply with the modern role of interest groups. Madison's filtering mechanism no longer filters. Rather than the government acting as a means to enlarge private interests, the groups now shape and help define the actions of the government. The place of group politics has shifted from interests organized in the society to groups serving in the government; it has moved from pluralism in the society to pluralism in the government. The consequences for contemporary governing are diffusion of authority and conflict resolution through bargaining. Lowi described this as follows:

Typical American politicians displace and defer and delegate conflict where possible; they face conflict squarely only when they must. Interest-group liberalism offered a justification for keeping major combatants apart and for delegating their conflict as far down the line as possible. It provided a theoretical basis for giving to each according to his claim, the price for which is a reduction of concern for what others are claiming. In other words, it transformed access and logrolling from necessary evil to greater good.³²

Working from this perspective, the legislative process, raised as the proper response to the courts, may not be adequate to its assigned task.

The previous three chapters presented legislatures which chopped the technological issues into instrumental aspects of continuing issues. Early use of sterilization was adopted to meet the eugenicists' fear of immigrants; genetic screening served the needs of public health advocates and ethnic politics. But in no case were technologies treated as active forces drawing links to issues outside of the immediate debate through links forged by the capabilities offered by the technique.

Specifically, the legislatures missed the slide from therapy to breeding. In the case of the early sterilization laws and the Sickle Cell Anemia screening programs, this resulted in bad politics and bad policy. In genetic screening in general, it has dimmed awareness of the qualitative difference between public health screening for genetic diseases and screening for susceptibility to conditions triggered by lifestyle. The rationale for drawing individuals into the latter screening programs must be different from the public health programs due to the greater social dimension of the information sought.

Interest group liberalism claims that governing is dominated by two forces. First is interest groups serving as representatives of the public and second is functional expertise. Together they mobilize a bias which is narrow and technical. Reviewing the substance of the case studies, both forces were dominant. The early screening laws responded to the apparent expertise of the eugenic community which had leading geneticists in prominent positions, lending credibility to their claims. The role of expertise was again apparent in the immigration legislation of 1924 and in Harry Laughlin's advisory position to the House Committee on Immigration and Naturalization. The genetic screening legislation more clearly reflects the functional approach to legislation. The principal actors were interest groups and public health experts who sought to demonstrate the public utility of new technologies and then institutionalize their use. The advisory network developed so as to exclude the quality of life/sanctity of life debate. This is a contentious cleavage in American politics and not one that fits into the

functional arrangement of committees or into the administrative structures. By reducing the issues to technical matters, the politicians were able to skirt what most consider a no-win debate.

It seems reasonable to conclude that reliance on legislatures to resolve issues surrounding the social adoption of new technologies will have certain predictable features. First, the legislatures will not address the genetic issue on its own merits as if it were a discrete policy issue. Instead the issue will be placed into another context. Although this is not an absurd approach, it misses the extent to which the broad issues surrounding breeding can be addressed. The issue will then be delegated to an agency which will re-enforce the narrowing circle of issues and interests addressed. In sum, the legislative process treats genetic technologies as therapeutic techniques. In the fashion of interest group liberalism, the more controversial and problematic issues of how far society should allow refashioning the human essence and issues of normality's social pressures are neglected.

Compared to the courts, the legislatures have succeeded in opening the issues up to democratic scrutiny, but due to their current processes and procedures, they have limited the scope. The visibility and socialization of the issues are expanded but the scope and bias are generally confined to public health or the use of public health for ethnic politics. The shame of this resides in the fact that the failure to question the technologies' appropriateness has given them the stamp of approval by the state. This, no less than treating them as rights,

limits the ability to control their expansion into new areas, whether they be the issues of wrongful birth or workplace screening.

The limitations of this narrow focus can be probed by returning to the issue of modern eugenics raised at the end of Chapter One. The issue of eugenics has haunted this work: frequently lurking beneath the surface but rarely allowing the scrutiny of light. Its ubiquity is inevitable given that the two areas chosen both grew out of the eugenics movement. Eugenic's suspended animation results, in part, from the success of Osborn and those who sought to minimize the intrusiveness of eugenics. By reducing it to an add-on, rather than an issue in its own right, its presence remains but its shape is obscured. In order to tease out the underlying forces at work, Chapter One concluded by contrasting eugenics and genetic engineering. By returning to the issues upon which they were compared, it is possible to see the dimensions missed by the scope and bias of the legislature (although the courts come closer to addressing them) and to review the two areas examined in this work.

Eugenics and engineering were distinguished by their reliance on therapeutic or breeding goals; on an individual or societal focus; and on average or idealized man. Each of these, as well as the non-eugenic/eugenic issue, should be made into a continuum. For each pair, the left end would be the least eugenic. Seen as a whole, the case studies do not move far down the line toward eugenics. They do, however, provide the groundwork necessary if that movement became desirable.

Recent experience with both sterilization and genetic screening has been motivated largely by therapeutic concerns at the individual level. Contraceptive sterilization was done for matters of lifestyle, although in the case of Lee Ann Grady societal motives intruded. They were, however, custodial issues and not issues of breeding. The welfare abuses offered coercive societal motives but, again, they were not breeding concerns and were ultimately deemed illegitimate.

Issues of genetic normality remained but in a muted form. In sharp contrast to the earlier sterilization campaign, the focus on Grady's deviation from normality centered on her ability to exercise judgment, not a concern over the future of the race. The societal issue underlying the Grady controversy was the fate of any offspring she might produce: would they be brought up well? Deviations from average capabilities (maybe due to genetic abnormalities) was the standard against which the need for sterilization was measured. The use of sterilization in order to compensate for a lack of capabilities shares a naturalistic bias with eugenics. Each works on the assumption that the root of the problem is biological and that a biological remedy is therefore appropriate.

Genetic screening, too, falls at the therapeutic end of the spectrum, but closer to breeding than does sterilization. Movement toward the eugenic end of the spectrum is also present on the issues of individual/societal interests and on the average/normality range. This movement results, in large part, from the influence of carrier and prenatal screening. The more precise and powerful the technique, the

greater the ability to achieve an idealized norm which moves screening further down the continuum toward eugenics. Moving to the non-eugenic/eugenic continuum, one finds that genetic screening moves closer to eugenics by reaching, at times, a de facto eugenics. This is not the intention of the programs but is an unintended by-product. Screening reaches closer to this than does sterilization because all three continuums work together. Idealized norms play a greater role; societal interests motivate many of the programs, even as they are voluntary and serve individual interests; and therapeutic programs, in particular carrier and prenatal, produce breeding consequences. Each re-enforces the other in terms of de facto eugenics.

When the legislatures treat screening or sterilization as techniques designed to aid existing goals, they miss the movement along these continuums. They also miss the power exercised over nature, and, in particular, the increased activity aimed at defining and achieving an idealized biology. While many of these programs legitimately are public health, failure to identify these underlying themes misses an opportunity to explore them in preparation of future genetic advances. Eugenics may or may not be appropriate policy (Chapter One suggests it may not), but it should not become policy without careful debate and scrutiny.

Even if eugenics is rejected as an explanatory framework for these policies, the issue of power remains. Rather than power through eugenics, the vehicle may be technological faith. This shares with eugenics a naturalistic bias and the accompanying faith in the power of

science. The reason for continuing research in this area is to gain power over genes: to work toward an ideal genetic condition. Business has sought to gain power over the body in order to ensure a healthier workforce (workplace screening). The state has sought power in order to improve the public health to lower medical costs and improve the citizens' quality of life. Finally, the individual desires power in order to ensure a healthy family and/or life.

Two issues stand out in the discussion over power. First, technological advances have provided sophisticated and effective tools to achieve these goals. Furthermore, access is relatively decentralized, enabling a wide range of interested parties the opportunity to employ them. Second, the naturalistic bias re-enforces the notion that these tools are the appropriate approach to take; that they provide meaningful information. Legislative and administrative approaches to technology have blinked at these concerns, instead institutionalizing the incremental decision-making that takes place at the individual level.

In sum, the discussion has proceeded full circle. The individuals have sought out technical solutions to their problems, the courts have obliged and so too have legislatures. Defined by the individual as public health measures, the government has institutionalized the model. Joined with this is the scientific model of controlling and manipulating nature. Missing from the package is a critical eye turned toward the cumulative effect of these techniques and the social and political dimensions to the goals underlying their use.

The technologies provide power, the ability to control. It is necessary to recognize that issues which previously were "an act of God" or "nature's roll of the dice" are now ours to decide. Consequently, it is necessary to demystify the technology and focus on the goals underlying its use. This, however, cannot be done through the language of rights or the language of policy spoken through logrolling.

While the specific applications of the technologies today may be benign social policy, they leave in place the institutional framework for an easy slide into more powerful techniques. This institutional framework consists of a belief that a genetic strategy (naturalistic bias) is a reasonable, fair, and meaningful approach to these issues; the socialization of the public into accepting public health officials' desire to identify and act upon one's genetic characteristics and the appropriateness of our acting individually to shape our genetic future; the courts legitimation of the technologies; and the legislatively mandated legal and administrative structure from which the programs could expand.³³ Inertia is a powerful force. Once these arrangements are in place, it is easier to approach problems through available means than to search for alternative understandings of a problem and the probability that new institutional arrangements will be necessary. These institutional arrangements did not develop out of any plan (unless one accepts the victory of the eugenic hypothesis, which this research has not confirmed). However, a politics dominated by interest groups and logrolling is not well equipped to reflect carefully on the linkages between new political issues and new technologies.

IV

The events presented were not masterminded by deviant scientists in the tradition of either Dr. Strangelove or Dr. Frankenstein. Nor were there conspirators motivated by eugenics. Each movement was a small step related to the previous stage. Castration progressed into sterilization. Sterilization's social application moved from the crude use by the eugenicists to more refined applications under the Grady rule. Genetic screening, too, has worked in steps. Carrier screening, originally hastily applied to pander to interest groups, now is where it belongs: a voluntary health program, coupled with research components. Neonatal screening has slowly expanded to include more diseases and now takes a natural step toward genetic registries in order to continue to treat those afflicted. Prenatal screening has slowly worked into routine health care. Technological incrementalism.

This incremental movement will, in all probability, continue on its present course. This will mean extending the concerns addressed through the body. Because genes are so controlling, they are a prime vehicle and this means the practices will, on occasion, fit the eugenicists' agenda. But there is no evidence to suggest that the role of eugenics will be any greater than the de facto eugenics presented, above. One extension that is likely is an increasingly systematic extension of genetic screening to other genetic techniques, such as AID.³⁴ This means increasingly planned and rationalized birth.

Future research on the applications of biological knowledge needs to examine the applications in light of these questions. The abuses of the early sterilization programs as well as the weaknesses of genetic screening endeavors were addressed, in part, because they were public programs. To what extent are the priorities of which diseases or problems are addressed the result of a social need or profit motive? Can privacy be maintained? Will coercion become a problem? The changing nature of the research and development system indicates that the traditional public policy framework, where the policies are explicitly government policies, is inadequate. Yet, policies on screening and pressures toward rationalized reproduction will persist. What will be harder to find is who or what is or can be in control.

Another concern is privacy. The principal concern here is one of confidentiality. If the scope of managing the body expands, those who carry out the programs will gain significant information about the individual. It is imperative that this be kept confidential.

Privacy cuts in a different direction. As more public policy focuses on the body, to what extent can the individual maintain autonomy? As the possibilities of AID or surrogate parenting become understood or even encouraged, will this subtly limit an individual's ability to control his/her germ line? The concern over autonomy centers on the status of the body. This needs to be examined. The Constitution's Fourth Amendment prohibits unreasonable searches and seizures. This has been interpreted to exclude, as unreasonable, surgery to remove a bullet near the heart but includes the drawing of

blood.³⁵ The state police powers have been extended to include vaccination and sterilization.³⁶ As science and policy's focus moves to the body, its legal status needs to be clarified. This may necessitate its prudent remystification.

Finally, the difficult problem of democratic decision-making on technical issues needs to be addressed. Should the society address workplace insults or lifestyle side effects through screening even if it is the most effective and efficient means? Should the costs and benefits of screening be measured by its genetic consequences or by political considerations developed by the public? These are complex problems, but given the fact that they address the fundamental make-up of individuals they must be democratically resolved. But the record found, above, indicates that the system has been unwilling to examine directly these questions. They are, after all, questions akin to an individual examining his soul. They ask, and the technology demands, that we examine our biological and human essence. Given the contentiousness of these issues, it is not surprising that the one institution, the courts, that occasionally, but incompletely, addressed these issues was the least democratic. Democratic participation and the bias of technology, however, produce competing pressures. The techniques narrow the focus to the individual while the pressures of democratic decision-making are to expand the conflict.³⁷ But the important role played by social standards of normality and the power of the techniques to change ourselves and our self-image necessitates that the expanded conflict be engaged.

Any conclusions drawn from the preceding discussion must recognize that this work served as a cautionary tale more than policy analysis aimed at prescription. How one takes the moral depends, in part, on what is brought to the tale. Freedom of choice expressed through the privacy law, the screening malpractice cases, and the support for the technical fix has been a value the political system sought to enhance. Balanced against this were concerns over normalization, the instrumental treatment of life, and eugenics. It is ironic that so much power to improve the quality of an individual's life has been made available and used under the rubric of liberty but that each extension added to the growing instrumental treatment and understanding of the individual.

A recent example of this is abortion. The nationalization of abortion was, to its supporters, a great strike for liberty. Now, abortion may be applied to micromanage multiple births.³⁸ In this case fetuses, chosen at random, will be aborted in order to enhance the remaining fetus' chances for normal development. The technique moves from providing the woman freedom to control her body in a gross sense to fine-tuning birth. Although the technique remains the same, its extended application highlights its instrumental logic and extends the universe available to our instrumental manipulation.

The criticism leveled against the courts and legislatures in the case studies was their failure to take this ironic twist into account.

But the problems uncovered cannot be blamed simply upon institutions failing to live up to their promise; the problem is also one of perspective. For this reason, recommending institutional reform or a new institutional mix (e.g., a greater role for the Department of Health and Human Services) will not solve the problems.

Before institutional tinkering can work, the influence of science on our values must be recognized and considered. The power of science to change perceptions was stated well by Joseph Haberer:

To be sure, "in most scientific study, questions of good and evil, or right and wrong, play at most a minor and secondary part." Yet questions on the moral and ethical responsibility of science, cannot be relegated to another realm, called politics. Scientific knowledge per se is neither moral nor immoral. Nonetheless, this knowledge does not remain neutral but makes important contributions to human existence--technologically, and, more crucially, because its theories change man's image of himself and later his cosmology.³⁹

Abortion, AID, screening, and sterilization have all developed in such a way as to challenge our traditional biological or social norms. Each developed in a narrow framework, abortion and AID as extraordinary and exceptional practices, sterilization as a private practice, and screening, generally speaking, as part of the public health function of the state. Now abortion will be used to manage pregnancies, AID has made surrogate parenting possible, screening may allow for precise control over the workplace or lifestyles, and sterilization floats in and out of eugenic and welfare politics. Each has become more sophisticated in substance or application. They have entered new institutional arrangements making more human control over human life possible. In sum, the biological sciences have made and strive to

continue to make possible man's ability to change not only his image of himself but also himself. The movement is relentlessly in the direction of removing the randomness of chance.

The political system's response to this must recognize science as the sine qua non of contemporary society. Practically, this will mean recognizing that the laissez-faire model of science is politically unacceptable. Science and the fruits of science, like their industrial predecessor, must be regulated in the public interest. Of course, prudence dictates that this movement be done with care so that science as an institution does not suffer unduly. In order to do this, it is necessary for the political system to view technology and science as more than just a neutral tool to achieve previously agreed upon ends. The transformation of abortion just noted or the application of genetic screening to lifestyle concerns or the use of AID in surrogate parenting illustrate that a tool is capable of creating new ends.

When the political system addresses new technologies it must review their immediate purposes but also remain cognizant of the values they touch. The Congress has begun this process by creating committees whose jurisdiction includes science, as well as creating support institutions to help analyze the social impact of technology. The executive, too, has advisors designated to treat science on its own terms. The trend applies to the courts as well. As was noted, above, the recent Baby M case classified surrogate parenting with other new reproductive techniques, suggesting that the legislature examine their cumulative impact. These actions are among many institutional

recognitions that politics as usual is not adequate. But the most important issue remaining is viewing science as an independent variable. Creating a commission on biotechnology composed of representatives from the policy-making branches, students of science and politics, and those from other callings may help raise the visibility of the educational side of the issue. There is no guarantee that this will produce miraculous transformations, but its virtue, however, is that education and vision are the preconditions for successfully dealing with science and society and commissions have been successful at introducing issues into public discourse.

Relying on the market to regulate these technologies is difficult. Unlike traditional economic products, the currency of technological politics is information which is harder for a market to regulate than widgets. Furthermore, the market takes short-term costs into account but the "costs" of science are often in the future. Working the long-term factors into the short-term will depend upon informed consumers aware of the issues at stake.

In a political system experienced in incremental decision-making, working out ends and exploring the interrelationship between means and ends is difficult. But the need to do this is at the core of a responsible politics of science. The courts have recognized this in some cases but they are not capable of this practice. These are legislative concerns and the central task of American politics will be to convince the voters that their representatives must govern, not logroll. In this system, the responsibility ultimately resides with the

voters since they, through the ballot, express their opinion on the direction and soundness of the political system. Parochial legislation in the area of science reflects the individualistic and possessive view the public has of technology.

NOTES

1. This refers to the modern eugenic strategy which seeks eugenic ends through other means. Most explicitly stated by Frederick Osborn, it sought to change the social environment to include eugenic pressures.
2. See pp. 153-164, above.
3. Relf v. Weinberger, 372 F. Supp. 1196 (DDC, 1974).
4. In re Grady, 426 A 2d 467 (NJ, 1981).
5. Matter of the Guardianship of Eberhardy, 307 NW 2d 88 (Wisc., 1981).
6. Julius Paul, "The Return of Punitive Sterilization Proposals: Current Attacks on Illegitimacy and the AFDC Program," Law and Society Review 3 (1968):77-106.
7. Michel Foucault, The History of Sexuality, Volume I: An Introduction, trans. Robert Hurley (New York: Random House, Vintage Books, 1980), p. 143.
8. See pp. 120-140, above.
9. Frederick Osborn, The Future of Human Heredity: An Introduction to Eugenics in Modern America, (New York: Weybright and Talley, 1968), p. 104.
10. Langdon Winner, Autonomous Technology: Technics-out-of-control as a Theme in Political Thought, (Cambridge: MIT Press, 1977), p. 320; emphasis Winner's.
11. Marc Lappe, "Reflections on the cost of doing science" in "Ethical and Scientific Issues Posed by Human Use of Molecular Genetics," Marc Lappe and Robert Morison, eds., Annals of the New York Academy of Science 265 (1976):110.
12. Gleitman v. Cosgrove, 227 A 2d 689 (NJ, 1967).
13. See Chapter One, pp. 68-69.
14. In the Matter of Baby "M", 525d A 2d 1128 (NJ, 1987); reversed, In the Matter of Baby "M", 537 A 2d 1227 (NJ, 1988).
15. See Chapter One, pp. 50-53.

16. Congregation For the Doctrine of the Faith, Instruction on Respect For Human Life in Its Origin and on the Dignity of Procreation, Translated by Vatican (Boston: Daughters of St. Paul, 1987).
17. Instruction, p. 17.
18. Instruction, p. 9.
19. Instruction, pp. 8-9; reference omitted.
20. It is interesting to observe how the HMO type of health care delivery system offers administrative possibilities to influence social policy. This is especially apparent in the focus on preventive medicine. What is it that we are trying to prevent?
21. E. E. Schattschneider, The Semisovereign People: A Realist's View of Democracy in America (Hinsdale, Ill.: The Dryden Press, 1960).
22. Skinner v. Oklahoma, 316 U.S. 535 (1942).
23. Buck v. Bell, 274 U.S. 200 (1927)
24. Bonnie Steinbock, "Baby Jane Doe In the Courts," The Hastings Center Review 14 (February, 1984):13-19.
25. Kristin Luker, Abortion and the Politics of Motherhood (Berkeley: University of California Press, 1984), p. 236.
26. Ronald Dworkin, Taking Rights Seriously (Cambridge: Harvard University Press, 1977), pp. 90-1.
27. J. Craig Youngblood and Parker C. Folse, "Can Courts Govern? An Inquiry Into Capacity and Purpose," in Governing Through Courts, eds. Richard A.L. Gambitta, Marlynn L. May, and James C. Foster (Beverly Hills: Sage Publications, 1981), pp. 61-2.
28. North Carolina Association For Retarded Children v. State of North Carolina, 420 F. Supp. 451 (DNC, 1976)
29. "Excerpts From Decision By New Jersey Supreme Court in Baby M Case," New York Times, 4 February 1988, p. B6.
30. Theodore Lowi, The End of Liberalism: The Second Republic of the United States, 2nd ed. (New York: W.W. Norton, 1979).
31. Alexander Hamilton, James Madison, and John Jay, The Federalist: Or, The New Constitution, ed. Max Beloff (Oxford: Basil Blackwell, 1948), p. 45.

32. Lowi, p. 55.; emphasis deleted.
33. AIDS testing and drug testing in the workplace represent extensions of this logic. Confining this research to genetic issues is artificial. The technical environment ignores academic boundaries.
34. F. Clarke Fraser and R. Allan Forse, "On Genetic Screening of Donors for Artificial Insemination," American Journal of Medical Genetics 10 (1981):399-405.
35. In Schmerber v. California, 384 U.S. 757 (1966) the Supreme Court ruled that mandatory blood tests for drunk drivers did not constitute unconstitutional self-incrimination. But in Winston v. Lee, 470 US 753 (1985) the Court refused to require surgery in order to remove a bullet from a suspect on the grounds that it violated his right to be secure in his person.
36. Jacobson v. Massachusetts, 197 U.S. 11 (1905) allowed mandatory immunization and Buck v. Bell, 274 U.S. 200 (1927) allowed involuntary sterilization.
37. E. E. Schattschneider, The Semisovereign People.
38. Richard L. Berkowitz, Lauren Lynch, Usha Chitkara, Isabelle A. Wilkens, Karen E. Mehalek, and Emanuel Avarez, "Selective Reduction of Multifetal Pregnancies in the First Trimester", The New England Journal of Medicine 318 (April 21, 1988):1043-1046.
39. Joseph Haberer, Politics and the Community of Science (New York: von Nostrand Reinhold Company, 1969) p. 258.

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