

The New Image of Surveillance and Knowledge-Power: Molecular Politics and The Case of Insurance Companies

Neslihan Cevik, Arizona State University

ABSTRACT

The study argues that modern genetics is a new candidate for modern control. This argument is based on a Foucaultian reading of genomic information. To realize such a reading at the social formation level a 38-question survey was conducted on life and health insurance companies in Ankara, Turkey. The survey, frequencies and factors analysis reveal that gene testing may force companies to re-produce insurance policies on the basis of *molecular risk*, which in turn constitutes *molecular politics* that intensifies the control on the social body and its management.

1.0 INTRODUCTION

In recent decades the social science literature has increasingly turned its attention to the issues raised by advances of gene technology. This new technology, basically, aims to control and manipulate the DNA. Gene manipulation first of all, redefines the humankind on the basis of history of gene pools and perfect machines that genes use in order to survive. Secondly, it re-defines life on a different scale. According to Kay (2000), this new scale is the submicroscopic level, which, he argues² (Kay, 2000: in Rose, 2001: 13), visualizes “life phenomena at the submicroscopic region – between 10^{-6} and 10^{-7} cm.”

The aim of this study is to analyze the impacts of this new submicroscopic vision of life on the human body and on its management, through examining the possible effects of the use of genetic testing by health and life insurance companies. To realize such an aim, the study

² Kay, L. 2000. *Who Wrote The Book of Life?* Stanford, CA: Stanford Uni. Pre, Quoted in Rose, N. 2001. “The Politics of Life Itself.” *Theory, Culture and Society* Vol 18(6): 1-30

combines a Foucaultian reading of genetics with descriptive quantitative analyses. A Foucaultian approach provides the basic theoretical conceptualization of the relation between genomic information and the control on the social body/population on the basis of two themes: a new sort of knowledge-power, molecular knowledge, and a new sort of gaze-power, *molecular surveillance*. On the other hand, descriptive quantitative analysis (factor and frequency analyses) and the survey conducted on life and health insurance companies, demonstrate the affects of molecular surveillance and molecular knowledge at the social formation level.

It is argued that these two structures reveal the genomic information and the molecular risk information of the client. It also is argued that the molecular risk information may force companies to produce new policies that are based on molecular information. On this basis, the study concludes that the new policies transform the Foucaultian bio-politics into molecular politics, which uses molecular information to intensify the control on the social body.

1.1 THE FOUCAULTIAN ARGUMENT

Basically put, a Foucaultian reading of genetic science entails a comprehensive focus on the DNA that does not reduce it into a sole biological entity. Instead the DNA should be considered as a collective entity, which is socio-politically constructed as a new candidate for modern control. Similarly modern genetics should be considered as a new channel that power takes as a form. The basis of this Foucaultian approaching of the DNA takes us back to 18th century.

According to Foucault (1978, 1980), the 18th century witnessed the discovery and subsequently, the administration of population as a live problem. In other words, the

population was not anymore a simple and single totality but instead it was, after all, a multiplied thing that had several different economic and political features and/or variables such as diet, fertility, longevity of life and health, etc.

One consequence of the discovery of population as a multiplied unit is the shift of the aim of power from the control of the totality to the manipulation of these relative variables in their relations to things. So to speak, this political economy of population, as Foucault put (1980:39), "...invented a synaptic regime of power, a regime of its exercise within the social body, rather than from above it." Comprehensively put, the synaptic regime of power is a continuous and an uninterrupted process of structuration of our bodies, direction of our behaviors and government of our gestures (Foucault, 1980:97).

From Foucault's perspective this new power hides behind the control of the very details of everyday life and life processes. Henceforward, differing from old modalities of power depending on the ultimate mastery on war-peace and death (see, Foucault, 1980:170), the modern control of everyday life is the power over life (see, Foucault, 1981: 223-254). Power over life has gradually been deployed around regulation of the population. As Taylor also put it (1986: 79), "it serves the preservation and extension of life as the bio-mass, which is to over-riding direction of much modern policy." Foucault (1978) calls this axis bio-politics. Indeed, the Foucaultian examination of the historical experiences, such as *The History of Madness*, *The Birth of Clinic*, *The History of Sexuality*, display regulation of different specific governable variables of the population by bio-politics and modern moods of power. In other words, for him insanity, sexuality or prison are only one facets of much more general problem. This problem is the institution of a new form of power as the necessary result of a new relation between gaze and power, and power and knowledge and resulting in the organization of new social relations. (Guedon, 1994: 126).

Comprehensively put, first of all, from a Foucaultian perspective modern mode of power, bio-power, is totally different from the old modalities of repressive and punitive power. As he put (1980:119),

What makes power hold good, what makes it accepted, is simply the fact that it does not only weigh on us as a force that says no, but that it traverses and produces things, it means to be considered as a productive network which runs through the whole social body, much more than as a negative instance whose function is repression.

Secondly, this creative and productive modern power, differing from old modalities of power, depends on knowledge and knowings. Knowledge is the necessary ground for power upon which it exercises its control. As many have noted (McHaul and Grace, 1995; 60, McNay, 1994; 64), knowledge has a role in the reproduction of relations of subjection and domination. Concisely, knowledge is power. In that case, then, to know is necessarily to control. In other words, to know is the exercise of control and subjection. As Lemert and Gilan put (1982:77), "...the desire to know is a form of knowledge in which to know life is also to control it" There exists, as Lucas put (1992:137), therefore, "...a power-knowledge structure which defines and indeed creates the individual"

Importantly, both the knowledge and power are performed in multiple discourses. In Foucault's words (1972:183), "...knowledge is defined by the possibilities of use and appropriation offered by discourse". Similarly, Foucault contends that (1980:93), "in a society such as ours,...,there are manifold relations of power..., and these relations of power cannot themselves be established,..., without the production,...,and functioning of a discourse."

Discourses are also the boundary lines representing what one particular thing is or what it is not and what one particular thing excludes or includes. Hence, discourses function so as to produce a particular kind of human subject that can write, speak, think and act in the

boundary lines of discourses in accordance with certain specific ways allowed by discourses. Therefore, as Lemert and Gilan (1982:31) point out "...a discourse would then be whatever constrains-but also enables- writing, speaking and thinking within such specific historical limits." Henceforth, briefly, discourse is the representor of restriction and revilement, rejection and approval.

Thirdly and again differing from old forms of power, modern power, besides depending on a knowledge-power of which the mainstay is to know, it also depends on techniques of observation and surveillance; gaze-power. As McNay (1994:94) puts the gaze-power, "makes any apparatus of power more intense: ...it assures its efficacy by its preventative character, its continuous functioning and its automatic mechanisms." It is this gaze-power and the constantly observed docile bodies and the new way of making them docile, that Foucault mostly refers to in *Discipline and Punishment* (1977).

Consequently, what Foucault demonstrates through his work on historical experiences is the achievement of complete mastery on the social body and on its features, such as mental health, physical health and sexuality, etc., through constitution of modern moods of power which uses discourses, and knowledge and gaze as it's main techniques, tactics and technologies.

For instance, *The History of Madness* shows the transition from the fool to the mentally ill. In the transition to mental illness, first of all, a medical discourse was constituted on insanity. The medical discourse freed lunacy from its content of guilt deriving from the mad's inability to work and to control it's desires, which in turn was resulted in the treatment of madness in terms of punishment, coercion and instilling terror as a purification (Laing, 1995: 77). Put differently, through integration in a medical discourse and being freed from its ethical discourse, insanity became a mental disturbance and a mental disorder. Later on, through the

constitution of asylum by Tuke and Pinel, madness was exposed to a scientific and institutionalized regulation by which new bodies of knowledge such as psychiatry, psychology, psycho-pathology, were established and the mad was surveilled. Briefly, medicalization of madness and subjection of the mad to a knowledge-power and gaze-power structure made it a medical object, which in turn makes it manageable and controllable.

Very similarly, *The History of Sexuality*, shows the transition from perverse pleasure and sexual secrets to normal and pathological. In other words, sex was transited to an issue of life and to a medical cause (and/or sexual causality, see, Foucault, 1978:65). In the transition to sexual pathology, first of all, a medical discourse turned sexuality into a medical object and similar to madness, freed sexuality from its content of sin. Later on, by the 19th century transformations of confession, the confessional became a place in which and by which a great archive of pleasures was established. According to Foucault (1978: 63),

The motivations and effects it is expected to produce have varied, as have the forms it has taken: interrogations, consultations, autobiographical narratives, letters; they have been recorded, transcribed, assembled into dossiers, published, and commented on.

Henceforth, pleasures and hidden secrets were continually recorded, and their record provided a great archive of sexuality and sexual behavior. So to speak, sexuality as a medical object was subjected to a knowledge-power structure through which the body is stimulated, pleasure is intensified, multiple discourses are constructed, knowledge of sex is produced and thus the will to knowledge is satisfied.

Additionally, sex was put as the center of biological responsibility due to the risk of transmittable diseases. This risk positioned sex as a control point for the state and as a

biological responsibility for the citizen, which in turn revealed a gaze-power structure and surveillance of sexuality.

Consequently both *The History of Sexuality* and *The history of Madness*, like other historical experiences, demonstrates that beginning with 18th century a new form of power was constituted. This new power focused on different aspects of the population instead of focusing on population as a single totality. Importantly, through multiple techniques of domination and technologies of government, such as constitution of discourses, accumulation of knowledge and institutionalization of surveillance, this new power converted these different aspects of population into manageable units. It is this general scheme through which gene technology and the genomic information are examined in this study. In short, approaching the DNA in such a frame enables us to analyze the molecular knowledge, not as a pure medical product but as an intellectual and socio-political construct experienced in a complex web of knowledge-power and gaze-power structures and a multiplied net of discourses.

1.2 THE FOUCAULTIAN READING OF GENOMIC INFORMATION

Considered as a new historical experience gene technology is the history of the transition from negative eugenics and its punitive power to positive eugenics and its manipulative power.

In the transition from germ plasma exercised as an ethical guarantee by negative eugenic policies, from 18th century to Nazi-Germany, to the DNA exercised as a medical object by positive eugenic policies, started by 1950s and 60s, a very special form of medicine was revealed, which I suggest calling *genetico-medicine* or/and *medicine of genetics*.

Genetico-medicine is sharply different from Foucault's classical and anatomico-clinical medicine. For classical medicine, as argued before, the main theme is symptoms, and for anatomico-clinical medicine the main themes are tissue and the structure of the body. (see for

example Foucault, 1991 and Gutting, 1989). On the other hand, genetico-medicine corresponds to a shift from tissues to DNA and to molecules. This shift to the DNA was carried out by two special techniques of genetico-medicine: genetic testing and genetic counseling.

According to Nordenson (1999: 1), “genetic testing examines the genetic information contained inside a person’s cells to determine if that person has or will develop a certain disease or could pass a disease to his or her offspring.”

Similarly, according to Geetter (2002: 5), “a genetic test can determine whether a patient contains a normal or an abnormal copy or copies of a gene.” On the other hand, as Geetter put it (2002: 5),

The genetic abnormality refers to a mutation that alters a protein in such a way that that protein cannot function normally. There are roughly 5700 known genetic disorders, approximately 300 of which are currently identifiable using genetic testing

Briefly, genetic abnormality or genetic disease is mutation in a chromosome or gene that results in a deterioration of function. As is well known, to diagnose these mutations of the base pairs of genes or chromosomes, several different testing techniques are used and have been developed. The types of testing, as noted by Nordenson (1999) can be grouped as follows: direct DNA mutations, family linkage studies, chromosome analyses, carrier testing and predictive testing, pre-symptomatic testing, cancer susceptibility testing; prenatal and postnatal chromosome analyses; etc.

Thus, the genetic test deciphers knowledge hidden in DNA as packages of codes. Through this decipheration, it reveals and provides a new sort of information, genomic information which is deployed as the definite and exact truth of the body. Therefore, genetic testing is an apparatus of modern genetics that creates an archive of excessively determinative

information of the body and the social body. Importantly, this archive was turned into a - digital database of genes, through the Human Genome Project in which InfoTech (computer technologies) and biotech (gene technology) are used together to map and sequence all of human DNA by 2005 (Thacker, 2002: 2-4).

On the other hand, while gene testing deciphers the genomic information, genetic counseling governs, manages and administers the deciphered information. Genetic counseling tells individuals how to manage their lives in terms of their molecular characteristics. For example, an individual with a susceptibility to cancer is advised to do and not do numerous things and these advices turns life into a strategic enterprise of molecules. In short, through gene-counseling genomic information is integrated into healthcare.

Henceforward, gene-counseling serves as a counterpart for gene testing that functionalizes and regulates genomic information. Thus, while gene testing constitutes a new knowledge-power structure, *molecular knowledge*, genetic counseling constitutes a new gaze-power, *molecular surveillance*.

The molecular surveillance creates a new definition regarding the body, describing the body in terms of numbered chromosomes. Thus, the body is separated into submicroscopic parts and it is subjected to chromosomal numberings, which in turn supplies a more intense surveillance. For example, as Novas and Rose put it (2000: 487),

One condition involving fronto-temporal Dementia and Parkinsonism is known as FTDP-17 because it is linked to a number of mutations in a specific region of chromosome 17. Increased susceptibility to breast cancer has been linked to the mutations known as BRCA1 and BRCA2 on chromosome 13.

With in these regards, it can be said that molecular knowledge through deciphering the invisible information of the body and molecular surveillance through managing and

numbering the deciphered information of chromosomes, converted the genetic make-up and the genetic defeat into a medical object. Put in other words, both genes and genetic experience are medicalized, as noted by Rock (1997;109) as follows; “geneticization builds upon medicalization”.

From a Foucaultian perspective, it can be said that, by the medicalization of the genetic make-up, genomic structure became the new governable measure of the population that could be improved (for instance Human Genome Project and Human Cloning) and corrected or rehabilitated (for instance gene haunting and gene engineering). Furthermore, like other measures of the population such as habitation, clothing, nutrition, diet, general forms of existence, the observations, regulations and administration of genetic structure are carried out by the judges of genetic make-up who are counselors, geneticists, doctors, biotech firms, insurance companies and employees, etc.

The promotion of gene to a medical position may be seen as a radical movement that put an end to negative eugenic policies. Indeed, from 18th century to 1950s, gene studies had been primarily constituted on biological determinism within a negative eugenic frame.

In 18th century J.G. Kolreuter, Malthus and his study; *Essays on the Principle of Population* (1798), in 19th century Jean Baptiste Lamarck and his work, *Philosophic Zoologique*, Charles Darwin and his work; *Origin of Species* (1859), W.C. Wells, Auguste-Clemence Royer, Ernst Haeckel, Mendel and Galton; in early 20th century social eugenicists; all together argued the superiority of the biological law.

According to them, biological make-up and the social existence of human beings were determined by their germ plasma; regardless of social rehabilitation and church or state charities. Similarly, biological determinists linked any and every sort of social undesirability to the degeneration of heredity. Insanity, poverty, epileptics, alcoholism, criminality,

prostitution, feeble-mindedness, homosexuality, tuberculosis and syphilis, were all results of inferior hereditary structure that constituted a great obstacle to social evolution and welfare. Thus, social progress could be achieved only through the minimizing the risk of transmission of bad traits.

Furthermore, the perception of social misfits as obstacles to social progress led them to be exposed to a concept of guilt and the germ plasma was exercised as an ethical issue. Like the mad who were unable to work or master their desires and thus were judged guilty, the socially unfit were socially or physically degenerate and thus unable to contribute to hereditary progress. These biologically guilty people, like the insane who were treated violently, were punished violently both by the state itself and by the experts of heredity, eugenics professors. It is precisely this punishment, I would say, is what Galton called negative eugenics.

Negative eugenics was an attempt to minimize the risk of transmission of inferior, harmful traits to future generations. As Reich noted (1995: 765), “negative eugenics sought to encourage the socially unworthy to breed less or, better yet, not at all.”

Negative eugenics reached its peak by Nazi Germany in 1940s through sterilization laws, marriage certifications, and mass extermination of Jewish people and the psychiatric patients. (Fijalkow, 1999: 456). On the other hand in USA as Reich noted (1995:766),

... [E]ugenics helped obtain passage of the Immigration Act of 1924, which sharply reduced eastern and southern European immigration to the USA... The laws were declared constitutional in the 1927 US Supreme Court decision of *Buck v. Bell*, in which justice Oliver Wendell Holmes delivered the opinion that ‘three generations of imbeciles are enough’

In fact, these punishments and the negative eugenics corresponded to the social exiling of the unfit. In the 1900s, despite the discovery of the gene, there still existed no professionally

applicable body of knowledge – such as gene therapy or human cloning – to deal with the hereditarily unfit. Therefore, the only possible thing to do could be the isolation of the unfit from the remaining population. It was the selective elimination of people having undesirable traits from the breeding population (Bender, 1974: 194). In other words, as McInerney put (1974:181), “It is the principle that an innocent human being can be killed if his existence is convenient or uncomfortable to others or if those others deem him unfit to live.”

As a result, medicalization of the gene could at first glance be seen as a humanitarian movement, which put a halt to violent techniques and the punitive power of negative eugenics and which liberated from guilt those defined as hereditarily and socially inferior. Nonetheless, in a deeper sense, there is no real distinction between the liberation of the mad from their chains and the liberation of individuals from negative eugenics. The day the mad were freed from their chains they were integrated into the center of much more complex relations. Similarly, the day when negative eugenics came to disappear, individuals and their hereditary traits were integrated into the center of new relations between power and the body. DNA was placed onto society’s agenda for the future. It became the ultimate issue of painstaking control over the social body and the body.

As Taylor put (1986: 79),

In going for liberation, we see ourselves as escaping a power understood on the old model. But in fact we live under a power of the new kind, and this we are not escaping, far from it, we are playing its game, we are assuming the shape it has moulded for us.

On this basis, the Foucaultian reading of genetics firstly conceptualizes the genetic structure as the new variable of population and secondly it analyzes modern genetics as a new way of management of this new variable. Thirdly, it positions genetic test and genetic counseling as

two main techniques of modern genetics that provide a knowledge-power structure, molecular-knowledge, and a gaze-power structure, molecular surveillance.

On the other hand, the survey conducted on insurance companies reveals constitution of these two power structures at the practical level on the basis of *molecular risk*. This in turn demonstrates how Foucaultian bio-politics is transferred into *molecular politics*. Finally, the transfer into molecular politics shows how modern genetics becomes an apparatus for intensifying the control on the social body and its management.

2.0 SAMPLE OF THE STUDY:INSURANCE COMPANIES

In accordance the Foucaultian approach, it can be said that, the modern power owns special sites in which the gaze-power and knowledge-power are located. For example, the asylum, the prison., the confessional, etc. are the locations by which Foucault examine the underground reality of modern power. Similar to that, there can be found several social sites in which genetic structure is exposed to knowings and observations. These sites could be biotech firms, universities, university hospitals, state-health care institutions, employees, insurance companies, and ext. However, this study focuses and conducts its empirical study on insurance companies and excludes other social sites that may witness the actual use of genomic information. The reasons for the selection of insurance companies are indicated below:

First of all, insurance companies are private-based and benefit-based organizations. It can be argued that, compared to state institutions and NGOs, insurance companies are much more open to use of new technologies and policies that can increase their company benefits. Thus, they are more flexible in terms of adaptation of new policies and technologies.

Secondly, life and health insurance companies depend on the assessment of risk status and health behavior of the client. They currently use several criteria to make better assessments

such as searching the family genealogy of common diseases, examining risky behavior including drugs, smoking and eating habits, and so forth. However, since genomic information constitutes the most trustworthy information stream of human history, through using these information insurance companies will be able to draw almost perfect risk profiles.

To be able to reach a better risk assessment, on the other hand, begs further considerations for the company. First of all, the more accurate risk assessment, as argued by Inayatullah and Fitzgerald (1996), will enable insurance companies to either deny or require higher premiums from individuals whose genetic make-up makes them a higher insurance risk. On the other side, risk assessment may also be a problem for insurance, since the people who have genetic defects may load upon insurance and they may increase the premiums for other clients. However, if the client does not indicate the medical risk, then he/she may receive a high payout and a low cost, which becomes a high cost to the company.

Thirdly, according to regular genetics, everybody carries at least 30 to 40 glitches in their DNA. Therefore, everybody is already genetically ill. What will insurance companies do and who would they insure if everybody is already ill?

3.0 METHOD OF THE STUDY AND THE LIMITATIONS

The sample of the study is consisted of 19 different life and health insurance companies that include all of the life and health insurance companies located in Ankara, Turkey, in 2001. The 38-question survey was conducted on regional managers of these insurance companies. The position of regional management is the highest position and regional managers are responsible for policy-making processes. Therefore, they are actively engaged in the process of adaptation of new techniques or technologies. Except 11 companies, 8 companies had only one regional manager, which makes the sample size pretty small. Totally 30 people from

19 different companies were surveyed. Even though this is a very small sample, the study argues that it still is significant for couple reasons:

- 1) It includes all of the insurance companies in Ankara, Turkey, in 2001.
- 2) The study does not aim to reveal grand results that are applicable for any other country or region. However, the study supplies a basis on which further studies can be built upon.
- 3) For the sake of being consistent with a Foucaultian approach, the study does not aim to be explanatory but descriptive. That's why; the study does not claim any hypothesis that can be either falsified or verified. The otherwise would be contributing to the constitution of a scientifically legitimized discourse on the DNA.

In accordance with above arguments, the study uses frequencies and factor analysis to examine the effects of molecular surveillance and molecular knowledge on the management of the social body.

4.0 FINDINGS AND DISCUSSION

Firstly, factor analysis shows that there can be two main transformations in the current structure of life and health insurance companies if they use genomic information revealing the *molecular risk status* of the client: changes in the inner structure of the companies and changes in client services.

Before examining these possible changes, it must be said that, molecular risk status is the status of the molecular risk that a person carries and it is depended on the client's genetic make-up.

Molecular risk differing from other risk-assessment techniques of medical science and insurance is able to detect pre-existing genetic conditions and to provide the most constant

and most perfect information about risk. Thus, by molecular risk the concept of risk has supplied a statistical guarantee.

With in this frame, the first transformation, which is related with the inner structure of companies, corresponds to re-creation of risk politics and the second transformation, which is related with client services, corresponds to application of it. Each of them, re-creation of risk politics and its application, has three specific policy changes.

Changes in Company policies: Re-creation of Risk policies

1) Genomic Information as a New Criterion:

On the basis of above argument, it can be said that since genomic information provides a better assessment by revealing the molecular risk status/profile of the client, it may become one other criterion of health and life insurance application. Among the other criteria, age, gender, habitual behavior, socio-economic status, personal disease story, family disease story, respondents, by 70 %, indicated that the most important one is genetic make-up profile.

In other words, besides other criteria such as age, gender, family disease and personal disease stories, the accordance of length and weigh, carrying known diseases such as cancer, cardiac disease, diabetes mellitus, etc.; genomic information may become a new but the most important criterion of risk assessment.

2) Making Gene Testing Compulsory:

In relation with the use of genomic information as a new criterion, it can also be said that insurance companies may compel clients to share their genomic information with the company. Put differently, sharing genetic test results may become a prerequisite for

insurance application, as indicated by 80 % of the respondents. Besides %77.3 of the respondents agree that state should be responsible to make compulsorily genetic tests.

3) Co-operation With Genetic laboratories

Co-operation with genetic laboratories can be argued on the basis of two themes. First of all, as Kevles (1995) argued, if a client knows that he/she has high genetic medical risk and if he/she does not share this information with the company, then that person may receive a high payout at low cost to himself but at high cost to the company. Companies to preclude such deceptions may build testing facilities within the company or they may hire geneticists to work for them, as indicated by %86.7 of the respondents.

The second theme is about a new health status category, which is the ‘carrier individual’. The carrier is a person who has a mutated gene associated with a disease but is not personally somatically affected by this mutated gene and disease. Therefore, such individuals carry the defeated gene but do not develop the disease and its symptoms. Thus, the carrier individual is asymptotically ill but symptomatically healthy. This new category of people is conceptualized by Kaplan (1997) under the term “healthy-ill.”

The healthy-ill due to its suspicious position in terms of molecular risk may constitute a problem for insurance companies. They may need genetic advice explaining the risk status of the client while charging these individuals.

Consequently, these two themes together may force insurance companies to co-operate with genetics and/or genetic laboratories.

B) Changes in Client Services: The Application of Risk Politics

1) Individual-based insurance: Since every client has a unique and different genetic make-up, each client also has a different molecular risk. So to speak, clients are not anymore a unity of persons that can be grouped into very few categories. Instead,

they are unique individuals in a pool of millions of genetic combination. This may cause companies to apply different policies to different clients. Thus client service policies may become more flexible and diversified. In short, insurance may become individual-based, as indicated by 96.7% of the respondents.

- 2) Insuring the Diseases: According to regular genetics, every body carries 3 to 8 glitches in their DNA, which are called ‘sleepers’ by Blank (1981:55). Therefore, gene test may cause insurance companies to confront a world in which every body is already genetically defeated and thus unhealthy. In other words, the number of the least risky population is decreased by modern genetics. In such a case, insurance companies, instead of putting an end to insurance sector just because there is nobody out there who is healthy, may start a new policy, which is insuring the disease, as indicated by 80% of the respondents.
- 3) Specializing on Specific Diseases: Despite the future scope of insurance, insuring the disease, insurance companies, in order to make more benefit in short time over genetically-defeated client, may specialize on some specific diseases that are very well-known (or the most common ones), while excluding less common diseases. This is indicated by 76.7% of the respondents. This may be resulted in exclusion of huge numbers of people from the insurance pool, at least for a while.

These findings demonstrate that genetic testing and counseling through revealing the molecular risk status of the individual provides a new apparatus for insurance companies. This new apparatus may force insurance companies to produce new policies and to change the current structure of life and health insurance. Since the new policies will be based on the molecular risk and molecular information, these policies can be called *molecular policies*. Constitution of molecular policies, in turn, may transform Foucault’s bio-politics into

molecular-politics; as argued by Rose (2001:1) as follows “...as truth regimes of the life sciences have mutated, contemporary bio-politics has become molecular politics.”

Molecular politics can be defined as *the designation of molecularity*.

From a Foucaultian perspective, it can be said that, by the designation of molecularity the social body is subjected to a more detailed and more intensified power, which recently has begun to control the DNA. This power has two main techniques: gene testing, which constitutes molecular knowledge and genetic counseling, which constitutes molecular surveillance. As a new body of knowledge molecular knowledge supplies a great fount of knowledge and knowing and it puts forward the somatic truth of humanity. Thus, it serves as the newest and the most complex apparatus of the knowledge-power structure. On the other hand, molecular surveillance enables modern power to reach the innermost structure of the social body and it reshapes life at a very novel level, that of the submicroscopic. Thus it leads to an absolute realization of gaze-power.

These together supply a continuous check-up of the subject, its correction, its supervision, its measurement, its separation and localization. At that point, genetic make-up becomes a means of access to the life of the soma and to the control of molecular conditions of the population- molecular politics.

5.0 CONCLUSION

As argued before, this study aims to show that the DNA is not just a biological entity but also a socio-political one that should be understood in the context of the politics of life. To reach that the study first of all conducts a Foucaultian reading on modern genetics. Such a reading reveals that modern genetics uses two techniques: genetic testing and counseling. Genetic testing gives way to molecular knowledge, which is the most complex apparatus of

Foucaultian knowledge-power. On the other hand, genetic counseling reveals molecular surveillance, which is the most complex and powerful apparatus of the Foucaultian gaze-power.

The study, secondly, uses descriptive quantitative analysis to observe the affects of molecular surveillance and molecular knowledge at the social formation level. The social formation level corresponds to social spaces that may witness the actual use of genomic information such as employees, biotech firms, national health care, insurance companies, etc. However, this study focuses on insurance companies while excluding others. The reason for that is insurance companies are benefit-oriented, private organizations that are willing to use any technique to increase the benefits. Beyond this economic reason, life and health insurance is based on assessment of health status and genomic information and the molecular risk status, supplied by it, is the most reliable factor for them to make risk assessments.

The factor analysis conducted on insurance companies reveal that the use of molecular risk information may force insurance companies to produce new policies that are based on molecularity. The new policies will be molecular policies which transform Foucaultian biopolitics into molecular politics. Molecular politics designs molecularity and as a result molecularity becomes one of the manageable variables of the social body. In short, the DNA becomes a new way to control the social body and to increase the efficiency and the scope of the modern power.

SELECT BIBLIOGRAPHY

Bender, H. 1974 Is there Intelligent Life on Planet Earth?, Paoletti, A., ed., *Selected Readings: Genetic Engineering and Bioethics*, A. USA: NY.

Blank, H. R. 1981. *The Implications of Applications of Human Genetic Technology*. Boulder : Western Press

Carlos, N, Rose, N. 2000. "Genetic Risk and The Birth of The Somatic Individual" *Economy and Society*, 29, pp. 485-513.

Fijalkow, Y. 1999. "Hygiene, Population Sciences and Population policy a Totalitarian Menace?" *Contemporary European History*, 8, pp. 451-472.

Foucault, M. 1972. *The Archeology of Knowledge*. New York: Pantheon Books.

Foucault, M.1977. *Discipline and Punishment*. London: Allen Lane.

Foucault, M.1978. *The History of Sexuality: An Introduction* (Vol.1) New York: Vintage Books.

Foucault, M. 1980. *Power/Knowledge: Selected Interviews and Other Writings 1972-77*. New York: Pantheon.

Foucault, M. 1991. *The Birth of The Clinic: Archaeology of Medical Perception*. London: Routledge.

Geetter, J. S. 2002. "Coding For Change: The Power of The Human Genome To Transform The American Insurance System." *American Law and Medicine*. LookSmart FILES (www.findarticles.com/m6029/1_28/860664879/pl/article.jhtml)

Gutting, G. 1989. *The Archaeology of Scientific Reason* USA: Cambridge Uni. Press.

Guedon, J.C. 1994. *The Knowledge of Power and The power of The Knowledge*, Smart, B., *Critical Assessments* (1) (Vol. 2) NY-London: Routledge.

Kaplan, J.M. 1996 "Problematizing Reifications and Naturalizations out of Focus." *Cultural and Technological Incubations of Fascism*. SEHR FILES. (www.stanford.edu/groups /SHR/5-suppl/text/kaplan.html)

Laing, R. D. 1995. The Invention of Madness, Smart, B., ed., *Critical Assessments* (2) (Vol.4), NY-London: Routledge.

Lemert, C, Gillan, G. 1982 *Michel Foucault: Social Theory and Transgression*. USA: Columbia Uni. Press.

McHaul, A, Grace, W. 1995. *Discourse, Power and The Subject*. London: UCL Press.

McInerney, R. 1974 Who Shall Live And Who Decides? Paoletti, A., ed., *Selected Readings: Genetic Engineering and Bioethics*, A. USA: NY.

Foucault, M. 1981. Omnes At Singulatim: Towards a Criticism Of Political Reason. McMurrin, M, ed., *The Tanner Lectures on Human Values* (Vol. 2), University Of Utah Press.

McNay, L. 1994. *Foucault: A critical Introduction*. Cambridge: Polity Press.

Nordenson, N. 1999 Genetic Testing in Gale Encyclopedia of Medicine. FIND ARTICLES FILE Item: 2601000588.

Reich, T. W. 1995. *Encyclopedia of Bioethics*. (Vol.2) NY: MacMillian Pub.Co.

Rock, M. 1997. "UNESCO Preliminary Draft of a Universal Declaration on The Human Genome and Human Rights." *Eubios Journal of Asian and International Bioethics*, 7, pp. 108-110.

Rose, N. 2001. "The Politics of Life Itself." *Theory, Culture and Society*, 18(6), pp. 1-30.

Taylor, C. 1986. Foucault on Freedom and Truth, Hoy, D. C., ed., *Foucault: A Critical Reader*. London: Basic Blackwell.

Thacker, E. 2002. Database and Culture. SWITCH FILES
(<http://switch.sjsu.edu/web/v5n3/E-1.html>)

Inayatullah, S., Fitzgerald, F. 1996 "Gene Discourses: Politics, Culture, Law and Futures".
Technological Forecasting and Social Change. 52(2-3), pp. 161-183