

CONTROVERSIAL ISSUES RELATED TO REPRODUCTIVE
BIOTECHNOLOGY: AN EMPIRICAL STUDY

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ABSTRACT

CONTROVERSIAL ISSUES RELATED TO REPRODUCTIVE BIOTECHNOLOGY: AN EMPIRICAL STUDY

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This study examines the problems which are created by assisted reproductive techniques on the individuals and their decisions about the reproduction. In the study, the data of a field study which was conducted in 2010 is used in order to make the examination deeper and to give a qualitative and quantitative dimension to the theoretical framework. Through the sociological analysis of both controversial issues occurred by pre-natal reproductive technologies such as sex selection, abortion, PGD, IVF babies, disability, etc. and personal decisions which are impossible to be given independent from the social environment, providing a contribution to the development of sociology of reproduction is desired. In this study it is claimed that assisted reproductive techniques are power which will possibly get ahead of natural reproduction and reduce and even erase the biodiversity and coincidental characteristics of human reproduction, and increase the inequalities in the society. Thus this power may courage the reproduction of ‘desirables’ and prevent

‘undesirable’ ones from living and even insemination anymore. Another argumentation which is under discussion is the illusion of all these activities and problems were taking their sources from the own decisions of prospective parents. Reproductive biotechnology commerce hopes to people through its economy, cuts across all boundaries through the bounties of its technical abilities and by doing so it does not see a drawback in making people ‘victims’ of their choices that regarded as ‘rational and free’ which in fact mere ‘irrational’ preferences. Thus in this thesis, the theoretical foundations and social results of this technology which extending up to the pre-natal processes are discussed to contribute a more democratic policies.

Keywords: Abortion, Assisted Reproduction Technologies, Eugenics, Pregnancy Screening, Reproductive Biotechnology

ÖZ

ÜREME BİYOTEKNOLOJİSİ İLE İLGİLİ TARTIŞMALI KONULAR:

AMPİRİK BİR ÇALIŞMA

Evsel Ocak, Gülsevim

Yüksek Lisans, Bilim ve Teknoloji Politikası Çalışmaları

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Bu çalışma, yardımcı üreme tekniklerinin toplum bireyleri ve üreme ile ilgili kararları üzerinde yarattığı sorunları incelemektedir. Bu incelemeyi derinleştirmek ve kuramsal çerçevesine nitel ve nicel bir boyut kazandırmak için, çalışmada tezin sahibinin 2010 yılında gerçekleştirdiği alan çalışmasının verileri de kullanılmıştır. Doğum öncesi üreme teknolojilerinin neden olduğu, cinsiyet seçimi, kürtaj, PGT, Tüp bebek, engellilik gibi, tartışmalı konuların ve bu konularda sosyal çevrelerinden bağımsız olarak verilemeyen kişisel kararların sosyolojik analizi ile üreme sosyolojisinin gelişmesine katkı sağlanmak istenmiştir. Bu çalışma, yardımcı üreme tekniklerinin doğal üremenin önüne geçecek ve insan çeşitliliği ve üremesinin rastlantısallığını azaltacak ve hatta yok edebilecek, toplumdaki eşitsizliği arttıracak bir güç olduğunu; öyle ki bu gücün öjeninin temeli olan ‘istenilen’ bireylerin seçilip

‘istenmeyenlerin’ yaşamasını hatta artık döllenesini bile engelleyebileceğini ileri sürmektedir. Tartışılan diğeri bir konu, bütün bu etkinliklerin anne-baba adaylarının kendi seçimlerinden ileri geldiği yanılsamasıdır. Üreme biyoteknolojisi yarattığı ekonomisi üzerinden insanlara umutlar satmakta, bunda teknik edimlerinin cömertliği ile sınır tanımamakta ve bireylerin ‘rasyonel ve özgür’ sandıkları, ama aslında ‘rasyonel olmayan’ seçimlerinin kurbanı olmasında bir sakınca görmemektedir. Bu nedenle bu çalışmada, daha demokratik politikalara katkıda bulunabilmek için, doğum öncesine uzanan bu teknolojinin kuramsal temelleri ve toplumsal sonuçları tartışılmaktadır.

Anahtar Kelimeler: Kürtaj, Hamilelik Taraması, Öjeni, Üreme biyoteknolojisi,
Yardımcı Üreme Teknikleri

To my son, Mert OCAK who was born in the time-span of this study...

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CHAPTER I

INTRODUCTION

Science and technology have affected all the societies as much as the societies have effects on them in the history and today. Surely, the most splendiferous improvements were seen in biotechnology in this history of technology. However, the point where modern biotechnology reached today is a different milestone for the society due to the fact that since gene mapping was succeeded, it has been possible to describe genetic sequence of any living organism. Moreover, it has been possible to understand the varieties among the characteristics of these organisms and even to change them.

After this point, instead of well-known advantages of biotechnology and its products/services such as increasing the productivity of agricultural crops, animal products, and/or strengthening the biological weapons, the medicinal drugs, assisted reproduction technologies, etc.; the disadvantages and ethical contradictions have been discussed especially in social science fields. Particularly the developments in reproductive technology have different places in this sphere because of their ability of shaping the generations' features and so the future. In this context, neither health nor beauty is inseparable part of the 'natural' anymore; conversely they are transformed into 'goods' on which people invest, compete and have an effort. The additional problem here is the developing of this process as to cover pre-implantation.

Moreover, while doing that, the main assumption of these specialists and geneticists is 'having healthy babies'. This assumption sounds nice but after rethinking about it, many questions arise. These questions remind us to have several thoughts in mind that "Yes, infertility is not an intended situation but what about 'having perfect babies'?", "Who could afford or decide to create them?", "Who does decide for woman to undergo pregnancy testing nowadays," "What will be the right of eliminated people to live?", "Is abortion a solution?" and finally "Do we want an Arian race: a new eugenics again: what does it mean?"

This study aimed to give some answers to these controversial questions arose in reproductive applications of biotechnology and their reflections on the society. By doing so, a new eugenic danger is signaled and desires of the respondents, who were interviewed for the field research of this study, for having a healthier or more beautiful child were showed as examples of such thinking. Other empirical findings of the study based on a focus group study which was conducted with different four family members of children with Down Syndrome. The findings of field study and focus group study were evaluated in the light of literature review. It is a result that while the family members of children with Down Syndrome were more emotional, healthy family members and citizens who were interviewed in the field were more rational in decision making processes in general.

Thus the rest of the study tried to underline the importance of getting a balance between rational and irrational choices in order to avoid both of eugenic choices and pure emotionalism. However the misuse of female bodies and embryos for the aims of assisted reproduction technologies contributed another dimension to the medicalization and commercialization period of individualization and body. This

study had some argumentations over these topics and tried to point out the problematic social reflections of reproductive biotechnology.

Humanity has an overwhelming desire for living longer and healthier from the beginning of its existence. Up to today, people were trying to make this desire be realized by taking precautions; from now on, they have been applying some biotechnological and surgical attempts for the same aim since they explored the genetic structure of humankind and other living organisms. Scientists and specialists determine the defected gene and offer people to get deal with it or to discard that entity with defected gene if it is possible.

In the recent history, some leaders used biology and technology in order to discard ‘inferior’ people from the society. Nowadays, the feared scenario is preventing these so-called inferior embryos from living and provoking people to make better babies towards Pre-Implantation Genetic Diagnosis (PGD). Of course, biotechnology and Assisted Reproduction Technologies (ART) related to it offer new hopes to infertile people or people who are in high risk groups with respect to single-gene diseases. However they also affect the society as a whole because of the claim of having healthier babies without getting the risks of having a baby through natural reproduction.

The problem and the subject of this thesis cover some controversial issues in the application of PGD; for example the decision mechanism in PGD process and its invisible results. Another problem occurs when people use this technology how they want. Other subject areas of this thesis are to offer an abortion through the diagnosis test statistics; to offer that abortion in a time span which was formed by the procedure of that district and this time span differs country to country; to produce a

child product with desired characteristics, moreover in such kind of production, to throw redundant embryos or to lead multiple embryos to grow by in-vitro fertilization, pre-implantation genetic diagnosis, or another technique which uses IVF. Because the use of the assisted reproduction techniques (ART) in conjunction with the trend to delay childbearing has resulted in an increased frequency of multiple gestation pregnancies (Martin et al., 2003; Reynolds et al., 2003; quoted from Peters et al., 2006: 119).

In other words, when we care all the abilities of technology, this situation will possibly lead us to confront with many social problems. Simply, most of the people could not afford many opportunities of biotechnology and that causes technology to be arm-in-arm with inequality. If we assume that a majority of people could get these services and there would be equality, then the problems can range from the imbalance in the ratio of sexes in the world, because of the possibility of choosing the sexes of the unborn, to the creation of a new eugenic society. Of course, among these biggest points there will be other 'minor' subjects which are examined in this thesis. These are:

- The implications of pregnancy screening on pregnant women's social environment and the effects of all of these agents on the pregnant women's decision-making process,
- Ethically acceptable termination reasons and legally acceptable termination time spans,
- Thoughts towards IVF and PGD.

After a wide discussion over all these ‘minor’ and ‘major’ problems with related survey data, as the ‘possible ultimate disaster’, eugenics is addressed [‘possible’, because the decisions, which were made in PGD process, would not be the pure or intrinsic individualistic decisions]. Thus, the environmental, in other words economic, social and cultural factors should be considered on the way which takes people to a eugenic future. After all, these ‘real’ actors have the power of making ‘eugenics’ possible. It is ‘ultimate’ because eugenics is known as the final stage of all enhancement and elimination politics and efforts. There is a strong need for reminding the ‘eugenic disaster’ since this world witnessed the Nazi disaster just before a few decades ago.

In order to see the picture as a whole, personal decisions in some steps of pregnancy screening and towards some applications of ARTs, which were seemed as individualistic at the first glance, are discussed in the study through a field study on the sample from Turkey. However first of all, background information for the transformation of basic concepts of rationality, individualism, body, and then biotechnology, its uses in reproduction is given in the next section.

CHAPTER II

CONCEPTUAL and THEORETICAL DISCUSSION

2. 1. Technology and Rationalism towards their Critiques

“...I belong to the opposition called life.”

Vautrin, *Le Père Goriot*

(Father Goriot, 1834/35)

The differentiation between ‘human made things’ and ‘natural’ things is required an examining of the relationship between technology and values. Answers for the questions like ‘technology for what,’ ‘technology for whom,’ ‘use/misuse of technology,’ ‘what we do with technology’ and ‘what technology does to us,’ changes especially according to the time, and the person when/who they were asked. Answers may change according to the main characters of views, period –for example Enlightenment, after World Wars, or post-modern era – or thinkers. Here, five distinctions of Hanks (2010: 2) about different approaches to technology are seen:

1. Classical and Contemporary philosophies of technology,
2. Transcendental and Empirical Approaches,
3. Humanities and Engineering philosophies of technology,
4. Dystopian and Utopian Views (Pessimists and Optimists),

5. The position that technology determines values and the view that technology is value-neutral.

Each considerations mentioned above may include or refer one another with some respects. For this reason, it is regarded as sufficient for this study to explain mostly the first distinction which is between Classical and Contemporary philosophies of technology. Classical philosophy of technology affected mainly by the modern technological developments occurred in early-mid-twentieth century. Scientific rationality was neither under discussion nor suspicion, yet. Drenson (2010: 29) named this process as *technophilia* means the love of technology and turns the pursuit of technology into the main end of life.

According to some writers include Hanks (2010) classical philosophy of technology includes transcendentalism with some respects but especially with respect to its concerning with understanding the nature of technology. The argumentation over the differentiation of *physis* and *technē* is regarded as useful in understanding philosophical writings of Aristoteles, Descartes, recently and Heidegger. *Physis* is generally translated as “nature,” but once again Heidegger objects. In the similar way, Aristotle, in his foundational book of Western philosophy, *Physics*, underlined the modest being character of human such as other beings. Aristotle accepts *physis* and *technē* as various sources, hence there are a huge number of differences between that which is a product of *technē* and the beings of *physis*, the most crucial and never problematized difference is the origin of the movements that bring each into being: in things made, that source is outside the thing in the maker (the *archetēkton*), whereas in “natural” things, that source is in the thing itself (Schmidt, 1990: 151).

According to the influential person of the book “Passions of the Soul,” Geneviève Rodis-Lewis, the *Principles* [Principles of Philosophy (1644)] had not dealt with “the nature of man,” but, Descartes added, “physics... has been extremely useful for establishing certain foundations in moral philosophy (quoted from Descartes, 1989: xvi).” So that Descartes likened the whole of philosophy a tree (Cottingham et. al. 1994: 186):

“...The roots are metaphysics, the trunk is physics, and the branches emerging from the trunk are all the other sciences, which may be reduced to three principal ones, namely medicine, mechanics and morals. By ‘morals’ I understand the highest and most perfect moral system, which presupposes a complete knowledge of the other sciences and is the ultimate level of wisdom.”

As a rationalist, Descartes, in his ‘Philosophical Writings,’ in Rule Two¹, underlined that all knowledge is certain and evident cognition (Cottingham, Sttothoff and Murdoch, 1994: 10-11) and wrote evidential passage which supported his famous skeptical foundation. According to Descartes, people ingeniously constructed the most subtle conjectures and plausible arguments on difficult questions, but after all their efforts they came to realize, too late, that rather than acquiring any knowledge, they had only increased the number of their doubts (Cottingham, Sttothoff and Murdoch, 1994: 10-11). In Rule Eight², he questioned what human knowledge and its scope was. For Descartes (Cottingham et. al., 1994: 31), there is nothing more foolish than presuming as many do, to argue about the secrets of nature, the influence of the heavens on those lower regions, the prediction of future events, and so on, without ever inquiring whether human reason is adequate for discovering matters such as these.

¹ *Rule Two: We should attend only to those objects of which our minds seem capable of having certain and indubitable cognition (Cottingham et. al., 1994: 10).*

² *Rule Eight: If in the series of things to be examined we come across something which our intellect is unable to intuit sufficiently well, we must stop at that point, and refrain from the superfluous task of examining the remaining items (Cottingham et. al., 1994: 28).*

The rules of Descartes indicated above are mentioned, in relation with the reproductive issues and its ethical consequences. However rationalist approaches could come up short on these daily issues and research subjects, in other words. If we regard these subjects as having a close relationship with emotions, Voss, in his introduction as the translator of “The Passions of the Soul” (Descartes, 1989: viii), explains that in the realm of the emotions, reason by itself could do very little and Descartes recommended a mixture of reason and experience for the understanding of the emotions.

Again, the supreme steps for human knowledge and rational thought were undoubtedly taken by ‘Enlightenment’ thought of seventeenth and eighteenth centuries. After this time, every acceptances and understandings were questioned as broadly known; this thought introduced a new understanding of knowledge which would later transform all the aspects of social and economic life, as a result of this, the body and medical sociology. The most important milestone was taken in this context through the question of ‘What is enlightenment?’ (‘Was ist Aufklärung?’) and its owner, Immanuel Kant (1949, 132: quoted from Schweber, 2000: 28):

Enlightenment is man’s leaving his self-caused immaturity. Immaturity is the incapacity to use one’s intelligence without the guidance of another. Such immaturity is self-caused if it is not caused by lack of intelligence, but by lack of determination and courage to use one’s intelligence without being guided by another. Sapere Aude! Have the courage to use your own intelligence! Is therefore the [heraldic] motto [Wahlspruch] of the enlightenment?

In other words, if one has an intelligence and courage, he has to act as a mature who can decide without any guidance. Relatively a challenge both to the skeptic thought and to the *physis* by suggesting a sort of criticism would bring also a new questioning and understanding of rationalism and modernism at the same time.

However modernism could not even calculate this result. Foucault (Canguilhem, 1991: 9) in his Introduction to “The Normal and The Pathological,” underlined the importance of this process by writing that for the first time rational thought was put in question not only as to its history and its geography; as to its immediate past and its present reality; as to its time and its place: this is the question which Mendelsson and then Kant tried to answer in 1784 in the *Berlinische Monatschrift*: “Was ist Aufklärung?” (What is Enlightenment?). By asking that question, these thinkers opened philosophy up to a whole historico-critical dimension, for Foucault (Canguilhem, 1991: 9) and by looking at Kant’s essay in this way, Foucault proposed to connect Kant’s *Aufklärung*, the leaving of immaturity, with what he called the “attitude of modernity” with its consciousness of contemporaneity, “a modernity which sees itself condemned to creating its self-awareness and its norms out of itself” (Schweber, 2000: 28).

For another important person of critical view, reason wants to enlighten the superstitious mass by revealing trickery. (Baudrillard, 1988: 214). Again this approach would cause many problems for the next generations for others. For example Descartes, in his “Principles of Philosophy,” (1644; quoted from Feenberg (2008: 6) was defending that the reality of different science disciplines and their relationships among them could be obtained by the use of reason or metaphysics. However, for him (Descartes, 1644; quoted from Feenberg, 2008: 6) the public and free use of autonomous reason would be an important problem for the next centuries’ ways of thinking. According to the philosophers and thinkers of this age, autonomous and critical knowledge should be applied to the nature via technical ways and to the public as ethical and political activity. People should get knowledge

under the influences of neither an authority nor a prejudice and should get it by using only his autonomous critical reason. Generally, radical thinkers of the Enlightenment believed in that human thought was enough to get the responses of the very necessary questions.

After this process which named as *technophilia* by Drengson (2010: 29), application of technology into the education, governmental institutions, medicine and other fields of daily life; its reliability and as a result of this, that view is became weakened, with the words of Hughes (1982; quoted from Hanks, 2010: 2); ‘The Shock of the New’ ended dramatically ‘by the machine-driven destruction of the first world war and by what appeared as an increasing dehumanization of work and social life’. Classical humanities philosophers of technology, including Martin Heidegger, Ellul, Hans Jonas, Herbert Marcuse, Ortega y Gasset, Lewis Mumford, and John Dewey, developed accounts of the nature of technology and its place in human existence; however they were mostly, with the exception of Dewey, pessimistic about the changes technology brings (Hanks, 2010: 2).

One of the important pessimistic contributions to the field came from Marcuse who (1898-1979) was an advocate of Critical Theory, and with Adorno and Horkheimer, one of the first members of Frankfurt School. For Marcuse (2010: 164), the technical structure and efficacy of the productive and destructive apparatus had been a major instrumentality for subjecting the population to the established social division of labor throughout the modern period. Of course before mentioning the instrumental character of technology, he underlines its irrationality: ‘we are again confronted with one of the most vexing aspects of advanced industrial civilization: the rational character of its irrationality (Marcuse, 2010: 164).’

It is argued that we were more rational than our ancestors because we had achieved scientific knowledge of nature where they had only myths (Feenberg, 2008: 6). Towards the example of Hitler's Germany through its exhibition of a high degree of organizational rationality with consequences both morally evil and instrumentally disastrous, Feenberg (2008: 6) underlines that rationality is not necessarily good or even successful. The writer, who combined the rationality interpretations of Marx, Weber, Heidegger and Frankfurt School [Especially the interpretation of Habermas] to build his 'instrumentalization theory,' explains Weber's contribution, which in no way depends on an idealized view of reason; instead what interested Weber was the increased importance of "calculation and control" in modern organizations such as government administrations and corporations (Feenberg, 2008: 6). According to Feenberg (2008: 6), Weber pointed out that these organizations conform to principles or employ methods involving precision in measurement, accounting and technical insight and his concept of "disenchantment" suggests a reason purified of traditional social influences, but new ones emerge with the triumph of modernity. Feenberg (2008: 6, 7) mentions that he was not a Weberian but used his theory of 'social rationality' in order to generalize it to the society at large. Social rationality, in the sense Feenberg gives the term, depends on three main principles [mainly based on the concepts of Marx and Weber]:

1. Exchange of equivalents,
2. Classification and application of rules, and
3. Optimization of effort and calculation of results.

Feenberg's conceptualization of 'social theory' is important as an alternative for being neither pure rational nor irrational. With his own words, the absence of

social rationality in no way implies the presence of individual irrationality; namely mere prejudice and emotionalism (Feenberg, 2008: 7).

Then it can be summarized as pure rationality is not suitable for explaining neither social nor scientific problems. However irrationality is the other undesired matter which may lead people and whole society to chaotic situations. While some of the possible 'good' use alternatives of rationality should be seen in many other writers, it is known that rationality also contributed to the development of different scientific views and many problems towards them. Ulrich Beck (1992: 155) emphasizes scientific and social construction of today's risks derived from 'internal decision' in 'Science beyond truth and Enlightenment' chapter of his influential book *Risk Society* (1992). According to Beck (1992: 155), science is *one of the causes*, the *medium of definition and the source of solutions* to risks, and by virtue of that very fact it opens new markets of scientization for itself; in the reciprocal interplay between risks it has helped to cause and define, and the public critique of those same risks, techno-scientific development becomes *contradictory*.

According to Beck (1992: 155, 156), there were four theses in which this perspective could be illustrated by. Here, his first thesis is regarded and updated for explaining the aims of this study. In this thesis, Beck (1992: 155, 156) offered two scientizations by corresponding to the distinction between modernization of tradition and reflexive modernization of industrial society and by relating it to scientific practice and the public sphere. These are,

1. *Primary scientization*: Science is applied to a 'given' world of nature, people and society.

2. *Reflexive scientization*³: The sciences are confronted with their own products, defects and secondary problems, that is to say, they encounter a second creation in civilization.

Here reminding the questions of ‘what technology does us’ and ‘what do we do with technology’ could be useful when they are asked once again and for the biotechnology and assisted reproduction technologies this time. It can’t be claimed that people do something with reproductive technologies as well as other kinds of technologies. Conversely, reproductive technologies and their creators / applicators / directors direct people via suggesting inescapable products and services, include screening, IVF, PGD, and even abortion [the subjects of this study], which will overcome with the natural ‘complications’ of natural reproduction. When this thesis of Beck (1992) is thought, by ignoring the time period of his argumentation, it is seen that this process is also valid for reproductive technologies. In the primary scientization level of assisted reproductive technologies, *techne* is applied to the ‘given’ world of people and society, to the wombs of women, in other words to *physis*. However, science is again confronted with its own products, defects and secondary problems, as Beck mentioned above; but this time in its reproductive applications towards screening, IVF, PGD, and abortion. In Foucault’s (Canguilhem, 1991: 12) writing, this process was underlined as the importance acquired by scientific and technical rationality in the development of the productive forces and the play of political decisions.

³ The developmental logic of the first phase relies on a truncated scientization, in which the claims of scientific rationality to knowledge and enlightenment are still spared from the application of scientific skepticism to themselves.

The second phase is based on a complete scientization, which also extends scientific skepticism to the inherent foundations and external consequences of science itself. In that way both its claim to truth and its claim to enlightenment are demystified. The transition from one constellation to another takes place within the continuity of scientization, but precisely because of that, changed internal and external relationships of scientific work come into being (Beck, 1992: 155).

It is recognized finally that reason should not be the main determinant for the life spheres especially after witnessing the most ‘rational’ experience of Nazi Germany. However, it is very difficult to erase all its redundant from the minds; namely it is difficult to decide how to use this ‘rationality’.

Unfortunately, it is again impossible to imagine an interfering of social state which would provide a better condition for irrational politic or economic results anymore. This position of the Turkish state was underlined clearly by Erbaş (2009: 13a): “...Governance in Turkey has not developed in accordance with national and local demand and public participation and even there is no reticence among civil society. It is decided from above without public participation and without considering public and country interests; this ignorance makes her ‘irrelevant state’”. Namely, in order to eliminate this irrelevancy Erbaş (2009a) suggested the state to give importance to the public participation and public and country interests. An agreement is point at issue for the text of Erbaş (2009a) especially when the ‘technocracy’ concept of Habermas is reminded. ‘Technocracy’ was an extension of such a system to society as a whole in response to the spread of technology and management to every sector of social life (Habermas, quoted from Feenberg, 2003: 100). As it is known that social life was ‘communicative sphere’ and ‘lifeworld’ of Habermas and referred to the family, public sphere, education, and all the various contexts in which individuals are shaped as relatively autonomous members of society (Feenberg, 2003: 81). The rapid integration of biotechnology as well as technology into the daily lives of people makes it necessary to participate them into the governance of technology. It is impossible to predict if some applications like this could make technology more democratic or not but some suggestions from

Feenberg (2005) are also considered here. Democratization of technology would be possible for him (2005: 55):

- By shattering the illusion of transcendence by revealing the feedback loops to the technical actor.
- (For knowledge), the range of interests represented by the actor must be enlarged so as to make it more difficult to offload feedback from the object onto disempowered groups
- Broadly constituted democratic technical alliance (democratic movements in the technological sphere aim to constitute such alliances- but in a different way from dominant ones)

Another alternative that mentioned again by Feenberg (2005: 55) is the interpretation of Foucault's theory of power which belong to Michael de Carteu. Carteu distinguished between strategies of groups with an institutional base⁴

Undoubtedly there is a transformation in the technology, medicine, thus in the thoughts, individualism and the bodies. Rose (2007: 11) summarizes and explains this transformation as '...technologization and capitalization of medicine gives a particular form to the contested field of vital politics in the twenty first century. And this field is itself being reconfigured by a profound "molecularization" of styles of biomedical thought, judgment, and intervention.' For Illich (1995: 1653), the patient is now a 'life' that emerges from a gene pool into ecology.

In sum, present situation which reproductive biotechnology came, created a requirement for social sciences to reexamine the new social positions of the patients

⁴ From which to exercise power and the tactics of those subject to that power and, Who, lacking a base for acting continuously and legitimately maneuver and improvise micropolitical resistances.

or ‘mothers as women,’ their ‘bodies,’ the concepts of ‘individualism,’ ‘genetic risks,’ ‘disease and ab-normality,’ ‘termination of undesired and /or defected individuals’ and ‘new eugenics’ towards them. In addition to these, there is a subject of which questioning is urgent: that is the ‘decision making processes of prospective parents about reproduction and their babies. The new evolution of ‘decision making process’ led to new evolutions of the factors which affect this process and the question how and when the ‘reason’ started to be used in this way. All the ongoing things in reproductive biotechnology includes basically ‘genes’ and ‘bodies,’ especially of the women and afterwards, men as the indispensable biological partner of women, in reproduction. Then its social scope expands so much as to discuss ‘human nature,’ ‘rationalization’ and ‘individualization.’

2.2. Changing Meanings of ‘Individualism,’ ‘Body’ and ‘Medicine’

Before the ‘molecularization’ concept of Rose (2007a), we already have another concept which should be under discussion: that is the concept of ‘individualization.’ ‘Individualization’ is neither a phenomenon nor an invention of the second half of the twentieth century for Beck (1992: 127) who was regarded as the father of the concept of ‘individualism’. According to this work, corresponding ‘individualized’ lifestyles and life situations are found in the:

“...Renaissance (Burckhardt), in the courtly culture of the Middle Ages (Elias), in the inward asceticism of Protestantism (Weber), in the emancipation of the peasants from feudal bondage (Marx), and during the nineteenth and early twentieth centuries in the loosening of intergenerational family ties (Imhof), as well as in mobility processes – the flight from the countryside and the explosive growth of cities (Lederer, Kocka), etc; in this general sense

‘individualization’ refers to certain subjective-biographical aspects of the civilization process.” (Beck, 1992: 127)

For Baumann (1999, in Beck and Beck-Gernsheim, 2002: xvi), risks and contradictions go on being socially produced; it is just the duty and the necessity to cope with them that is being individualized. One of these risks and contradictions occurs, for example, in love as a product of being social and as being threatened by reason itself.

A recent critique of reason especially in emotions comes from Baumann, in his famous book, *The Individualized Society* (2001: 163-164) he emphasizes love as a strong and widely known emotion: love fears reason; reason fears love. Bauman shows evidence from ancient past in order to define their controversial relationships: love is about value, while reason is about use. Since its ancient awakening in Plato’s dialogues, reason has tried hard, and goes on trying, to annex ‘value’ and dump anything left over that resists annexation; to enlist ‘value’ in the service of ‘use’; to make value into a handmaiden or a spin-off of use (Baumann, 2001: 165). After his broad introduction to love and its relationship with reason, Baumann underlines sex, eroticism and love as inseparable concepts in his chapter on “Postmodern Uses of Sex” (Baumann, 2001: 227, 228):

“...Sex is nature’s evolutionary solution to the issue of continuity, the durability of life forms; it sets the mortality of every individual living organism against the immortality of the species. Only humans know that they are bound to die, and only humans may imagine the perpetuity of the human kind; only for them the transient existence of the body runs its course in the shadow of the perpetuity of humanity as a whole..”

For humanity, while it became possible to make sex and reproduction separable from each other by the developments in reproductive science such as birth control techniques or even the termination of the pregnancies; it is still impossible to

make reproduction and female body separable from the each other. This position of female body may lead to two different argumentations. First argumentation would possibly be occurred from the sides of optimistic or conservative views when it is thought that ‘pregnancies’ natural space is kept’. However for the second argumentation it would be possible to see that the wombs of the female bodies had already been instrumentalized, and even commercialized for the reproductive and assisted reproductive aims. It is generally known that Nazi Germany had regarded women as the tools for the reproduction of Arian German race and had ordered its citizens to choose the best qualified partner to reproduce.

As mentioned above, sexuality is generally used as the natural reproductive way of human kind. Rationalization and the consciousness of human about mortality directed or forced him to change the meaning of sexuality and thus reproduction. In his introduction to ‘The History of Sexuality,’ Michael Foucault argued convincingly that in all its manifestations, whether those known since time immemorial or such as have been discovered or named for the first time, sex served the articulation of new – modern- mechanisms of power and social control (Bauman, 2001: 232). This side-function of sex had a wide contribution to the rationalization of the society and the individual. Especially, at the level of body, there is an extensive theoretical discussion in the field of sociology.

According to Turner (1995: 209), Foucault’s sociological and historical analyses of knowledge and power have proved to be extremely useful in the area of medical sociology. Foucault (Chomsky and Foucault, 2006: 153) discusses the reasons of obeying a power and asks what made power hold good or accepted. It is:

‘...simply the fact that it doesn’t only weigh on us as a force that says no; it also traverses and produces things, it induces pleasure,

forms knowledge, produces discourse. It needs to be considered as a productive network that runs through the whole social body, much more than as a negative instance whose function is repression (Chomsky and Foucault, 2006: 153).’

For his immense contributions in medical and sociological argumentations over his interpretation of power, Turner (1992) could develop a particular focus on the body and populations with the help of Foucault’s writings. In his book “*Regulating Bodies: Essays in Medical Sociology*” Turner (1992: 152) gave a short history of ‘the body and medical sociology’; the main characteristics of this process were:

- Foucault’s (1980: 151; quoted from Turner, 1992: 152) argumentation over sociology’s origins in nineteenth-century social medicine (specifically in enquiries into the health status of the working classes of the large industrial cities).
- Suggesting that medical sociology ‘emerged in the health economics of the earlier twentieth century, was elaborated as an applied science as a consequence of research into the morale of American soldiers’ (Clausen, 1987; Elinson, 1985; quoted from Turner, 1992: 152),
- Talcott Parson’s concept of the sick role (Parsons, 1951; quoted from Turner, 1992: 152).
- These developments in sociology about medicine led sociologists, (following Strauss, 1957: quoted from Turner, 1992: 152) to make a distinction between sociology in medicine and sociology of medicine⁵.

⁵ *The sociologist in medicine* is a scientist who works directly with medical professionals in studying the socio-cultural conditions that are relevant to the existence of illness such that the problems of sociology in medicine are primarily defined by professional groups outside sociology itself (Turner, 1992: 152);

- After the institutionalization of medical sociology as a branch of sociology serving powerful institutions, many sociologists welcomed the emergence of the sociology of health and illness, which specifically addressed the social causes of illness and disease, often from the patient's point of view rather than from the élite professional perspective.
- By Ivan Illich's *Medical Nemesis* (1975) and Vincente Navarro's (1977; 1978; 1986) Marxist work, alternative radical perspectives on the political economy of health and illness were signaled.
- The importance of the sociology of the body for the development of medical sociology was widely recognized,
- Body has been subject to a long historical process of rationalization and standardization (Turner, 1995: 210). According to this standardization, the body converted into the focus of many scientific fields which include medical profession. Clinics and teaching hospitals have become the evident for the concept of Foucault's 'medical gaze:'

'...This framework provides an organizing principle for looking at the problem of sickness at the level of the clinic and hospital, and finally at the emergence of a bio-politics of populations whereby the state through its various local and national agencies constantly intervenes in the production and reproduction of life itself. With technological change in the production and termination of life processes, the state has become increasingly involved in the legal dispute over the character of life – its origins, shape and destiny. To some extent these conflicts raise at an acute political level the features of modern patriarchy, since the state is now involved in the technical, political and ideological battle over women's bodies (Turner, 1995: 210).'

The character of *sociology of medicine* is no different from any other core component of the sociological curriculum and it may be defined as 'research analysis of the medical environment from a sociological perspective' (Cockerham, 1986: 2; quoted from Turner, 1992: 153).

Another transformation in the pregnancy examinations and experiences of women is discussed anymore. The responsible thing for this is especially pregnancy screening and many other reproductive choices. The natural structure of pregnancy is transformed into a problematic situation. Pregnancy becomes a case of risk (Beck-Gernsheim, 1990); Silja Samerski (2002) speaks about a shift from “good hope” to “bad expectations;” Barbara Duden (2000) describes this change from a haptic experience to a medically defined reproductive process; Barbara Katz Rothman (1989) argues that prenatal testing has led to pregnancy on a trial basis: the tentative pregnancy (quoted from Wieser and Karner, 2006: 31). All these approaches need the critical explanation of Rose’s (2007: 11) conceptualization of ‘molecular biopolitics,’ which means a sort of reduction of the bodies to mere limbs, organs, tissues, flows of blood, hormones [socio-biology may be criticized in this point], and so forth; in other words ‘molar level.’ According to Rose (2007a: 15), molecularization is not sufficient on its own; as we shall see, many other factors must be added – notably standardization, regulation and even ethics – to make up circuits of vitality. At this molecular level, that is to say, life itself has become open to politics.

2. 3. Biotechnology for ‘Commercial’ and ‘Personal Use’

It is undoubtedly biotechnology, which reduced the nature and the future of people into ‘molecules’. It is again the same technology, which led recent generations to discuss ‘which tomato is natural or not?’ It will be the same technology which will possibly make future generations to ask ‘is there any natural

beauty, intelligence, or anything else?’ The unnatural character of biotechnology, its interventions in the genes [oocytes and sperms] and combination of them among any living organism and their possible negative effects over next generations are under suspicion especially since the developments in the technology were recognized. Firstly, it should be clear that what biotechnology was.

In Great Britain, biotechnology means “the application of biological organisms, systems or processes to manufacturing and service industries” (Markle and Robin, 1985: 70); the European Federation of Biotechnology defines the term as “the integrated use of biochemistry, microbiology and engineering sciences in order to achieve technological (industrial) application of the capabilities of micro-organisms, cultured tissue cells, and parts thereof” (Markle and Robin, 1985: 70). Then it is possible to summarize the definition of biotechnology for the European Federation of Biotechnology as a usage of biochemistry, microbiology and engineering sciences in reducing the living organism to molecular level.

According to most European definitions, biotechnology includes the processes of baking and brewing, as well as recombinant DNA. Indeed at a 1984 conference on “Biotechnology: Long Term Development,” European scholars viewed biotechnology as developing slowly and steadily out of 19th century industrial processes and thus minimized the historical impact, importance, and uniqueness of recombinant techniques (Markle and Robin, 1985: 70). However recent rapid and important developments in biotechnology show their mistake in such estimation.

While the Japanese consider biotechnology to be “a technology using biological phenomena for copying and manufacturing various kinds of useful

substances,” the US National Science Foundation defines biotechnology as “the controlled use of biological agents, such as micro-organisms or cellular components, for beneficial use (Markle and Robin, 1985: 70).” Some questions are asked especially for a better understanding of ‘beneficial use,’ such as ‘who will use this technology for their benefits?’ This question emerged especially after the modern use of biotechnology came to the agenda.

Bud (1991: 417) has drawn a parallel with the battle between Ancients and Moderns in the seventeenth century. Each view is grounded in its own history of biotechnology. While the ‘moderns’ emphasize the dependence on new results in molecular biology: biotechnology can only be traced back as far as the discovery of the DNA structure, in 1953; the ‘ancients’ emphasize, by contrast, ‘there is nothing new under the sun’. According to them, it may be associated the alternative historiography of three generations of technology – beginning with the ancient Babylonians and Egyptians and the craft of brewing, succeeded, after millennia, by the rational fermentation informed by the microbiology of Pasteur, leading finally to modern biotechnology, underpinned by today’s genetically based molecular biology (Bud, 1991: 417). It is obvious that the modern thought tend to be more open to the commercialization and so, patentability of life. This differentiation is also seen in the definition of OTA (The Office of Technology Assessment) which distinguish between “old” and “new” biotechnology: The former refers to broad-based European industrial concerns, the latter to the largely U.S. “industrial use of rDNA, cell fusion and bio-processing techniques (Markle and Robin, 1985: 71).” As it is known, ‘the Human Genome Project’ is regarded as the turning point of new biotechnology. Via this project, gene therapy is expected to be the outcome: “...all diseases, even

infections, have a genetic component, and the best possible treatment in many cases would be to repair the genetic defect that permits the disease” (Wade, 1999: quoted from Rabino, 2003: 31).

According to Erbaş (2009, 2), modern biotechnology was used firstly in the medical field and by the widespread use of this technology, it is adapted to agriculture by the companies which produce seed; current fields of application of this technology is being added every day and it [biotechnology] is therefore increasingly effective. However there are still various problems in its use in developing countries.

The modern bioresarches and controversies in bioethics for developing countries were eventually started by Second World War (Bhutta, 2002: 115):

“...Events during the Second World War, with widespread atrocities committed by Nazi scientists and physicians under the guise of medical experimentations, led to global outrage for human research, namely the Nuremberg Code (Shuster, 1997: quoted from Bhutta, 2002: 115). In 1964, the World Medical Association Declaration of Helsinki took this process a step further and underscored 12 basic principles for the conduct of human biomedical research (World Medical Association, 2000; quoted from Bhutta, 2002: 115)”.

However these basic principles were not adequate for explaining genetic research in developing countries. For this reason the Council for International Organization of Medical Sciences (CIOMS), which, in collaboration with WHO prepared a guideline for international research and still undergoing further revisions (Bhutta, 2002: 115). The International Genome Project is begun in 1990, got funding from both the US National Institutes of Health (NIH) and the Department of Energy (DoE) (Buxton and Turney, 2007: 73). It is argued by many people that the project’s price tag was over all the estimations.

If technology is regarded as value-neutral, there should be some directions on the tool which cause the ‘good’ or ‘bad’ use of the technology. In addition to its

general (so-called) ‘good’ use in agriculture, medicine, husbandry, etc.; there are some other markets for ‘bad’ uses of biotechnology. According to Kass (2009: 9), biotechnologies are available as instruments of bioterrorism (for example, genetically engineered drug-resistant bacteria, or drugs that obliterate memory); as agents of social control (for example, drugs to tame rowdies and dissenters or fertility-blockers for welfare recipients); and as means of trying to improve or perfect our bodies and minds or those of our children (for example, genetically engineered “super muscles,” or drugs to improve memory or academic performance).

Especially, the final assumption of Kass (2009) is related to research questions of this study. As the writer underlined, there are modern outputs of biotechnology which are similar to Huxley’s well-known novel of ‘Brave New World.’ In that novel, there was ‘soma’ widely used on that world in order to eliminate stress, unhappiness or disappointment from the daily lives and minds. Kass (2009: 10) underlined that Ecstasy was used widely by the time on college campuses and seemingly safe antidepressants and mood brighteners like Prozac was used in the treatment of major depression. It means that making brave new world become real is possible and already done for many writers. There is an ongoing change [a so-called enhancement] from our genes to our moods is point at issue especially for biotechnological applications.

As it is understood, since its modern use became widespread, biotechnology has been in our daily lives for many years in shape of drugs, contraceptives, diagnosing, even in cleansing chemicals, hair growing shampoos, tissue and organ implantations, cosmetics like anti-aging creams, growth hormones, animal foods and animals, canned food and foods, chips and even baby foods, and so on. In Europe,

the environmental movement is more firmly opposed to biotechnology than is its counterpart in the United States and has managed to stop the proliferation of genetically modified foods there dead in its tracks; but genetically modified organisms are ultimately only an opening shot in a longer revolution and far less consequential than the human biotechnologies now coming on line (Fukuyama, 2002). As Bateson (1922: 57) wrote,

‘..though knowledge advanced at a great rate, and though whole ranges of phenomena which had seemed capricious and disorderly fell rapidly into a co-ordinated system, less and less was heard about evolution in genetical circles, and now the topic is dropped. When students of other sciences ask us what is now currently believed about the origin of species we have no clear answer to give..’

It is obvious that, our present and future is under the control of biotechnology, particularly under its reproductive applications. Because it is directly used and has short-term outcomes: election, abortion of undesired and selection of desired matters. Of course nobody knows if genetic engineering would be cheaper and more accessible as abortion or sonograms or not (Fukuyama, 2003: 102). Again here, it is assumed that assisted reproductive technologies will be cheaper and more accessible as other techniques in order to make possible assumptions over eugenics. In other words, if an equality in the access of these techniques is provided there will possibly an eugenic tendency occurred towards the rational preferences of prospective parents. Then an inequality in the access of these technologies may be suggested to keep the general variety. It will be underlined again in the final section of the study.

Here, eugenics should be reminded and explained in order to see the relationship and similarities between the aims of reproductive biotechnology and eugenics.

2.4. From 'Eugene' to 'Bio-power'

Eugenics is derived from the Greek word *eugenes*, meaning “well-born” or “good in birth” (Gray, 1999: 84; quoted from Mehta, 2000: 223). In the late 1800s, eugenic thought began to expand and huge problems occurred. Galton’s –who was a cousin of Charles Darwin - objective was to develop the “perfect” group of people through selective breeding, by encouraging upper-class “superior” people to reproduce (Mehta, 2000: 223). However they were merely able to choose the right partner to make this aim real. This practice was named ‘positive eugenics’. Some writers named it as ‘enhancement.’ The worse thing is, the success of efforts to encourage some people to have more children required the subjects’ active cooperation (Paul, 2007: 4).

Eugenics did not just mean encouraging parents of the right “quality” to have more children (positive eugenics); it also took in discouraging the less promising specimens of humanity from breeding (Buxton and Turney, 2007: 154). According to Paul (2007: 3), the standard narrative features racists and reactionaries – often Nazis – and policies that are “negative” (that is, they are aimed at preventing or discouraging some people from reproducing), mandated by legislation, and coercively enforced: in these obligatory historical synopses, eugenic policies were based on “pseudo-science”.

Parallel with these explanations, the Nazis believed that if any German citizens were diseased, were born physically or mentally disabled, or were part-Jewish, it was necessary to sterilize them to prevent further breeding. The Sterilization Law passed in 1933 permitted the Nazis to practice this form of ‘racial

cleansing' (Caplan, 1992: 44; quoted from Mehta, 2000: 224). That cleansing named 'negative eugenics' which was practiced to discourage 'undesirable' individuals from reproducing.

From the distinction between 'therapy' and 'enhancement,' the eugenic direction is explained as:

"...Therapy is the use of biotechnical power to treat of individuals with known diseases, disabilities, or impairments, in an attempt to restore them to a normal state of health and fitness. "Enhancement," by contrast, is the directed use of biotechnical power to alter, by direct intervention, not disease processes but the "normal" workings of the human body and psyche, to augment or improve their native capacities and performances," (President's Council on Bioethics, 2003).

Therapy (ex. Gene therapy for cystic fibrosis or Prozac for psychotic depression) is always ethically fine, enhancement (ex. Insertion of genes to enhance intelligence or steroids for Olympic athletes) is, ethically suspect (Kass, 2009: 12).

Moreover, Green (2009: 52) underlines the technical distinction between 'therapy' and 'enhancement,' namely 'somatic cell gene transfer' and 'germline gene therapy' through a related case. Over this case, somatic cell gene transfer is explained below:

"...Children, usually boys, who are born with this disease (X-SCID) have impaired immune system cells and cannot ward off infections or cancers. The youngsters in this experiment had already failed on the only available alternative treatment, matched bone marrow transplant. In the experiment, some of the bone marrow was removed from each child's body and infected with a virus capable of carrying corrective genetic material into his cells. The genetically transformed cells were then injected back into his body. Because this therapy is applied to bodily and not to reproductive cells, the changes cannot be transmitted to offspring. If one of the boys in this experiment survives to reproductive age and has a son that is born with the disease, that child will have to undergo therapy on his own..." (Green, 2009: 52).

However there is a big difference in the side of germline gene therapy:

"...by contrast, affects the reproductive cells. This can be a result of treatment done very early during embryonic or fetal development, when

any treated cells are likely to form part of the reproductive system. Or it can result from gene therapy administered to the sex cells of parents. For example, it might be possible in the future to alter the sperm or eggs of X-SCID carriers so that none of the children born to them would suffer from the disease. Largely because of safety concerns and the fear of inadvertently introducing inherited genetic defects into the human population, there is a consensus, supported by most national regulations, that germline gene therapy should not be undertaken at this time...” (Green, 2009: 52)

Since the line between therapy and enhancement is seem controversial in many respects, Kass (2009) and many other critical writers (include the writer of this study), are suspicious about the subject. The main questions of this suspicion are being asked around the concepts of “more, better, normal, abnormal, super-normal, good, acceptable, etc.” In addition to his critical thoughts about Kass, Green (2009: 52) has similar thoughts with Kass on this subject: “I am of the opinion that to some extent treatment and enhancement go hand in hand.”

Similarly, Rabino (2003: 42) writes similar comments which are comparison of gene therapy with existing modifications by elective medicine – surgical procedures or treatment with drugs – and to environmental intervention: “If safe and effective, why would gene Rx be more ethically problematic than a hair transplant?,” “If you were offered “smart pills” or anticancer pills to take in pregnancy, wouldn’t you want to? You already take folic acid (“close-the-spine-pills”), “We already do all this in raising our children: music lessons, sports lessons, tutors, hair dye, perms, contact lenses, plastic surgery. I see no difference”. Liao (2005: 117) shares Rabino’s examples and asks: “...as we grant parents much power in shaping the social identity of a child, why should parents not be permitted to shape the genetic identity of a child – in particular, to alter the sex of an embryo without the embryo’s consent?” His answer is clear: ‘...parents actually do not have total power over the social

identity of their children, whereas they would in the case of the genetic identity, assuming that genetic engineering is feasible.’ An example from Liao (2005: 117)’s related article is considerable in respect of determining the sex of the child:

“...The Constitutional Court of Colombia was asked recently to determine whether biological parents have the authority to subject their intersexed children to surgery. The Court ruled that biological parents do not have such authority, by arguing that biological parents should put the child’s best interest ahead of their own fears and concerns about sexual ambiguity.”

And Liao interpreted this kind of surgery as typically non-health related and irreversible. I personally think that Foucault (Chomsky and Foucault, 2006: 161) gave a stop (or may be a start?) for these sex discussions by defending his belief on the political significance of the problem of sex is due to the fact that sex is located at the point of intersection of the discipline of the body and the control of the population.

The clear majority, hammer at the immorality of enhancement as a goal, is calling capricious changes “cosmetic” and improvements “eugenic” (Rabino, 2003: 43). In his book, Harris (2007: 86) wrote: no enhancement however dramatic, no disability however slight, or however severe, implies lesser (or greater) moral, political, or ethical status, worth, or value. This is a version of the principle of equality. Again Harris (2007: 89) asked: Is it wrong to prefer to produce a non-disabled child and attempt to achieve that preference:

- By wishing and hoping?
- By behavior modification?
- By postponement of conception?
- By interventions, therapeutic or enhancing (including gene therapy)?

- By selecting between pre-implantation embryos?
- By abortion?

This thesis examines and discusses nearly all of the factors mentioned by Harris above. However, the main factor is surely the first and the most intricate one: “wishing and hoping”. Because these feelings constitute main base for the reproductive decision of course in line with the factors which are effective in creating these personal wishes and feelings.

These personal choices of prospective parents make one to take the Laissez faire eugenics of Kitcher (1996: quoted from King, 1999: 178) into consideration: he has dubbed the current situation “laissez faire eugenics” in order to capture the way that social “market forces” result in predictable outcomes, even though everyone still has a nominally free choice.

King deworded this concept as ‘consumer eugenics’ in his writings and he says that he did not claim that the present system was anywhere near as harmful as the earlier state-sponsored eugenics; clearly, for many people who wished to avoid the birth of disabled children, it was experienced as highly beneficial. As Rifkin (1998: 139) mentioned the possibility of creating a new eugenic woman and man is not a dream of furious political demagogues anymore, rather it is a consumer preference and possibly profitable commercial market which will be accessible very soon.

This new technology creates some controversial issues related to its possible social results as defined shortly above. However, it would be useful here to underline the well known eugenic practice, Nazi Germany.

The aim of the eugenic movement which was held in the late 1970s and early 1980s is reduced to 'genocide.' The social, psychological and historical effects of the movement have still been felt. Even if the 'genocide' which was accepted as a tool for 'holocaust,' the pupil of Nazi and other eugenicists accepted it as a truth, and as a work which was directed by their own 'reason.' The successful and brilliant leader of the group had discoursed to the supra-identity of his German people. He named them as 'superior' or 'Arian' race, and also made them believe in this. As a result of this, he found out a society in which people's 'reasons' would serve Nazi thought with a sympathy for such an irrational 'rationality' and for his policies as their own thoughts, and a society deprived from all humanistic values.

As it is mentioned above as the general characteristics of eugenics, Nazi thought also wanted to remove undesired people from the society (negative eugenics) and to encourage the desired ones' reproduction and thus to achieve the 'Arian race' (positive eugenics). To make these applications real, they did not even hesitate to make 'slaughters' and moreover, to use science and technology, and specifically biology and anthropology and genetic sciences and scientists. Physicians and psychiatrists, mostly professors, hospital directors, and bureaucrats, directed the T4 killings and also served as medical experts⁶ to select the victims whom, however, they never saw (Friedlander, 2002: 59). It is embarrassing that many technological developments in especially genetics and medicine today owe many things to the political directions in technology in Nazi Germany and to the wars happened before and after that time. The worse thing is it is still possible and accessible to use science and technology and their experts for political and eugenically aims.

⁶ Almost every SS physician at Auschwitz did experiments: many were young and inexperienced physicians who wanted to learn. They took instruction from renowned inmate physicians, had them write their papers, and did experiments to get degrees or for publications (Friedlander, 2002: 70).

The most important and famous development in reproductive biotechnology is shifted from ‘infertility treatment’ to the ‘diagnosis of genetic disorders / diseases’ through genetic testing and even to the ‘embryo selection without genetic disorders /diseases’ through Pre-Implantation Genetic Diagnosis (PGD) and to inseminate these selected embryos to the womb through In Vitro Fertilization (IVF). The former of these new missions, ‘diagnosis,’ would lead the prospective mother to the termination of that pregnancy if the result seems like as ‘abnormal,’ and also if professionals or gynecologists and the social environment of the woman canalizes in that way. This process reminds us negative eugenics because there is again a destruction of undesired individuals, the only difference is, this time they are unborn. The latter one chooses the ‘normal’ individual before the insemination and inseminates it to the womb and gives that embryo the right to live. So it reminds positive eugenics. No one can know if this new eugenics would be succeed by the personal preferences of mother and father candidates or not; but one can know that here is an emergent necessity of reexamination of nearly all humanistic values and concepts on behalf of technology, society and ethical values.

The conceptualization of ‘bio-power’ is remarkable here in order to see and give a meaning to the recent and partially different eugenic applications through reproductive biotechnology. ‘The body’ was transformed into a focus of the clinical gaze as Foucault wrote and it is mentioned before. Rose (2007: 4) underlines the transformation of ‘medicine’ as: ‘it became techno medicine, intensely capitalized, highly dependent on sophisticated diagnostic and therapeutic equipment’ and ‘Patients’ as they ‘...became ‘consumers’ actively choosing, and using medicine, biosciences, pharmaceuticals and ‘alternative medicine’ in order maximize and

enhance their own vitality, demanding information from their doctors, expecting successful therapies, and liable to complain or even go to law if they are disappointed' (Rose, 2007: 11). As Illich (1995: 1653) wrote:

‘...Medicalization led people to see themselves as two legged bundles of diagnoses. It did not, however, disembody self perception; today, systems’ thinking does. People now watch the curve of their vital parameters. As they approach the end of their “lives”; they have been under professional management – some since well before birth.’

As ideal consumers, people took this technology which was developed and transformed over these consumers bodies and put it in the centre of their lives, namely reproduction. The concept of ‘reproduction’ is the most related subject to life and death, in other words, the most natural functions of humanity.

In the eighteenth century, at least in Europe, Foucault argued, political power was no longer exercised solely through the stark choice of allowing life or giving death (Rose, 2007: 52). The ‘letting die (*laissez mourir*), making live (*faire vivre*),’ namely ‘biopower’ conceptualization is mainly based on Foucault’s bipolar diagram of biopower (in volume 1 of *The History of Sexuality*). While the one pole of biopower focuses on an anatopolitics of the human body, seeking to maximize its forces and integrate it into efficient systems; second pole is one of regulatory controls, a biopolitics of the population, focusing on the species body, the body imbued with the mechanisms of life: birth, morbidity, mortality, longevity (Foucault, 1976: 139: quoted from Rabinow and Rose, 2003: 2).

Giorgio Agamben (quoted from Rabinow and Rose, 2003: 8) identifies the Holocaust as the ultimate exemplar of biopower; and biopower as the hidden meaning of all forms of power from the ancient world to the present. While

Agamben was attributing the concentration camps, labor camps and death camps of the Nazi's as the "nomos" of modernity; Rabinow and Rose (2003: 8, 9) considered that Holocaust was not an exceptional moment of throwback to a singular barbarianism, but an enduring possibility intrinsic to the very project of civilization and the law and was undoubtedly one configuration that modern biopower could take.

Then biopower or biopolitics is something which may occur both as visible as Holocaust and as invisible as molecular level. Here, this conceptual framework will go on with explanations over some biotechnological diagnoses and treatment methods which were discussed in the *Genomic medicine* (Rabinow and Rose, 2006: 212) or *Molecular biopolitics* (Rose, 2007a: 6) topics of these writers by sharing their argumentation over the issue: '...For its advocates, the genomic identification of functional pathology must inevitably open a path towards molecular intervention; but to the degree that this logic proves impossible to release, genomics will remain only one dimension of health care and biological understanding, one that gains its intelligibility within a wider field of knowledge on the aetiology, prognosis and treatment of disease (Rabinow and Rose, 2006: 16).

2.5. Pregnancy Screening: Aims and Results

2. 5. 1. Genetic testing

Genetic testing is a pivotal component of diagnosis. People who are suspicious about having genetic disorders in their genes or have some relatives with a genetic disease in their family prefer to undergo a related genetic test. Genetic

conditions, also called genetic disorders, are caused by changes (mutations) in genes that affect the way how the body works or looks. Although it is individually quite rare, – cystic fibrosis, for example, affects approximately one in every 2500 babies born – there are thousands of different genetic disorders. Taken together, this means that an estimated two to three percent of all babies are born with a genetic or chromosomal condition – approximately 13, 000 births every year in the UK (Buxton and Turney, 2007: 115). Not a subject of this study, but, in addition to pregnancy screening, an expanded newborn screening program was recently recognized⁷ of which contents differ country to country that constitutes another ethical standing.

The knowledge and uses of genetic information is the most integral part of the discussions of this subject. Rabino (2003a: 385) asks who has the right to have information about that individual? Should certain others be considered patients just as much as the person the physician sees? Has the physician-patient relationship enlarged from “duality” to “multitude?” And what of “the presence of others,” genetically and socially unrelated but “intensely interested” in the individual or family “under investigation” (Jonsen 1996: quoted from Rabino, 2003a: 385): insurers, employers, public health officials, police, the military, and government.

According to Buxton and Turney (2007: 142), couples at risk of having a child affected by a serious genetic disorder may opt for genetic tests during pregnancy (prenatal tests) – or, in some cases, embryo tests combined with in vitro fertilization (IVF), which has triggered media hysteria over so-called “designer babies”, despite its limited use at present. However it was not the chance factor that made Peter (1971: 1137) ask the core questions about this subject early, in 1971:

⁷ : By January 2007 seven European countries had expanded, and more are considering the expansion of their newborn screening programmes by inclusion of ESI (electrospray ionization) tandem mass spectrometry (Bodamer, et.al., 2007: 439).

“...As population control through the limitation of progeny becomes reality, prospective parents will be more concerned about the quality of their children. Will they demand the ‘right’ of genetic counseling? How will we decide which defects constitute reason for abortion and which do not? Will future genetic knowledge alter our understanding of the term ‘disease’ is now considered a mild or inconsequential anomaly become an undesired defect? Who will make these determinations?” Unfortunately, answers for the most of the questions of Peter recently came out to be ‘Yes.’ Prospective parents are more concerned about the quality of their children and these so-called personal preferences of them introduce some determinations upon the modern understanding of ‘disease.’ Personal preferences are stated as ‘so-called’ here just owing to the fact that as it will be seen in the ‘Findings’ of this thesis, these preferences are also determined by many actors and socio-economic, cultural and personal factors.

It is accepted by old and new researchers on this subject that both pre-natal and embryo testing, along with screening programmes to detect serious genetic disorders, have also sparked lengthy debates on whether modern genetic medicine represents a resurgence of eugenics (Buxton and Turney, 2007: 142). Eugenics is recently point at issue for many applications of assisted reproductive biotechnology. Many people are irritated and afraid of having another eugenic experience. George Annas (2002: 170), a lawyer and bioethicist at Boston University, is proposing a global ban on reproductive cloning and all interventions in the human germline including those aimed at curing genetic diseases.

What are these interventions? Do they include routinely applied pregnancy screening which is conducted through ultrasound screening and genetic testing by the

experts or gynecologists in the pregnancy period of women? It is known that genetic testing constituting an important part of pregnancy / prenatal screening.

2.5.2. Screening for Diseases

Prenatal testing is now a standard part of a woman's antenatal care, whether she is under the care of her general practitioner or a hospital obstetric department: a wide number of conditions can now be diagnosed antenatally, including congenital intra-uterine infections such as rubella, neural tube defects, Tay-Sachs disease and Down's syndrome (Brown, 1990: 75). However, the decision maker is regarded as the prospective mother for many institutions. For example, The National Screening Committee emphasizes that decisions to have any antenatal tests, including the 'dating' scan and more detailed 'anomaly' scan are to be made by women themselves; for example, in 'Screening tests for you and your baby' they write: "it is important that you understand the purpose and possible results of the screening tests before you make your decision." (NIHR-SDO project, page 5, 2011: 21). Some scans during the pregnancy are (NIHR-SDO, 2011: 21):

- The 'dating' scan (8-14 weeks): Estimates gestational age; it is not listed as a screening test by the NHS (National Screening Committee).
- 'Nuchal Translucency' scans (11-13 weeks): In some areas a nuchal translucency scan is also carried out to estimate probability of Down's syndrome.

- The ‘anomaly’ scan (18-20 weeks) expects to pick up neural tube defects and some heart conditions.

As it is well known by anyone, 20 years ago there were no pregnancy screening tools for pregnant women neither in Turkey nor many other countries. Rösch, Steinbicker and Kropf (2000: 627) examined the distribution of these tests in the German Federal States (former GDR) in the light of political and social structure of the region. In 1980, prenatal cytogenetic diagnostics was established everywhere in the former GDR, and was offered to women of 35 years and over⁸. However, in those times, Germany was also not properly-equipped for screening tests so that these tests on maternal serum were not available in the former GDR and there was a lack of effective ultrasounds. The triple test was introduced very quickly after 1990 and the quality of prenatal ultrasound diagnostics was brought to a high standard (Rösch, Steinbicker and Kropf, 2000: 627).

Even in 1990s, pregnancy follow-up visits were generally based on mere professional experience of gynecologists in Turkey. Nowadays, not only gynecologists but also geneticists work for reproductive problems and pregnancies. As a result of these efforts, parent candidates want to do everything that they and reproductive technology can for their unborn health. Thus, policy regulations and reproductive market are still being prepared for these new technology products and services which serve to pregnant women, namely, for pregnancy screening. Pregnancy screening is covered by health insurances in many states while it is partly

⁸ Because there was a decrease in the birth rate by 60% and both the average age of women at the birth of their babies and the percentage of women over 35 years old rose amongst all mothers: this would have been expected to lead to an increase in the prevalence of Down’s syndrome.

or not covered in many others. This unequal position of pregnancy screening may lead to some critical argumentations related to the access to pregnancy screening.

Pregnant women can also be screened for recessive conditions such as hemoglobinopathies (sickle cell disorders, beta thalassaemia major, etc.) or Tay-Sachs disease that involves molecular genetic tests (Ettore, 2002: 27). Hence, this process, which is known as pregnancy screening, goes hand in hand with ultrasound scanning and blood tests which were widely known as Down syndrome testing or trisomy 21 or triple test as it is stated in the example of former GDR. Via these tests and blood tests, prospective parents have a chance to see and find out how pregnancy and embryo is going on and to have an emotional link with the unborn.

However, after this finding and emotional link process, prospective parents may hear that their baby was under a risky position and thus, the measures and ultrasound statistics were implying that a deeper scan was necessary for that pregnancy. For NIHR-SDO (2011: 24), a diagnostic test such as CVS and amniocentesis is offered if screening tests undertaken early in pregnancy (such as AFP blood tests, nuchal fold scans or sickle cell and thalassaemia genetic screening) suggest risk of fetal abnormality: National Screening Committee information resources explain that CVS (Chorionic Villus Sampling) can be undertaken from about 11 weeks of pregnancy in a specialist centre; amniocentesis can be undertaken from about 16 weeks of pregnancy and they each bear a risk of miscarriage (around 1 percent for amniocentesis and 1-2% for CVS).

Amniocentesis or CVS comes to the scene just after its previous steps. Traditionally, prenatal genetic screenings take place after a woman is already pregnant, either through chorionic villus sampling (CVS), a technique in which a

small piece of placental tissue is removed early in the pregnancy for genetic testing and chromosomal analysis, or through amniocentesis, in which amniotic fluid is removed during the second trimester and used for analysis: A woman is thus faced with the choice whether to terminate her pregnancy based on the test results (The Harvard Law Review Association, 2005: 2771).

However, some disadvantages and controversial issues in CVS were claimed by some scientists. One of them was Judith A. Boss. According to the writer, the emotional costs of CVS in terms of the greater number of both spontaneous and selective abortions following CVS, the use of CVS for sex selection and, because of the greater social acceptability of first trimester abortion, the possibility of increased pressure on women to undergo prenatal diagnosis by health insurance companies, medical professionals and government agencies, all need to be weighed against the advantages of early prenatal diagnosis (Boss, 1994: 146).

In addition to these disadvantages, Brigham, et. al. (1993: 31) claimed that, while amniocentesis was the most frequently adopted method of prenatal diagnosis, other methods of genetic testing could also inform prospective parents about the condition of an unborn child:

(1) Diagnostic ultrasound permits “reliable diagnosis of anencephaly” among other disorders, with one European study resulting in 102 correct diagnoses with no false positives or false negatives (Porter, Hatcher, and Willey, 1986: 287; quoted from Brigham, et. al., 1993: 34),

(2) Ultrasound is a non-invasive procedure that reduces even further the risks of fetal demise associated with amniocentesis and biopsy procedures; in addition because ultrasound provides a visual image of the fetus, it can detect organ defects

not detectable through amniocentesis (Sutton, 1990: 36; quoted from Brigham, et. al., 1993: 34).

For these reasons ultrasound is used in conjunction with amniocentesis or Chorionic Villus Sampling as a visual guide to avoid fetal injury during these more invasive procedures (Brigham, et. al., 1993: 34). Again, it is known that there are many possible complications related to CVS despite using a visual guide range from striking the needle on the fetus unintentionally to the loss of the fetus by the same reasons. Nevertheless, the result would lead prospective parents to keep on or terminate the pregnancy. Also for Zwieten (2008: 36), a prenatal diagnostic result is not merely information for professionals, but information they consider relevant for the parent's decision either to continue or terminate the pregnancy.

2.5.3. Abortion: Safe, Unsafe and Sex Selective

The discovery of fetal abnormality during pregnancy usually leads to termination: ending a pregnancy was almost always clearly described as a choice made by the woman or couple (NIHR-SDO, 2011: 27). However, according to a statement which was included in NIHR-SDO Project (2011: 27) again, a Bangladeshi woman wanted to continue with the pregnancy but her mother and extended family made the decision for her to terminate. This is a common and typical problem of especially developing world.

For Baldi (2001: 42-43), contraception, abortion, artificial insemination, IVF and in vitro babies should be viewed as milestones along the same path: these sexual biotechnological milestones progressively give humans more freedom and control,

and perhaps more balance between the sexes. These arguments are mostly controversial.

The process of making the decision of termination is examined in this study because it is directly related to social and also technological issues. However, the abortion is seen as ‘the autonomy of women’ by some people in the interviews which have been done for this study. This approach reminds the characterization of birth technologies and abortion policy linkage of Brigham, Rifkin and Solt (1993: 31). According to these writers, technology had sometimes been viewed as an autonomous part of life. In parallel with this, they refer to Winner (1977: 13; quoted from Brigham, et. al., 1993: 31) for mentioning the independence of technology: “...like science, technologies –from jet engines to laser disks – often seem to emerge from discovery and follow their “own course, independent of human direction”. However, as the same writers added, there are some other commentators who speak of an ability of policymakers to intervene and alter the course of technological development. In this study, the approach is similar to the second argumentation. There is no autonomy neither in the lives of women and technology nor in their directions or decisions about their beings. Both of them are inseparable parts of social lives. As a natural result of this, policy affects technological developments and both policy and technological developments affect decisions or directions of individuals and particularly, women.

Hence, the decision of termination of prospective parents is not only determined by the personal feelings and values of them but also affected by many socio-economic contexts. As argued by King (1999: 178), it is of course true that parents’ decisions over termination are affected by many factors, including attitudes

towards abortion, the degree of disability involved in particular disorders, the level of risk and their own personal histories.

Unfortunately there are still both safe and unsafe applications of abortion which differ according to the country in which it is performed. For Sedgh et.al. (2007: 1339), 'safe abortion' is an abortion in a country where abortion law is not restrictive, and that meet legal requirements in countries where the law is restrictive; and 'unsafe abortion' is an abortion done either by people lacking the necessary skills or in an environment that does not conform to minimum medical standards, or both. These include (a) abortions in countries where the law is restrictive and (b) abortions that do not meet legal requirements in countries where the law is not restrictive. Turkey is stated in their study (Sedgh et al. 2007: 1339) as a Western Asian country such as Armenia, Azerbaijan, Bahrain, Cyprus, Georgia, Iraq, Israel, Jordan, Kuwait, Lebanon, Occupied Palestinian Territory, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab and Yemen where 0.8 safe and 0.4 unsafe abortions are underwent in total (Sedgh et. al., 2007: 1340).

Although prenatal diagnostic techniques are on the rise, the availability of abortion and related services has been significantly curtailed by the controversy (Brigham, 1993: 41). According to Vandertak (1974: 7; quoted from Brigham, 1993: 41), there is a distinction, in practice, between the *de jure* and *de facto* status of abortion: means the cost and the willingness to provide the service. The cost of abortion was important in the past and still it is an important factor in deciding to undergo that application or not or undergoing it safely or not. In other words; in order to have the abortion cheaper people, who have low income, may prefer to

undergo an unsafe abortion or worse, they may prefer not to undergo abortion and bear the child. Anyone can predict the living standards of that child.

Via continuous developments in reproductive technology, not only legal or illegal, safe or unsafe abortion but also ‘sex selective’ abortions are performed more or less in comparison within the countries. It is possible to use amniocentesis and CVS techniques to practice sex selection. According to Brigham et. al. (1993: 35), first examples of this fear were seen in China⁹ and Soviet Union: ‘...with China’s one-child-per-family policy, and overpopulation problems in the Soviet Union, male children assumed an even more prestigious role than female children’ (Kammeyer, 1975: 376; quoted from Brigham et. al., 1993: 35).

When its historical roots are regarded, unfortunately, it should not be so difficult to estimate even the illegal rates of especially male children who born with the sex their parents desired. This issue is important with respect to its social effects.

Due to the developments in reproductive technology and biotechnology, the policies of many countries are re-regulated according to the changes. For an early example of US and as a result of the 1973 opinions, state policy would depend on (1) the safety of abortions in the first two trimesters relative to the safety of childbirth, (2) the determination of the fetus’ viability, and (3) the capacity to know the condition of the fetus (Brigham, et. al., 1993: 33).

⁹ An exceptional information about ‘China’s Biotech Revolution’ from Swedin (2006: 19): “The study of genetics came to China in the 1920s. After the communists took power, however, genetics work was stifled, much as it was in the Soviet Union. The excesses of the Cultural Revolution in China permitted little scientific exploration. Since 1978, with the end of the Cultural Revolution and the opening of China to vigorous economic expansion under the tutelage of the Communist party, the study of genetics has thrived. China is also pouring large sums of capital into developing its universities into more productive research centers. According to statistics released from the Chinese government, research and development expenditures in areas such as genetic and genomic research totalled about \$18 billion, roughly 1.3% of China’s GNP (\$1.4 trillion in U.S. dollars). It is not unreasonable to assume that in the next two decades China will become an important scientific player on the world stage, with world-class genetic engineering facilities and scientists and technicians to staff them”.

According to Yılmaz et.al. (2010: 157), the foundation of family planning services was laid by the 'Population Planning Law' in 1965 in Turkey. In 1983, the Population Planning Law was re-regulated and the services of sterilization and termination of pregnancies, the duties, authorities and responsibilities of staff were linked to detailed principals.

Through this law, the right to undergoing termination for their pregnancies in a hygienic environment until the 10th week of pregnancies was accorded, and the hospitals and health institutions were assigned to perform this function (Akin ve Özvarış 2001; quoted from Yılmaz et. al. 2010: 157). This law is similar with the application in Finland. In terms of the termination of pregnancy, it is allowed up to 12 weeks gestation for many indications by permission of one or two doctors and up to 20 weeks by special permission of the National Authority for Medicolegal Affairs in Finland. If the mother's life is in danger, the pregnancy can be terminated at any gestational age (Ritvanen, 2007: 77).

In Austria, termination of pregnancy is allowed irrespective of gestational age, if the pregnancy poses a serious threat to the pregnant woman's physical or mental health, or if there is a serious possibility that the child will be mentally or physically handicapped. However, in the case of non-lethal malformations, most doctors in Austria agree to terminate pregnancies only before viability (< 25 weeks gestational age). In the case of lethal malformations they will agree to terminate pregnancies after viability (Berghold and Hausler, 2007: 52).

There are countries where termination of pregnancies is forbidden such as Ireland. Termination of pregnancy is not legal in Ireland except in the most extreme circumstances. It is never allowed because of fetal abnormality. The number of

women who may go abroad for terminations because of fetal abnormality is not known (McDonnel, 2007: 98).

It is seen in this writing about the different applications and regulations on the legal timing of abortion that there are problematic situations also in the other applications of reproductive medicine and surgery. By the life experiences on these issues, it is estimated that the reliability on the legacy and governmental regulations are getting weakened. An individual, who decided to terminate her pregnancy over 10-12 weeks, is forced to blame herself and undergo an unsafe abortion in her country or to travel to another region of the country or to travel to another country where a termination of such an old pregnancy was ignored or permitted.

2.5.4. Understanding Disability

This subtopic is important for understanding the main reasons lie under the Pregnancy or Pre-natal or Pre-implantation Genetic Diagnosis. In fact, it was the point which forced the writer of this study to have some deep interviews with the parents of children with Down syndrome in order to comprehend the process better. At the same time, this is the fine line which stands between ethics and reproductive biotechnology.

One can do everything according to what his/her reproductive choice is, of course. However, as a possibility of eliminating disability from life, would affect not only one prospective mother or father, but also all other people who live and will live on Earth. When this line disappears, it will be more difficult to overcome with the elimination of former 'genetic disorders'. Namely, after single-gene defects in genes,

by the time cancer, heart diseases, diabetes, and even obesity, depression or homosexuality may be regarded as defects or disabilities and may be considered as 'genetic diseases'; which should be eliminated before insemination will be in question.

It is understandable to find people who want to use all the products or services of reproductive biotechnology in order to get healthy babies. On the other hand, one should be suspicious about the major intervention of geneticists in the professional field of gynecologists within the scope of pregnancy screening, Down syndrome tests, infertility treatment or sex selective pre-implantations. Nowadays it is easier to shape many features of the future generations via reproductive biotechnology than it is predicted. For the philosopher Philip Kitcher, eugenics is about humanity changing gene pool, specifically reducing the incidence of genetic disorders, whether it is government policy or the aggregate of individual decisions that brings this about (Gillot, 2001: ii21). Government policies tend to support such direction of the opportunities made by genetic research and individuals. However the main deterministic characters in such decision making process are still discussed.

King (1999) expresses social pressures which are important in determining these decisions. For King (1999), the key social pressure which affects parental reproductive decisions is the oppression of people with disabilities. This oppression affects them in several ways, (King, 1999: 178):

1. Able-bodied people receive negative images of people with disabilities and general misinformation about what their lives are like.
2. Parents are aware of the maternal aspects of disability oppression: insufficient welfare provision, lack of access and discrimination.

3. Women, who still bear the majority of responsibility for child care, are sharply aware that the extra burden of caring for a disabled child will fall on them.
4. Lack of adequate welfare provision, in particular, will affect not only the child but may create financial problems for the family, as well as increased stress.
5. Finally, these social pressures combined with the attitudes of geneticists and obstetricians and the structural bias introduced by reutilization of testing, guarantee that allowing parents a “free choice” results in a systematic bias against the birth of genetically disabled children, a bias that can only be called eugenic.

Again, disability should be understood in all aspects and people should overcome with its problems not only in laboratories, but also in all social and political areas. However, assisted reproduction technologies are developed to erase physical and mental disability from the world and to provide healthy babies by using laboratories. Namely, disability is a social problem and so it can be reduced and governed in the social life.

2.6. Assisted Reproduction Technologies (ARTs)

In some U.S. cities in 1900, up to 30 percent of all newborns died in the first year of life; today, the U.S. infant mortality rate is 7.2 per 1000 more than a 90 percent decline since 1900 (Green, 2009: 49). The success of Assisted Reproduction

Technologies (ARTs) is obvious with respect to the decline in the both infant and maternal mortality rates in the course of a century. However, the picture is not limited to this success.

Since the 1978 birth of Louise Brown, the world's first "test-tube" baby, ARTs have proliferated in number and in kind (Birenbaum-Carmeli and Inhorn, 2009: 1). Beginning with the development of in vitro fertilization (IVF), the past thirty years have seen the rapid and largely unregulated development of many ARTs: some of these technologies are simple variants of IVF, whereas others have bridged the fields of reproductive science and human genomics (Birenbaum-Carmeli and Inhorn, 2009: 1). The doctor of first test-tube baby Brown recently estimated that as many as two million children were born as a consequence of using various forms of assisted human reproduction, such as in vitro fertilization, donor eggs, donor sperm, and surrogate mothers (Personal communication of Bailey, 2004, quoted from Bailey, 2009).

In addition to IVF, the host of reproductive biotechnologies now includes many other techniques ranged from gay insemination to human cloning, as they are mentioned by Birenbaum-Carmeli and Inhorn (2009: 2). These developments lead to a more complicated and problematic reproductive life for people who could afford to get the technology.

According to Baldi (2001: 46), many areas of human sexuality, reproduction, and life cycle are affected by biotechnology, often in what seem to be paradoxical ways. One of his examples was about a virgin mother who gave a birth to a baby in 1990 while another was about a woman who got the sperm from her dead husband and inseminated them fifteen months later, in 1999.

It would be difficult to justify human cloning in helping infertile couples because of the existences of many alternatives, such as IVF, surrogate motherhood, and so forth (Baldi 2001: 146). However it is seen obviously that reproductive biotechnology enlarges its target group by stating some social and environmental situations like smoking, pollution, consanguineous marriages as some reasons of infertility for example in Middle East.

Birenbaum and Inhorn (2009) questions about ARTs' role in the infertility of Middle East men in their book of 'Assisting Reproduction: Testing Genes'. One of their questions was about the reasons of so much infertility. One of the answers was about living in increasingly polluted urban centers because the Middle East men who are living in these areas might be at increased risk of low sperm count and poor sperm motility due to environmental toxins. Secondly, they underline the significant amounts of caffeine and tobacco consuming of Middle East men (Birenbaum and Inhorn, 2009: 91).

One of the answers for this question was much more interesting for this study, it is: interfamilial marriage. Because interfamilial marriage, including with first cousins, is the preferred form in many parts of the Middle East (Inhorn, 1996; quoted from Birenbaum and Inhorn, 2009: 91), consanguineous marriage may put a significant percentage of Middle Eastern males at unwitting risk of male infertility (Inhorn et. al. 2009; Thomas and Jamal, 1995; quoted from Birenbaum and Inhorn, 2009: 91). This causality is interesting because as Eysel (2007) mentioned in her study that, interfamilial marriages may also cause genetically defected or in other words, handicapped babies which would need an emergency aid from biotechnology laboratories. Such marriages would cause defected babies and therefore 'abortions'

or ‘deaths’ in modern times, or ‘PGD’ in post-modern times. Via this information from Birenbaum and Inhorn (2009), it is possible to say that the healthy individuals of Middle East’s interfamilial marriages seat to biotechnology’s salt both from the side of their possible infertility and from the side of their possible handicapped future. Namely, biotechnology discovered interlink between ARTs and Middle East.

2.6.1. In Vitro Fertilization (IVF)

In vitro fertilization (IVF) is routinely performed today to help couples who are encountering difficulties in conceiving children through more traditional procedures: plain IVF consists in presenting an egg with a sperm sample in the laboratory (Baldi, 2001: 37). This explanation is very literal and closed. It should be added that IVF also helps couples whose chance to have children is zero because of their same sexes, through gay and lesbian insemination. Similarly, there may be examples of IVF babies of different species at the same time.

From an ethical standpoint, the idea of raising a human embryo/fetus in vitro for nine months is not particularly shocking, once good technology is available. It does not require altering the DNA or the personality of the new human being in any major way and again, this is already done for the first few days of life, and from the sixth to the ninth month (Baldi, 2001: 40).

Problems arise with the experiments required to develop the technology. Some required experiments could be performed on animals progressively closer to humans all the way to chimpanzees and gorillas, although this is bound to raise issues, with animal activists (Baldi, 2001: 40). After these trials, for the experiments on human

body, this technology would need again human body to get egg and sperm in order to create a fetus later. This need lead the commercialization of reproductive goods. Waldby and Cooper (2008: 59) argues that ‘women’s participation in the sale of eggs involves a very literal form of bodily, reproductive labor - a kind of labor that has been traditionally available to women but which has only recently been medicalised, technologised and standardized to an extent where it can be organized on a global scale’. In addition to egg donor, there are many other examples of this labor such as surrogate motherhood, intentionally chosen brother /sister births to save the previous child, etc. which should discuss under the light of ethics.

Another argument is this that technology could be used to help repopulate endangered species. But if the final goal was to produce human babies in vitro, sooner or later some experiments would have to be carried out on humans in the same way this was done to achieve IVF. The main considerations might be differences in stages of embryonic development that are involved, which are closer to those encountered in abortions (Baldi, 2001: 40). There are a wide number of redundant embryos created through IVF. Moreover, IVF causes multi-pregnancies because of its desire to increase the chance of having at least one living embryo. When this number increases such as three, four, five or more, technology and its agents offer the abortion of some of the fetuses in order to increase the living chance of at least one embryo in the womb again. In traditional countries where killing the baby also by abortion is banned or not offered by the religion, like Turkey, people may avoid undergoing an abortion even woman is pregnant for seven babies and may cause the death of all of the babies.

IVF was shortly explained above and it is obvious that it needs ethical attention especially in its intentional uses.

2.6.2. Pre-Implantation Genetic Diagnosis (PGD)

Pre-implantation Genetic Diagnosis (PGD), involves undergoing in vitro fertilization, performing a genetic test on a single cell removed from each embryo, then returning only unaffected embryos to the womb (Buxton and Turney, 2007: 148-149). According to the writers mentioned above (Buxton and Turney, 2007: 149), PGD is not widely used at present, since it is technically demanding, expensive (about £ 3000 – 5000 per attempt in the UK) and has a lower success rate than conventional IVF; but the ability to select embryos on the basis of an inherited characteristic has probably triggered more debate and media interest than any other area of genetic medicine.

Before designer babies, the newspaper headlines were all about test-tube babies, children conceived using in vitro fertilization (IVF)¹⁰ techniques (usually in a laboratory dish, rather than a test tube) (Buxton and Turney, 2007: 148). People who are suspicious about having genetic disorders in their genes or have some relatives with a genetic disease in their family prefer to undergo a related genetic test. Genetic conditions, also called genetic disorders, are caused by changes (mutations) in genes that affect the way how the body works or looks. Although it is individually quite rare, – cystic fibrosis¹, for example, affects approximately one in every 2500 babies born – there are thousands of different genetic disorders. Taken together, this means

¹⁰ Since the birth of Loise Brown, the world's first IVF baby, at 11.47pm on July 25 1978, an estimated three million children worldwide have been born following IVF treatment (Buxton and Turney, 2007: 148).

that an estimated two to three percent of all babies are born with a genetic or chromosomal condition – approximately 13, 000 births every year in the UK (Buxton and Turney, 2007: 115).

Recently, genetic tests are routinely used as a reproduction technique in order to obtain the genetic risk tendencies of couples who are planning to have or waiting for babies. In many countries of the world, the pregnant women are screened through a series of tests in order to learn if there are high tendency for any sort of genetic disorders in their babies. However, there is no other choice for couples than undergoing an abortion if there is a risky baby in respect of genetic conditions. Especially for couples who would not consider a termination, another approach is to use PGD (Buxton and Turney, 2007: 147). The clear PGD explanation of Moore (2008: 25) will be useful here:

Doctors can bring a couple's sperm and eggs together in a laboratory to create an embryo. After a few days, the embryo will have grown so that it consists of around eight cells. Scientists can remove one of the cells and tests its genes. If the test shows that the disease –linked gene is in the cell then the scientist discard the embryo. If the test shows that the gene is not in the cell, then the embryo is placed in the woman's womb and allowed to develop. This process is called pre-implantation genetic diagnosis.

However this so-called risk free application of genetics led many ethical discussions range from choosing the sex of children to a new kind of eugenics creation. Because, if it [choosing] is technically possible, then couples who want to have a risk free baby can also choose their babies' sexes. In the light of equality, its opposite should also be possible; a deaf or obesity or homosexual couples should have the right of having a deaf or obesity or homosexual baby with a reason of intra-familial conformity. By these and other ethical problems related with the issue lead controversial discussions over PGD and regulations towards PGD developed in many states in order to prevent its misuse if it is possible.

Above all, PGD has many controversial points within its application and possible medical and non-medical results. Thus, it is important to draw its regulative limits for the each actor. These actors were mentioned as government, medical professionals and individuals by The Harvard Law Review (2005: 2772).

For Harvard Law Review, first governmental regulation (consists of direct regulation, through outright bans, allowances, or licensing schemes, etc.) is unique because it is the only level at which traditional legal control is possible. As pointed out in the same document (2005: 2772):

1. The United Kingdom has established the Human Fertilization and Embryology Authority, which licenses PGD clinics and approves PGD diagnoses as they are developed;
2. Germany, by contrast, has effectively banned PGD through its Embryo Protection Act, which prohibits the creation of embryos for any reason other than realizing a pregnancy; some U.S. states¹¹ have passed laws that arguably apply to PGD.

According to the electronic document of German Reference Centre for Ethics in the Life Sciences - DRZE (Deutsches Referenzzentrum für Ethik in den Biowissenschaften):

¹¹ Out of ten states found to have these laws, four states specifically allow PGD, five states appear to prohibit PGD unless it is “shown to be beneficial or risk-free to the embryo,” and, in one state, if PGD is considered “research,” the resulting embryo cannot be implanted (Harvard Law Review, 2005: 2773).

- The Austrian Law on Reproductive Medicine (Fortpflanzungsmedizingesetz – FMedG) Legal Regulation of PGD in Austria) only authorizes the testing of cells capable of development if this is, in the light of current medical knowledge and experience, necessary for the establishment of a pregnancy,¹²

- In Switzerland, the selection of germ cells is permitted if there is a danger of transmitting a severe incurable disease to the offspring (Swiss law on reproductive medicine – Fortpflanzungsmedizingesetz Art. 5 III) However, PGD on embryos is prohibited. In-vitro generation of embryos is only permitted in Switzerland if the intention is to overcome a couple's infertility and other means of treatment have either failed or are considered futile.

- The Human Fertilization and Embryology Act, which was put into force in Great Britain in 1990, created a legal framework for the handling of in-vitro embryos. PGD and the involved embryo selection are generally permitted in licensed centres. In 2002, the British Department of Health released guidelines for the provision of PGD services. The reasons for requesting PGD include serious genetic disorders, chromosomal disorders and the suitability as a tissue donor for a living affected sibling under certain conditions. A selection in terms of the embryo's sex is strictly regulated¹³,

- In France (see module Legal Regulation of PGD in France), the application of PGD has been regulated by the law on bioethics (Loi No. 94-654 du 29 juillet

¹² In July 2004, the Austrian Bioethics Commission dealt, among other issues pertaining to reproductive medicine, with PGD. In the final vote, 12 out of 19 members were in favour of a limited authorization, whereas seven members came out in favour of maintaining the current legal situation (<http://www.drze.de/in-focus/preimplantation-genetic-diagnosis> (5)).

¹³ According to paragraph 10D of the Code of Practice 8th Edition (2009) (see module Legal Regulation of PGD in Great Britain) published by the Human Fertilisation and Embryology Authority (HFEA) (see module Legal Regulation of PGD in Great Britain), such a selection is allowed to be carried out only in cases where there is a medical indication of a risk for a sex-related hereditary disease (<http://www.drze.de/in-focus/preimplantation-genetic-diagnosis> (5)).

1994) since 1994. A revised law was adopted in 2004 (Loi, 2004-800 du 6 août 2004 relative à la bioéthique, quoted from DRZE). According to this law, PGD is only permitted in order to prevent serious genetic diseases which are considered untreatable or incurable at the moment of the diagnosis. It may not be applied if the anomaly responsible for the specific disease has not been clearly diagnosed in one parent beforehand. The diagnosis may only be conducted in an institution specially accredited for this purpose. Also, in condition that couples must have lived together for at least two years.

- In the Netherlands, the Embryo Act (see module Legal Regulation of PGD in the Netherlands) came into force on 1st September 2002. It does not provide a legal ban on PGD. However, sex selection of embryos is prohibited. Since May 2008, Parliament has been discussing whether embryos, which show an increased risk for illnesses such as hereditary cancer, should be allowed to be sorted out prior to implantation. Nonetheless, no draft law is available at the current moment.

- In Belgium, PGD is not governed by explicit legal provisions. It is however implicitly regulated under the term "treatment" by the law on IVF embryo research that became effective on 11th March 2003. In case of medical indications and after submission of a request to the competent bioethics commission, it is carried out in licensed centers. Sex-specific embryo selection is prohibited, with the exception of selection in order to eliminate embryos with sex-linked diseases.

- In the USA, PGD is governed by State law and thus regulated in very different ways. In some States (Florida, Louisiana, Maine, Minnesota and Pennsylvania,) it is legally prohibited. Other States (Massachusetts, Michigan, North Dakota, New Hampshire and Rhode Island) authorize PGD in the case of medical

indications. In most States however, there are no legal provisions regarding the authorization and application of PGD. In those States, the area of application extends beyond medical indications and includes sex selection as well as selection according to specific criteria.

There is still a deficiency in the regulations of Assisted Reproduction technologies' applications in Turkey. From a personal interview with a physician in the sector, it is learnt that while PGD was permitted for choosing and implanting embryos in the issues related to important health conditions, it was banned for sex selective uses. However it is also expressed that, when the customer asked if it was possible to choose the sex of the baby, physicians were not ignoring their suggestions in selecting period. Moreover, the same person cited Cyprus as a place where more free applications of PGD were conducted. From this text, it is understood that, for Turkey the restrictions and controlling are not suitably applied also for assisted reproductive technologies.

CHAPTER III

METHODOLOGY AND OBJECTIVES

The main idea of the study is based on the critical presumption of the fact that reproductive biotechnology changes the natural structure of the reproduction towards prospective parents' choices for the different steps of pregnancy screening processes. Moreover, these applications in reproductive biotechnological services may lead individuals to make eugenic choices. In other words, via assisted reproductive technologies, not only genetically 'chosen' babies can be participated into the society but also some economic and political goals can be achieved through the wide-spread use of the techniques without regarding the pregnancy as risky or not. In order to support this assumption, this study had the purpose of discussing present data over the related subject and combine it with the results of a field study include the thoughts of people with different characteristics and the socio-economic effects on their decisions related to reproductive biotechnology and some controversial issues towards it.

People from different genders, incomes and backgrounds have possibly different cultures, economic and social statuses and beliefs, etc. All or at least one of these different factors affects the decision making process of a person. Thus, in this study, the people from different socio-economic levels were surveyed in the respect of the subject of the thesis to make it possible to obtain and compare the main traits

which have influence on opinions and decisions of the people pertaining to these different backgrounds.

Some of the issues discussed in this thesis are:

- a. Do people decide themselves if they would undergo a test or an abortion when test results show the risk of having a handicapped baby or not? Do the decision making processes of these people differ according to personal and socio-economical differences?
- b. Abortion of fetuses with which health conditions is ethically acceptable?
- c. Pre-implantation Genetic Diagnosis advises couples, even singles, not to take the risks of natural reproduction. What will happen if one day everybody wants and affords PGD? No need to say in compliance with this utopia that there will be no right to live for the handicapped people. What do people think about IVF and PGD and the 'positive' and 'negative' eugenic types?

By means of these questions, a further discussion about eugenics is carried out and a critical view towards bio-power and eugenics is supported in this study for the purpose of addressing some intentionally ignored negative functions of biotechnology and Pre-implantation Genetic Diagnosis.

Practically it is seen that, technological or political successes are more important than quality of people's lives. Here, sociologists undertake the role of criticizing the pure technological / rational approaches in order to balance the science Libra. In this study, Pre-implantation Genetic Diagnosis and related to this subject, In Vitro Fertilization and as the title gathers them together, Assisted Reproduction

Technologies and reproduction biotechnology are analyzed to criticize the misuses and underline the risky and controversial issues of them in the daily lives and future of public.

For this aim, literature surveying was done and we tried to understand the ethical scope of the subject and defined via the statements of people, namely through empirical field study. The field study was conducted in Turkish interviews and/or surveys through a semi-structured questionnaire. Some of the questions of the Questionnaire were revised from the research questions of Rabino (2003) 'Gene therapy: Ethical issues,' Rabino (2003) 'Genetic testing and its implications: Human genetic researchers grapple with ethical issues,' and Heuvel, Chitty, Dormandy, Newson, Attwood, Ma, Masturzo, Pajkrt, and Marteu (2009) 'Is informed choice in prenatal testing universally valued? A population based survey in Europe and Asia.'

In addition to literature surveying and field study, four in-depth interviews are performed with the parents of children with Trisomy 21, namely Down syndrome¹⁴ as the real target group of the process of screening chain and reproductive biotechnology. One male and three female participants are interviewed from the '*Ana Kucağı Association of Protecting Children with Down syndrome,*' Ankara.

Nearly all data (55) was collected via face to face interviews and some of data (20) was collected via surveys. The quantitative data is entered to SPSS (Statistics Programme of Social Sciences) and examined through frequency tables and crosstabs. With the references to the findings of the study and similar findings of the other writers, the expectations of the study are tested.

¹⁴ Participants are chosen from the '*Ana Kucağı Association of Protecting Children with Down syndrome,*' Ankara.

This thesis faced many limitations from the beginning of the constitution of the questionnaire form as shortly mentioned above. Questions of the form were taken from hypothetically generated situations. Many social scientists know that this is a necessity for getting the perceptions or predictions of respondents in such a difficult situation which has not been experienced before. Surveys about politics, marketing, religion or ethics, etc. are based on such kind of hypothetical assumptions and questions. The reliability of the survey comes to the agenda in general when a researcher uses this methodology but it is a fact that thoughts, attitudes, perceptions and even decisions about a social issue can be obtained only by these questions. Definitely, answers can easily change into another one in front of a virtual case.

Even so, thoughts about a social subject can be gained roughly through the hypothetical questions because even if the case or time or space changes, the dynamics or actors who affect decisions would not change easily. Thus, the determinant factors and effective actors on the decision making processes are discussed in the general of the study.

CHAPTER IV

FINDINGS AND DISCUSSION

4.1. Sample

The general qualifications of the sample were shown in the table below. In sum, 75 participants from Turkey were interrogated on the controversial issues in reproductive biotechnology.

Table 1.

General Qualifications of Sample

	N	%
Gender		
Female	40	53,3
Male	35	46,7
TOTAL	75	100
Age of Sample		
18-24	7	9,3
25-35	38	50,7
36-45	18	24
46-60	12	16
TOTAL	75	100
Educational Status of Sample		
Neither write nor read	2	2,7
Primary school	5	6,7
Junior high school	2	2,7
High school	15	20
College	26	34,7
Post graduation	25	33,3
TOTAL	75	100
Occupational Status of Sample		
House wife	5	6,7
Student	7	9,3
Unemployed	8	10,7

Worker with salary	16	21,3
Self-employed	11	14,7
Retired	25	33,3
Other	3	4
TOTAL	75	100
Monthly Income (TL)		
Less than 1000	19	25,3
1001-2000	21	28
2001-3000	23	30,7
3001-10000	10	13,3
Unanswered	2	2,7
TOTAL	75	100

The majority of the samples consist of the age group of 25-35. Hence the half of the amount of participants was in the maturity period of their lives. Another majority in the sample qualifications was seen in terms of the educational status. Participants who have a “college” level in their educational lives constituted a majority among the other educational statuses. This situation led to a relatively easier communication about the subject. Occupational status of sample was around workers with salary, retired and self-employed people.

Interviews were made in Samsun (20), Bursa (20) and Ankara (35), Turkey. There is no evaluation based on the city because meaningful difference did not found among cities. Participants of the study were not chosen according to their knowledge about genetics or biotechnology. Notwithstanding, as mentioned above, they were chosen randomly by the research subject because it was a subject that anyone could not want to speak about if they have no idea about it. Still, it must be underlined here that some explanations about genetics, biotechnology and pregnancy tests were given before questioning them.

4.2. Opinions and Actors of Decision making Process of some Critical Procedures of Pregnancy

The main problem of this study is to look at the social reflections of reproductive technologies which create social problems as mentioned in the previous sections. In order to give examples for these problems related to reproductive technologies from the daily lives of some Turkish people, questions for the hypothetical pregnancy process is considered. This process is important because of the major relationship between decision making processes of the pregnancy and the effectiveness of social structure of the society.

Thus, this section of the study examines the main problem with respect to pregnancy testing and decision making process. It is known that Turkish women were not alone in making such decisions. Thus, this section include some examples of findings related to effective actors of such a decision making process and reminds women's non-autonomous position in a subject which directly interests her body and as a result of this, her.

4.2.1 Pregnancy Testing and Decision Making Process

As it is mentioned in the theoretical section, the notion of 'individualization' is well known through the works of Ulrich Beck, and others. For Beck (1992: 128), the process of individualization has three dimensions:

Disembedding, *removal* from historically prescribed social forms and commitments in the sense of traditional contexts of dominance and

support (the ‘liberating dimension’); the *loss of traditional security* with respect to practical knowledge, faith and guiding norms (the ‘disenchantment dimension’) and – here the meaning of the word is virtually turned into its opposite – re-embedding, *a new type of social commitment* (the ‘control’ or ‘reintegration dimension’).

According to Wieser and Karner (2006: 29), ‘liberating dimension’ refers to a process that sets the individual free and it means that there is a possibility to decide one’s own life course. In this issue, woman individual has to decide about something that has not been an issue for a decision before. Prenatal testing confronts a pregnant woman with herself in a radical way and thereby “frees” her from traditional bonds (Wieser and Karner, 2006: 29). However there are some specific conditions which were out of this concern.

In my pregnancy experience, that was a routine and normal pregnancy screening in general. Without getting consent for testing or arguing or even questioning, the specialists took blood sample and controlled the fetus also via ultrasound screening. I knew that we were searching for the risk of the most known fetus abnormalities. However, I would never predict its validity through the risk statistics of 1/10000 or 1/650 having a baby with Down syndrome. My result was similar with the second statistics, and I learnt later that means one baby with Down syndrome born among 650 living births with these scanning results. 1/250 ratio is regarded as critical point and it is known that many gynecologists and specialists suggest abortion for prospective parents whose test results were below this ratio. Of course I was afraid like all prospective mothers who experienced such a controlled pregnancy which brings pregnant woman face to face with having a defected baby. Again, because of my research subject and excitement for learning in general directed me to understand all the applications, tests or their results which were done

during the periodic gynecologist controls. Nowadays pregnant women who are unaware that prenatal tests have been performed, namely the level of informed consent is low (King, 1999: 177) undergo some diagnosis tests in their pregnancies. The reason of this unawareness is the general opinion about the efficiency of these tests. The main assumption is simple, 'every women want to have healthy babies'. What about the woman who does not want to know even if she was pregnant for a handicapped baby? Of course, she has the right for not to know the possibility of disablement. According to the empirical study of Rösch (et.al. 2000: 631), prenatal screening with 50% detection of trisomic fetuses with subsequent induction of abortion should have reduced the prevalence of live babies with Down's syndrome remained unchanged. This means that either only a small proportion of younger pregnant women are for example offered the triple test or these women do not wish to have it performed. Many younger women with a low risk of having a trisomic baby would refuse the triple test because they would be charged about 90 DM for it since the costs of the triple test are generally not covered by the health insurance (Rösch et.al., 2000: 631).

What about the woman who does not believe in the efficiency of these tests? Many mothers, who were under 30, had no relation with Down, and had a child with Down syndrome, performed these tests before birth. However they could not have any sign from this kind of defect and were not aware of having a baby with Down syndrome.

In the existing literature, it is assumed that pregnancy rates of women of "high" maternal age might be increased by combining PGD with in vitro fertilization. In a study, conducted in several Dutch fertility clinics, embryos of 206 women aged 35 to

41 were tested for chromosomal disorders by means of PGD. Only embryos which tested negative were implanted. However, the success rate of this group (29 births) was lower than that of a control group where PGD had not been applied (Mastenbroek, et. al., 2007). After this information, noone can not blame a person on being suspicious about these tests.

In this part of the study, main actors for the pregnancy tests according to different variables were evaluated. Below, one can see the frequencies for the answers about deciding the actors of these tests.

Table 2.

The Rates of Votes for Actors of Pregnancy Screening Tests

	N	%
All mother candidates should have these tests	20	26,7
Mother candidate should decide to undergo these tests or not	6	8
Mother and father candidates should decide it together	39	52
Whole family should decide it together	1	1,3
No comment	9	12
Total	75	100

Many of the participants accept mother and father candidates as the main actors of the pregnancy and as the responsible people from the offspring and say that ‘mother and father candidates should decide if mother candidate would undergo these tests or not’ together. Only 26,7% of participants agree with the uniqueness of motherhood and authorizes prospective mother to or not to undergo these tests.

Wertz and Fletcher (1995) found that medical geneticists were split about whether diagnosis through amniocentesis or a comparable procedure should or should not necessarily be available to all women, regardless of age and medical

status – 41% explained it should be available for all, and 48% disagreed (quoted from Rabino, 2003a: 376).

Table 3.

The Sexual differences in the Actors of Pregnancy Screening Tests

	Obligation to all prospective Mothers		Prospective mother		Prospective Mother and father		Whole Family		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Female	16	40	2	5	19	47,5	1	2,5	2	5	40	53,3
Male	4	11,4	4	11,4	20	57,1	-	-	7	20	35	46,7
Total	20	26,7	6	8	39	52	1	1,3	9	12	75	100

Surprisingly, it is the female gender who agrees with the most dominant statement of ‘all mother candidates should have these tests’ with their rate of 40% among females. Male participants who do not want to give that responsibility to the partner and say ‘mother and father candidates should decide it together’ have a bigger share (57,5%).

For the whole sample, there was not homogeneity among the age categories. In other words, there were the majority of 25-35 ages, namely it was a young sample. When the decision making actors were evaluated from the criteria of ages, the dominance of 25-35 ages were mostly for the statement of ‘mother and father candidates should decide it together’. While, 36-45 age group mostly voted for either ‘all mother candidates should have these tests’ (8%) or ‘mother and father candidates should decide it together’ (7%); 46-60 age group mostly considered the decision of mother and father candidate (7%), and ‘no comment’ at the rate of 6%.

It was another finding that the most of the rates for ‘no comment’ came from the age group of 46-60. Nearly, in parallel with the increase in the ages, skepticism

about the actors of some private decisions of the family raises. The age group of 18-24 has the least proportion in the study and has decreasing agreements (42,9%, 28,6%, 14,3%) for the statements that are ‘all mother candidates should have these tests’, ‘mother candidate should decide to undergo these tests’ and ‘mother and father candidates should decide it together’.

Participants who have no children mostly think that deciding whether the prospective mother should undergo these tests or not is a common duty of prospective mothers and fathers (58,7%). There is another remarkable difference found in participants with children that is, in addition to deciding activity should be done with both partners (44,4%), they think ‘mother candidate should decide to undergo these tests or not (25,9%).

When its less proportion in the sample is thought, it would seen that participants without children have more ‘no comments’ (13%) than participants with children (11,1%). It is tried to understand relations between having children and decision maker actors on pregnancy genetic tests because people with children would think more logical and emotional. While participants without children were assuming this statement [tests during the pregnancy], others have experienced these difficult conditions in their lives for at least once. In the table above, it is shown that participants with children see the prospective mother as a decisive actor (14,8%) when it is compared with the participants without children (4,3%). However, the result did not change, both participants agree with the statement of ‘deciding together with the partner’.

Final picture for actors, who would decide whether the prospective mother would undergo testing or not, was executed in terms of education status. It is

important to underline the agreement for the statement, which is ‘all mother candidates should have these tests’, is increasing accordingly as the education levels advances. As a result of this, people who are at the level of post-graduation (25%) have the biggest ratio (11%) in the total sample.

Another interesting point in the post-graduation ratios is observed in the sharp distribution of agreements among the statements. As it is seen in the table below, participants at the post-graduation education level voted for only two of the statements, they are: ‘all mother candidates should have these tests’ (11%) and ‘mother and father candidates should decide it together’ (14%).

Table 4.

The Distribution of the Actors of Pregnancy Screening Tests according to Education Levels

	Can not read or write		Primary school		Junior high school		High school		College		Post graduation		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
All mother candidates should have these tests	-	-	-	-	-	-	3	20	6	23,1	11	44	20	26,7
Mother candidate should decide to undergo these tests or not	-	-	1	20	-	-	2	13,3	3	11,5	-	-	6	8
Mother and father candidates should decide it together	2	100	4	80	1	50	6	40	12	46,2	14	56	39	52
Whole family should decide it together	-	-	-	-	1	50	-	-	-	-	-	-	1	1,3
No comment	-	-	-	-	-	-	4	26,7	5	19,2	-	-	9	12
Total	2	2,7	5	6,7	2	2,7	15	20	26	34,7	25	33,3	75	100

Participant who thinks that having these tests should be the decision of whole family was coming from the education level of junior high school level. A surprising result in this table is seen in the post-graduation education level. According to this picture, while a group of participants from post-graduation education level and whose rate could not be ignored (44%), are favor of 'all mother candidates should have these tests,' another group of participants from the same education level (56%) thinks that it would be better if 'mother and father candidate decide it together.'

This is a small piece of the picture of the point which pregnant women as individuals and their changing determinant roles came. That is the broader and 'informed consent – free' application of pregnancy tests. Female participants of this study are evidences for such an application and this approach may lead to a screening obligation for all pregnant women. It is known that in some European countries like Austria, women should undergo routine tests and ultrasound screening in some specific months of their pregnancies if they want to be paid for that child periodically and if they want to have the waged birth permission after the birth. Anyone may interpret these applications either as an award for 'controlled' female individuals or as a punishment for 'out of control' female individuals. In any case, this application works successfully and it is beneficial for the 'auditing' and 'controlling' of the next generations with no doubt; especially when the effective roles of the partner, doctor, or specialist, the family, friends, religious authorities, or the money under her pillow or bank account; in other words masculine, medical, traditional and economic effects, are thought on the decisive autonomy of the female individual.

Up to here, people who give the decision of undergoing pregnancy screening tests were examined according to various variables. However, decisions are effected

by very other subjects and actors again. Here under this sub-topic of the study, effective actors on decision making processes of pregnancy screening are evaluated according to various variables such as family, doctor, etc.

Being pregnant today means that women have to deal with the issue of under what circumstances (Wieser and Karner, 2006: 33); and under which social pressures they want to give birth to a child. As Wieser and Karner (2006: 32), my argumentation here is that prenatal testing is produced by a network of numerous medical and non-medical actors.

According to the findings of this study, partner is the most effective actor on decision making processes of pregnancy screening for the participants in general (70,7% very important, 8% important). After their partners, participants rely on the guidance of their doctors (49,3% very important, 24% important). When the ‘partner’ and ‘doctor’ actors are considered, Turkey Demographic and Health Survey 2008 (THDS, 2008: 101) report gives some statistics about their decision maker roles on induced abortion. According to the report, in almost half of women’s last induced abortions, the decision to end the pregnancy was made jointly woman herself and her husband (48 percent). Almost one quarter of the women made the decision to have their last abortion by themselves. Doctors were cited by women as the decision maker for 22 percent of the abortions while only 4 percent of abortions were decided by partner.

Family effects make a contradictive situation for this condition. While preparing the questionnaire, the effective actor choices for this statement were chosen intentionally. The family actor was divided into two different bodies as ‘my family’ and ‘my partner’s family,’ just because especially in Turkey, people have

more traditional ties with their families. This situation takes its roots from development patterns. According to this tradition, generally the family of the male member is dominant in the new family's important decisions. However in this study, a meaningful relation between gender and my family could not be attained. Again, 'my family' (22,7% very important, 36% important) voted much more than 'my partner's family' (16% very important, 21,3% important).

Table 5.

The Importance of Effective actors on Decision Making Processes of Pregnancy Screening

	Partner		Friends		My Family		Partner's Family		My Doctor		Religious authorities		Other	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Very important	53	70,7	5	6,7	17	22,7	12	16	37	49,3	10	13,3	6	8
Important	6	8	10	13,3	27	36	16	21,3	18	24	5	6,7	1	1,3
Not too important	-	-	22	29,3	5	6,7	16	21,3	3	4	7	9,3	-	-
Not important	4	5,3	23	30,7	14	18,7	17	22,7	5	6,7	41	54,7	14	18,7
No comment	12	16	15	20	12	16	14	18,7	12	16	12	16	54	72
Total	75	100	75	100	75	100	75	100	75	100	75	100	75	100

That means, female participants of this study decide neither undergoing an abortion nor a pregnancy screening alone. If there is no partner who is dominant in decision making processes of the woman, there is always another strong determinant, a doctor or a gynecologist. In general, social pressures transform into an emotion of 'fear' in the daily life of pregnant women and direct them in caring about other's directions. Think about a traditional Turkish woman who wants to undergo pregnancy screening. It is not difficult to estimate her first fear: It would not be about the health of the baby, it would surely be about the sex of it. She knows very well that her hidden duty as a Turkish woman is giving a male baby to her husband

because ‘a man is a male and has a son’ (A famous Turkish saying). Hence her first fear and duty occurs after marriage and pregnancy towards her husband and his family and she is excited for learning the sex of the baby by ultrasound screening.

Second fear occurs about the health of the baby via the statements of the doctor. In this situation she starts to get worry about the baby and herself: “How can I look after that child if it born with Down syndrome? Moreover if its sex is female, it would be disaster for me to keep her from the males and bad people. It may not work in any time; who will look after us when I got very old? How will it she survive if I die before her? I have to undergo an abortion if tests results show that it is disabled! God bless them (doctors), they keep us from being in such a bad situation...” In fact, situation is not so bad from the side of male’s family if the sex of the child is male and especially if that would be the second child of that young family. That is the reason of why people asks doctor what was the sex of the baby when they hear from their doctor that their baby would possibly born with a disability and they may choose to undergo an abortion.

There is another group of people who may decide to save that pregnancy and baby in any case. Their ‘ethical sensitivity’ is not based on sexual differences as exemplified above; rather it is based on religious beliefs. Female and male people of such thinking have the ‘fear’ of God: ‘Only the God may take the soul which was given again by him.’ These people may choose not to undergo pregnancy screening because its result would not change their decision.

According to the findings of this study, religious authorities (20%) are effective actors in pregnancy screening tests decisions as much as friends (20%) in this study. In their study of which field studies were conducted in Adana, Afyon and

Van, Turkey, Ay, et. al. (2009: 295) expressed that strong Islamic ideology determined gender norms and influences reproductive behavior. The relation between gender and friends is showed below and says that there is a difference between sexes in evaluating the interference of their friends in the private health problems. While female participants were evaluating the interferences of their friends in pregnancy screening as ‘very important’ (5%) and ‘important’ (25%), male participants were evaluating their friends’ interferences as ‘not too important’ (31,1%) and ‘not important’ (40%).

Table 6.

Cross tabulation of ‘Sex and Rely on Friends’

	Very important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Female	2	5	10	25	9	22,5	9	22,5	10	25	40	53,3
Male	3	8,6	-	-	13	31,1	14	40	5	14,3	35	46,7
Total	5	6,7	10	13,3	22	29,3	23	30,7	15	20	75	100

If we focus more on the ‘my family’ factor, we see that the distribution of this relationship among ages are becoming intense in the age groups of 18-24, and later 25-35 and finally 46-60 and 36-45. In spite of their rebellious character, young participants voted more on their family. This approach may be taken its source from the economically and emotionally dependence and closeness to their families in their early lives.

When we look at ‘my family’ - education cross tabulation, surprisingly, we see that the importance of ‘the family’ in this decision making process increases in accordance to advancing level of educational graduation. With the ratio of 22%

people who are at the post-graduation educational level voted for the importance of their families in the issue of a decision making process of pregnancy screening. This result is surprising because people who have high education degrees are regarded as the most rigging people in the point of scientific knowledge and its daily reflections. Hence, one can evaluate their consultation to their families in order to guide them about a pregnancy screening as a suspicion and lack of confidence in the scientific area.

Table 7.

'Education and Rely on My family'

	Very important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Cannot read or write	2	100	-	-	-	-	-	-	-	-	2	2,7
Primary school	-	-	-	-	2	2,7	2	2,7	1	1,3	5	6,7
Junior high school	1	1,3	-	-	-	-	1	1,3	-	-	2	2,7
High School	4	5,3	3	4	-	-	2	2,7	6	8	15	20
College	5	6,7	12	16	1	1,3	5	6,7	3	4	26	34,7
Post Graduation	5	6,7	12	16	2	2,7	4	5,3	2	2,7	25	33,3
Total	17	22,7	27	36	5	6,7	14	18,7	12	16	75	100

Having children would also influence the idea of 'my family'. Findings of this study show that participants who have no children gave the biggest importance (42,6% of 61,3%) to their families. Participants who do not have any child think that their partner's family would be more important (28% of 61,3%) in decision making process in pregnancy screening than participants who have at least one child (9,3% of 36%). Through this and the previous finding, it can be interpreted that participants who have at least one child (or more children) give fewer importance to their and their partners' families when they are compared with participants without child. Probably they learned how to cope with daily and private problems of their family

sizes. Namely, having children possibly increased the life experiences of their parents and provided mental independencies from their former families, for this study.

Gynecologists or geneticians were generalized as ‘doctors’ in the interviews and surveys. As seen in the daily practice, couples go to the doctor together. However, it is always the prospective mother who the doctor should have a relationship with in order to gain the confidence which is the main principle of the best connection. As an indirect result of this, who mostly rely on the doctor as an actor in this issue, were participants mostly from the sex group of female (65% very important, 10% important of 53,3%).

Table 8.

‘Sex and Rely on My Doctor’

	Very important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Female	26	65	4	10	3	7,5	-	-	7	17,5	40	53,3
Male	11	31,4	14	40	-	-	5	14,3	5	14,3	35	46,7
Total	37	49,3	18	24	3	4	5	6,7	12	16	75	100

When the education levels of participants who rely on doctors are examined, one can see that by the increase in education levels, reliance on the doctor also increases for this issue. Another important point here is seen in the number of participants who are at post-graduation level and voted for ‘not too important’ or ‘not important’ choices for the doctor. There is no one who voted for these critical choices in the most educated participants in the study. Hence, if we want to complete the answer of the question which is asked in ‘my family’ part, there is an impressive participation in the reliability of scientific area represented in the doctor actor.

Table 9.

Cross Tabulation of 'Education Levels and Rely on My Doctor'

	Very important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Can not read or write	-	-	2	100	-	-	-	-	-	-	2	2,7
Primary school	-	-	2	40	2	40	2	40	1	20	5	6,7
Junior high school	1	50	1	50	-	-	-	-	-	-	2	2,7
High School	4	26,7	4	26,7	-	-	1	6,7	6	40	15	20
College	15	57,7	5	19,2	1	3,8	2	7,7	3	11,5	26	34,7
Post Graduation	17	68	6	24	-	-	-	-	2	8	25	33,3
Total	37	49,3	18	24	3	4	5	6,7	12	16	75	100

Then, it is possible to make an assumption here for the sample of this study: participants who come from high education levels accept their family as a non-rejected dominant actor similar to science or medicine; or vice versa is also valid; they see and rely on their doctor as one of their family members.

Female participants are more open to the effects of many actors as a result of being the main person of the subject. This was a subject that is not thought broadly before, and a decision of a female even about herself, in a masculine society is always under the effects of many masculine and political agents. The first and the most effective masculine agent is her partner, husband as it is seen above. 'His family' effects those decisions directly through statements or indirectly through their son, or the partner of that woman. The argumentation of 'we do not have enough money' could be stated by that husband to the wife not to undergo screening, or not to undergo abortion or not to keep the pregnancy if the baby is female and defected according to his or his family's desires on the unborn baby. The tragedy is the female's belief on the statement as the real reason and her decision to undergo an abortion especially on the statements of the doctor or her partner or others.

4.2.2. Abortion

Under the previous topic of this study, thoughts towards pregnancy tests and decision making process related to the pregnancy were showed as the examples of the problematic social reflections of reproductive technologies. However, generally ethics is discussed under this topic, abortion in the academic meetings of medical or social fields. It shows that they are mostly result-oriented in their thoughts. Up to here, the decision making problem of pregnancy tests is discussed as a way which may also lead to an abortion as a result. Here, 'abortion as a result' is under discussion again towards some examples from the answers of hypothetical questions.

There are four subtopics include 'The Reliability of Screening and Abortion as a Result of Pregnancy Screening,' 'The Legal Timing of Abortion,' 'Abortion of Fetus older than 10 Weeks,' and the 'Ethical Acceptance of Abortion Reasons.' The reliability of screening and abortion as a result of pregnancy screening, is the first controversial issue which discussed related to abortion in this study because it is observed that many individuals are directed or made choose to undergo an abortion through mostly unreliable screening results. Thus, this sub-topic wants to see the answers which trust on technology and the willing of undergoing an abortion and not to have a disabled baby as a result of tests and all the directions which say a possible defect in the genes of the baby. There is a legal timing differentiation among the various countries. While more liberal countries (like Europeans) have an enlargement in the limitations or even do not have any limitations in the practice; traditional or conservative countries have a more limited legal abortion time as explained in the

theoretical section of the study. This and latter question (about the abortion of Fetus older than 10 weeks) search for critical answers related to this controversial legal situation. Finally ethical acceptance of abortion reasons, tries to show some examples for the ‘standing measures’ of participants. In the theoretical section, the subtopic of ‘understanding disability’ is thought as an introduction for this discussion in order to make a relationship between reproductive technologies and socially constructed and legalized abortion reasons.

In sum, social reflections of reproductive technologies such as making a decision for abortion as a result of pregnancy test results, legal timing border for abortion for some countries include Turkey, and ethical acceptance of abortion reasons are discussed in this section through the related findings of this study.

4.2.2.1 The Reliability of screening and Abortion as a Result of Pregnancy Screening

It is not difficult to predict that every woman even in the daily lives of their pregnancy process, is worried about the life of the unborn for many times. For example, I remember that I cried until I felt the next moving of my baby in the belly when a man strongly crashed me while I was walking in a street in Graz, Austria. I was worried about the health of my baby because I could not see, hear or understand him without using technology. Only his moving made me believe in his mood after I ate a chocolate as well as many other times of the pregnancy [Many pregnant women eat sweet things when they want to feel their fetuses moving strongly, it works].

It is known that there are also some techniques which ‘show’ prospective parents what their baby likes and help the doctor about the ongoing situation of the pregnancy. Ultrasound screening pictures of the baby also gives an opportunity to the prospective parents in making a photograph album of it from the very early times of the life and so the emotional linkage with the fetus becomes clear. However by the time pregnant woman regards pregnancy screenings as a vehicle to get the pictures of the unborn. This transformation in the understanding of ultrasound screening is not surprising when its justification in the gynecological use is thought.

The pregnancy which I experienced was one of the routine examples of this with my infant baby over 4 kg that means normal birth may lead some birth complications and gynecological operation should be chosen for that birth. However two different hospitals and different doctors estimated the same weight for my baby, 3750 before the birth and caused my birth ache which went on approximately 24 hours and lead me to undergo an operation after all these pain. The reliability of screening completely changed for me especially when I saw and read the unchanged number of the babies born with Down syndrome. Like the unsuccessful estimation of the weight of my unborn baby, the estimation of the Down syndrome via these technologies is not also completely trustable. Blood sampling and amnion liquid testing (or CVS as it is known in medicine) are also available for the pregnant woman whose pregnancy was estimated as risky through the gynecological observation in which ultrasound screening used. However the result is the same; there is no scientific study that claims an absolute decrease in the number of births with Down syndrome after the wide-spread use of screening programs.

If so, how and why people decide to undergo an abortion when the test and ultrasound screening results showed a so-called risky position of the unborn baby? In order to discuss this question and the reliability of the participants of this study, they were informed to assume that they (or their partners) were pregnant and would undergo some pregnancy (genetic) testing (screening). After having this information, they are required to answer who could affect their decisions whether to undergo the screening or not. Then, they were asked to suppose that they underwent testing and they were informed that there was a risky pregnancy and a defected baby; as a result they should have a decision of termination of that pregnancy or not. Of course, that was an assumption but at the same time an attitude which many factors were affected by it. So, would they prefer to end that pregnancy?

Table 10.

The Distribution of Decision of termination

	Frequency	Percent
Yes	34	45,3
No	4	5,3
No comment	37	49,3
Total	75	100

45,3% of the participants expressed that they would prefer to have a termination for such a kind of pregnancy. A comment of a female participant:

‘In my opinion, the responsibilities of parents continue up to when that child grew up and became an individual who can survive in the society. This time would possibly be longer and more difficult for the parents of a child who was born with a genetic defect. Each prospective mother and father know that they may not have enough time/ life or economical situation to overcome with these difficulties and they should decide according to these circumstances..’

5,3% of them would not abandon giving a birth to that child. Here the percentage of ‘no comment’ answers was also meaningful. Nearly, the half of participants could not assume such kind of contradictive situation and avoided to give a certain answer for this hypothetical question.

Even if there are some movements and regulations for years in order to be a European Union member state, Turkey has relatively close and traditional Muslim people in many respects. This religious belief, as well as other beliefs in the world, may affect people, in deciding about many subjects including the termination of pregnancies. In order to see this relation of the participants with the religious authorities, their decision of termination and their votes to the religious authorities as determinant actor on decision making process of pregnancy screening is examined below.

Table 11.

‘Religious Authorities and Decision of termination’

	Very Important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	4	11,8	2	5,9	2	5,9	26	76,5	-	-	34	45,3
No	2	5,0	-	-	-	-	1	2,5	1	2,5	4	5,3
No comment	4	10,8	3	8,1	5	13,5	14	37,8	11	29,7	37	49,3
Total	10	13,3	5	6,7	7	9,3	41	54,7	12	16	75	100

From this examination, it is possible to state for this study that a relatively little correlation is found between voting for religious authorities as an effective actor in decision making process of pregnancy screening and decision of termination. Participants who voted for the irrelevant status of religious authorities (76,5%) in their lives, voted for the acceptance of termination in such a condition. For the participants who voted ‘no’ for the decision of termination, religious authorities are

very important (50%) on their decision making process of pregnancy screening. Of course this evaluation may not also be generalized and it should be stated here that there may be preferences against abortion because of humanistic values.

There are some examples of other societies where religious beliefs are effective in people's daily or even private decisions. In their article, 'Termination of pregnancy: attitudes and behavior of women in a traditional country,' Shoham-Vardi et. al. (2004: 874), draw attention to the difficulty in making informed decision because of low levels of education, language and socio-cultural barriers between providers and patients and the belief in which termination is believed to be forbidden by religion. It is interesting that writers offer public health program development and implementation departments to actively involve local religious authorities informing families about the fatwa that allows termination of pregnancies of severely affected fetuses within 120 days of pregnancies for Muslim populations. In other words, these writers offer a fatwa rather than the education of the populations in order to make a direct impact on the people who have a regional thought. If the famous saying of Marx 'the religion is the opium of the societies' is accepted, then keep on using it to direct masses and even their reproductive choices. This approach may be evaluated as an alternative suggestion and another aspect and use of power which should be discussed.

When the relation between the sexes and decision of termination is searched among the respondents, meaningful difference cannot be seen. Only, in detail, refuses and no comments for the termination came mostly from the female side of whole participants. Male participants were for the side of termination again with a minor difference.

From the educational side, the picture is not similar to gender and the decision of termination relation. By the increase in the education levels of participants, the idea of termination also increases when high school, college and post-graduation education levels are considered. The most interesting point in this table is seen in the high school level; participation in the decision of termination is relatively low (13,3%) when the percentage of its total participation (20%) is considered. It should be underlined that the most (86,7%) of ‘no comment’ answers were taken from the participants who are at this level of education.

Table 12.

‘Education Levels and Decision of Termination’

	Yes		No		No comment		Total	
	N	%	N	%	N	%	N	%
Can not read or write	2	100	-	-	-	-	2	2,7
Primary school	4	80	1	20	-	-	5	6,7
Junior high school	1	50	1	50	-	-	2	2,7
High School	2	13,3	-	-	13	86,7	15	20
College	9	34,6	2	7,7	15	57,7	26	34,7
Post Graduation	16	64	-	-	9	36	25	33,3
Total	34	45,3	4	5,3	37	49,3	75	100

Children’s role in the decision of termination is clearer when the rate of participants against termination is evaluated. While the rate of participants who have no child and against termination was 2,2%, participants who have child(ren) and against termination have the rate of 11,1%. It can be estimated via the evidence of no comment answer rates that participants who don’t have child(ren) a bit more susceptible to the termination of pregnancies.

However, participants who are more favor of undergoing an abortion of termination give much more importance to their families’ decisions about

undergoing pregnancy testing. No comments (50%) were also dominant and more important for this subject. Thus, when we want to examine the indecisive respondents' answers for the importance of their family decisions; we see that at rate of 62.1% they give importance to the decisions of their families on pregnancy screening.

Table 13.

Cross Tabulation of 'Rely on My Family and Decision of Termination'

	Very Important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	6	17,6	15	44,1	2	5,9	11	32,4	-	-	34	45,3
No	-	-	-	-	-	-	3	75	1	25	4	5,3
No comment	11	29,7	12	32,4	3	8,1	-	-	11	29,7	37	49,3
Total	17	22,7	27	36	5	6,7	14	18,7	12	16	75	100

Only 4% of participants who have negative thoughts for decision of termination take their families' talks about such kind of screening into consideration. Perhaps they would not ask for their decision about that termination because their family would think the same as them in an opposite way again.

4.2.2.2. Abortion of Fetus older than 10 weeks

The same hypothetical situation is asked participants for this topic this time with a time difference. This time is a determinant with some respects. Among the traditional people of Turkey, it is believed that the fetus gets a soul approximately these times and killing that fetus is evaluated as the same with killing a person.

Public opinion studies from 1972 to 1998 found a range of from 70 percent to 83 percent of respondents who thought it should be possible for a pregnant woman to

obtain a legal abortion if there was a strong chance of serious defect in the baby (Singer, Corning, and Lamias, 1998: 653). It is known that this sort of serious defects could only be obtained via ultrasound and other blood screenings after 10 weeks.

After similar information is given to the participants, their attitudes towards such a suggested abortion are questioned. While 53,3% of the respondents were agreeing with the idea of abortion, other side with high rate (44%) had no comment about the subject.

Table 14.

Thoughts about the Abortion of Fetus Older than 10 Weeks

	N	%
For abortion	40	53,3
Against abortion	2	2,7
No comment	33	44
Total	75	100

New reproduction technologies, namely reproduction biotechnology, gives recent couples a chance to learn only the sex and the parental information of the unborn which is in the first weeks of its development. Moreover, same technology gives couples a chance to learn many other genetic characteristics, and even metabolism diseases or defects of the unborn baby in its later development after 10 weeks. When the new reproduction techniques including embryo selection is thought, needless to say that, before the embryo implantation and after everything is done (after 3 months) biotechnology is powerful in diagnosing. However, recently, these new reproduction technologies offer nothing out of a logical termination of that pregnancy.

The rates are getting more importance when it is seen that the reasons and the rates of the abortion of 10 weeks old fetus differentiate through the socio-economic

situations. The biggest acceptance and second biggest suspicion came from the age group of 25-35. In this study, it is found that, being against to abortion is not in parallel with getting older because the age group of 46-60 was the group who thinks positive about termination with second highest rates in a risky position of ten weeks old pregnancy.

When the gender issue is regarded, one can see that there is no meaningful difference between the sexes and the decision of termination over 10 weeks for the respondents. Moreover, female respondents have a little higher rate of agreement for this sort of termination. A woman participant from Ankara explained that she regarded giving a birth to a child who will surely have many physical, mental and social problems in his/her life as an injustice to the unborn. However, the controversial situation here is generally uncertain or unreliable rate of disability which is known widely as it is discussed under the subtitle of “Abortion vice versa Disability: People who have children with Down Syndrome” in this section. Another woman participant from Ankara answered in such a different way: “The lower gestational age lead to have an easier abortion. And complication free abortion is important with respect to the health of the woman and next pregnancies. I do not believe myself in looking after a child with microcephaly or Down syndrome and in overcoming with the physical, emotional and social responsibilities of this situation.”

4.2.2.3 Legal Timing of Abortion

Is the subject something which is simply related to the female body and are the decisions about surviving or undergoing a termination of the pregnancy should be

given by her autonomously? It is seen in the previous discussions that female participants were not left alone in those decisions. Even so, they have another obstacle related to the timing of the pregnancy, in Turkey. This limitation is neither universal nor legal in fact because it is known that there are mostly unsafe –and illegal- clinics in Turkey which operate such terminations over 10 months expensively and there are also many countries in which these operations were done safe and legal.

Based on the different practices of the states, the agreements for the legal limitation in the timing of abortion are examined through this question.

Table 15.

Thoughts about the Legal Timing of Abortion

	N	%
Agree	17	22,7
Disagree	15	20
No comment	43	57,3
Total	75	100

Many respondents had neither think nor hear about the issue. However, when they learnt the dualism in the legal limitation of such overtiming abortions, they could not agree with the practices easily. This question was resulted with the majority of ‘no comment’ answers (57,3%). There is a difference between the thoughts about 10 weeks limitation in the termination of problematic pregnancies and having child/ren. Participants who have child/ren have a higher agreement (25,9%) than the participants without child/ren (17,4%) about the subject. Here, one can see a clear opposition to the termination of a problematic but a late pregnancy (26,1%) from the side of participants without children. A hypothesis can be offered here

which is about the “acceptation of legal” and “irrelevant” approaches of participants who have child/ren without questioning.

Sexual differences related with the issue of legal timing of the termination were not seen so clear in the previous pages of the study. As the final relation of this part of the study, the relationship between sexes and the decisions about the 10 weeks limitation of Turkish laws is examined. According to this examination, surprisingly, male participants were less (8,6% of male and 35% of female participants) favour of such a timing limitation in abortions. However in the opposition rates of this limitation, there is equality between sexes (20%).

Table 16.

‘Sex and Thoughts towards 10 weeks limitation’

	Yes limitation		No limitation		No comment limitation		Total	
	N	%	N	%	N	%	N	%
Female	14	35	8	20	18	45	40	53,3
Male	3	8,6	7	20	25	71,4	35	46,7
Total	17	22,7	15	20	43	53,3	75	100

A woman rejected this limitation because according to her, this limitation limits the right of giving a decision of an individual. However another woman from Ankara, accepted the limitation because according to her: ‘...[If there is no limitation] the control of defects and abortions would become more difficult in societies where education levels were low like Turkey..’

4.2.2.4 Ethical Acceptance of Abortion Reasons

A couple or a woman's deciding process for undergoing an abortion may depend on various socio-economic reasons. In addition to economic reasons, the age of a woman or her partner, number of pregnancies (first baby or second or more), the defect in the genes of unborn or even the undesired sex of the unborn baby may lead people to undergo an abortion nowadays.

Firstly, sex of the unborn is a determinant factor in the abortion process. According to electronic information¹⁵, a prenatal gender test gives curious parents the option of learning the sex of their baby as early as 10 weeks of the pregnancy. Moreover, the technique is not an ultrasound technology; this test is applied only to the prospective mother's blood. As it is known widely by the public nowadays, ultrasound technology gives unreliable results about the sexes of babies, even in fact, the correct results can be given too late or at the end of the pregnancy (in birth) if the most suitable position of the baby couldn't be found. According to this new, via this blood test, people can get more reliable and early sex results of their unborn babies. However, this reliability of new learning process in the early weeks of the pregnancy may give the prospective mothers or couples a, so called, chance to undergo a legal abortion if the unborn fetus were not the sex which they desired. However this innovation in the assisted reproductive technology may cause more imbalances in the sex ratios especially in a masculine society like Turkey. As Waldby and Cooper (2008: 62-63) mentioned, outside Europe, China and India also have burgeoning

¹⁵ http://www.dnaplus.com/fetal_cell_prenatal_gender_test.htm

stem cell industries and extensive clinical recruitment sites, owing to the widespread use of assisted reproductive technology to favor the birth of sons (Junhong, 2001; Khanna, 1997; quoted from Waldby and Cooper, 2008: 62-63).

Secondly, the number and the sex of the baby are important. If the fetus with defect would be the second or later child, it would be easier to give the decision of termination of that pregnancy than the first child. The child is in general, has big importance and different meanings in especially underdeveloped countries such as Turkey. Many families aim to give a birth to a child in order to show their fertility and to have a family life as a living evidence of manhood. Many others want to have especially a male baby, to survive their surnames and to plan a future for their properties. Namely, having a male baby gives much more social power to their families. For example, after three daughters, a couple may decide an abortion of the prospective fourth daughter; but this decision may differ in the situation of a pregnancy of first son. Multiple pregnancies are another dimension of this subject. Not natural, the pregnancies of in-vitro babies result mostly in undesired multiple pregnancies. These pregnancies also lead prospective mother and father to have an abortion of one or some of the babies in order to provide a healthy condition for the other lucky babies. Unlucky babies are chosen in general according to the defect or handicap or weakness of babies. If all of the fetuses were healthy, then the election is done among the most unlucky ones according to their sexes.

Age of parents is another determinant factor in the ethically acceptance of termination of the pregnancy. Being physically, socially or economically insufficient to the prospective member of the family is the most common fear of older people.

In this part of the study, ethically acceptance of abortion reasons of the participants according to the levels of the handicaps or possible characteristics of the fetuses are discussed. In these discussions, participants were reminded to answer for each statement through assuming the sequence of the baby (first or second) and the possible late maternal and paternal ages (over 35).

Table 17.

Ethical Acceptance Distribution of Abortion Reasons (for first child)

	Very Important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Heavy mental degradation in 1st child	37	49,3	18	24	4	5,3	1	1,3	15	20	75	100
Wrong sex in 1st child	2	2,7	-	-	2	2,7	56	74,7	15	20	75	100
Depression in 1st child	6	8	13	17,3	10	13,3	31	41,3	15	20	75	100
Homosexuality of 1st child	12	16	3	4	15	20	30	40	15	20	75	100
Obesity of 1st child	3	4	21	28	11	14,7	24	32	16	21,3	75	100
Living up to 4 years of 1st child	22	29,3	17	22,7	4	5,3	16	21,3	16	21,3	75	100
Mild mental degradation of 1st child	15	20	12	16	19	25,3	14	18,7	15	20	75	100
A serious child disease in 1st child	7	9,3	15	20	26	34,7	12	16	15	20	75	100
To get weak in middle ages of 1st child	8	10,7	8	10,7	18	24	26	34,7	15	20	75	100
Living up to middle ages of 1st child	14	18,7	15	20	4	5,3	22	29,3	20	26,7	75	100

When participants made to suppose their first child in some special health conditions, the biggest sensitiveness was seen in heavy mental degradation. (49,3% very important and 24% important). In other words, termination of the pregnancy would ethically be acceptable if the child was born with heavy mental degradation.

The second most voted health condition is 'living up to 4 years.' This living condition is referring to Tay-Sachs disease. As Brown (1990: 78) explains:

“...Children with Tay-Sachs disease develop normally during the first few months of life, but by six months progressive neurological degeneration occurs, head control is lost, and convulsions may set in. By the age of two blindness and head enlargement are manifest, and the child requires constant nursing. There is no known cure for the disease, and death occurs before the age of five...”.

The ethically acceptance of the termination of pregnancy to a fetus with this disease is voted at the rate of 29,3% very important and 22,7% important. Some controversial conditions were also asked to participants in order to see their approaches to these situations. The possible obesity (32%) of the unborn was seen as the most serious special condition which may cause an end via termination of the pregnancy. Depression (25,3%) and homosexuality (20%) are expressed as other ethically acceptable reasons of such sort of abortion of the first unborn baby. These rates are important because they show that some of the individuals still regard people with depression and who are homosexuals as sick which should not be born. According to 2,7% of participants, 'wrong sex' is also an ethically acceptable reason for the termination of the pregnancy.

Up to this part of the study there were no so much meaningful differences between ethical attitudes and economical status of participants. Only the relationship between “living up to 4 years” and “mild mental degradation of 1st child” and monthly income are interesting for the study proposal.

These two ethical conditions were voted so much in the general evaluation of the question. However their statistically meaningful relationship with economical status may be worded that the importance of ethical acceptance of living up to 4 years in the termination of pregnancies is decreasing by the increase in the incomes.

Table 18.

'Monthly income and Mild mental degradation of 1st child'

	Very important		Important		Not too Important		Not Important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
0-1000	1	5,3	3	15,8	6	31,6	6	31,6	3	15,8	19	25,3
1001-2000	10	47,6	2	9,5	3	14,3	2	9,5	4	19	21	28
2001-3000	3	13	3	13	8	34,8	4	17,4	5	21,7	23	30,7
3001-10000	1	10	2	20	2	20	2	20	3	30	10	13,3
No answer	-	-	2	100	-	-	-	-	-	-	2	2,7
Total	15	20	12	16	19	25,3	14	18,7	15	20	75	100

For the relationship between the incomes and the ethical health condition of mild mental degradation of 1st child, similar with the previous one, but this time the ignorance rates of this issue is increasing by the increase in the incomes. However, there is a different situation in the income group of 0-1000 TL. Through the rate increases in the tables, there could be an expectation that the highest importance for both of the issues should come from the income group of 0-1000 TL. Nevertheless, the importance levels of rates are a little low and the ignorance rates ('not important') are relatively high as they are seen in the tables. Participants whose incomes were over 3000 TL may have necessary socio-economic conditions for a baby with such health problems or handicaps. Thus, these health problems may not be regarded as serious problems for some of them.

People, whose income is below 1000 TL, are in a different position than people, whose income is over 3000 TL. Participants who are in this group of income possibly do not come from well-educated strata of the participants. Thus this group of participants might have answered according to their pure emotions, personal

values or religious beliefs. The relationship between monthly income and people who voted for religious authorities as an effective actor in decision making process of pregnancy testing is meaningful for the study. In this picture, it is seen that the biggest importance to the religious actor is given from the income group of 0-1000 TL.

In Rabino (2003a: 375)'s study on researchers, the acceptance of abortion was highest for the situations defined as diseases, especially when the onslaught is early in life. Termination is considered ethically acceptable if the unborn child would most likely be severely mentally retarded (82%), die of a disease by age four (76%), or develop a chronic painful disease in childhood (62%). Abortion is considered acceptable by fewer respondents if the in utero diagnosis were to indicate the likelihood of the child developing a disease causing death as a young adult (43%) or being mildly mentally retarded (36%).

Opposition to termination occurs with (1) conditions that are less serious or that would not necessarily be characterized as diseases or (2) when the onset is later in life. Abortion, therefore, is considered not ethically acceptable if the unborn child would most likely not be the sex parents hoped for (88%), be homosexual (83%), suffer from depression (70%), be extremely overweight throughout life (70%), develop a totally debilitating disease around age fifty (52%), or be mildly mentally retarded (36%).

Table 19.

Ethical Acceptance Distribution of Abortion Reasons (for second child)

	Very Important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Heavy mental degradation in 2nd child	33	44	16	21,3	4	5,3	1	1,3	21	28	75	100
Wrong sex in 2nd child	-	-	-	-	4	5,3	50	66,7	21	28	75	100
Depression in 2nd child	6	8	12	16	12	16	24	32	21	28	75	100
Homosexuality of 2nd child	12	16	1	1,3	13	17,3	28	37,3	21	28	75	100
Obesity of 2nd child	5	6,7	15	20	13	17,3	20	26,7	22	29,3	75	100
Living up to 4 years of 2nd child	18	24	17	22,7	4	5,3	14	18,7	22	29,3	75	100
Mild mental regradation of 2nd child	13	17,3	12	16	15	20	14	18,7	21	28	75	100
A serious child disease in 2nd child	7	9,3	11	14,7	24	32	12	16	21	28	75	100
To get weak in middle ages of 2nd child	8	10,7	4	5,3	18	24	24	32	21	28	75	100
Living up to middle ages of 2nd child	14	18,7	11	14,7	7	9,3	20	26,7	23	30,7	75	100

Table 20.

Ethical Acceptance Distribution of Abortion Reasons (for age over 35)

	Very Important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Heavy mental degradation if you were 35+	36	48	12	16	4	5,3	4	5,3	19	25,3	75	100
Wrong sex if you were 35+	-	-	-	-	2	2,7	54	72	19	25,3	75	100
Depression if you were 35+	7	9,3	11	14,7	9	12	29	38,7	19	25,3	75	100
Homosexuality if you were 35+	12	16	3	4	13	17,3	28	37,3	19	25,3	75	100
Obesity if you were 35+	5	6,7	15	20	13	17,3	22	29,3	20	26,7	75	100
Living up to 4 years if you were 35+	18	24	17	22,7	6	8	14	18,7	20	26,7	75	100
Mild mental degradation if you were 35+	13	17,3	12	16	15	20	16	21,3	19	25,3	75	100
A serious child disease if you were 35+	7	9,3	13	17,3	24	32	12	16	19	25,3	75	100
To get weak in middle ages if you were 35+	6	8	6	8	16	21,3	26	34,7	21	28	75	100
Living up to middle ages if you were 35+	14	18,7	11	14,7	9	12	20	26,7	21	28	75	100

In Rabino (2003: 49)'s study, he explains that there was a consensus that an ethical distinction between gene therapy to treat disease and gene therapy to effect improvements. Majority of people involved in his study believe enhancement is not acceptable, i.e., non-health-related physical, as well as intellectual and moral, enhancements for persons already functioning within the normal range should not be performed. Whether for physical, intellectual, artistic, or moral traits, or for gender selection, his respondents claimed that the possibility of choosing preferred traits for babies raises disturbing questions involving evolution, diversity, safety, equal opportunity, social preferences, the rights of prospective children, and basic humanity. Besides, Rabino (2003: 50), underlines that his respondents' open-ended comments point out the added difficulty of defining what is normal or determining the point at which avoidance of disease becomes enhancement.

For the findings of this study, when one look at a table which shows some critical rates of this part, he will see that the enhancement criteria of the respondents would have little changes if some of the social or biological conditions were different.

Table 21.

The Most voted Ethical Abortion Reasons

	1st child (%)	2nd child (%)	Over 35 (%)
Heavy mental degradation	74	65,3	64
Living up to 4 years	52	46,7	46,7
Living up to middle ages	38,7	33,4	33,4
Mild mental degradation	36	33,3	33,3
Obesity	32	26,7	26,7
Depression	25,3	24	24
Homosexuality	20	17,3	20
Wrong sex	2,7	-	-

In general, there is a decrease in the ethically acceptance of termination rates when one looks at the latter condition ('second child' and 'over 35'). This means that participants of the study give the biggest importance to especially health of their first child. This result may take its meaning from the possibility of planning only one child. Others may be about the social pressures, psychological or biological preferences, etc. Being in the mid-life ages and having the second child have nearly the same effect upon the participants of the study. Only 'homosexuality' and 'the wrong sex' of the unborn baby have different results. Homosexuality acceptance rates of participants have a reduction in the second child condition like others, but the rate of 'over 35' condition is not less than or the same as the 'second child'. Conversely, the ethically acceptance rates of 'homosexuality' have an increase and the same rate as the 'first child' for the criteria of 'over 35'. People may have different life expectations in their older ages; in fact it is really difficult to make an interpretation in such a kind of condition.

Participants, belonging to the age group of 25-35, are the most sensitive group with respect to giving importance (20% very important and 15% important) to the heavy mental degradation of 1st child. The sensitiveness of age group of 46-60 (66,7% very important) comes after the most reproductive age group.

Table 22.

Cross Tabulation of 'Age and Heavy mental degradation of 1st child'

	Very important		Important		Not too important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
18-24	-	-	3	42,9	2	28,6	-	-	2	28,6	7	9,3
25-35	20	52,6	15	39,5	-	-	-	-	3	7,9	38	50,7
36-45	9	50	-	-	2	11,1	-	-	7	38,9	18	24
46-60	8	66,7	-	-	-	-	1	8,3	3	25	12	16
Total	37	49,3	18	24	4	5,3	1	1,3	15	20	75	100

The participants whose ages are between 18-24 are the most irrelevant group among the other age groups. This irrelevance may depend on their distance to the experience of having a child. Some of the participants (7,4%) who already have a child or more, regarded the undesired sex of the unborn baby as ‘wrong sex.’ Participants who did not answer for the number of their children (100%) regarded the situation as ‘not too important,’ and all of others found the termination because of the ‘wrong sex’ of the unborn baby as not ethical (74,7%) or had no comment (20%) about the subject.

The termination of an unborn with homosexuality is ethically acceptable for the participants of ‘can’t read or write’ (100%), ‘primary school’ (20%), ‘high school’ (13,3%), ‘college’ (26,9%), and ‘post-graduation’ (8%) education levels.

Many participants from all education levels have problem with homosexuality so that they can accept abortion of their prospective baby with homosexuality. This problematic situation is in fact in parallel with the political view of recent Turkey. As it is known, Selma Aliye Kavaf who was the previous Secretary of State for Family and Woman, stated that she had believed in homosexuality as a biological defect, an illness which had to be treated (Tokmakoğlu, 2010).

Table 23.

‘Education Levels and Homosexuality of 1st Child’

	Very important		Important		Not too Important		Not important		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Can not read or write	2	100	-	-	-	-	-	-	-	-	2	2,7
Primary school	1	20	-	-	-	-	4	80	-	-	5	6,7
Junior high school	-	-	-	-	1	50	-	-	1	50	2	2,7
High school	-	-	2	13,3	3	20	3	20	7	46,7	15	20
College	7	26,9	1	3,8	9	34,6	4	15,4	5	19,2	26	34,7
Post Graduation	2	8	-	-	2	8	19	76	2	8	25	33,3
Total	12	16	3	4	15	20	30	40	15	20	75	100

It is a fact that in many places include Turkish cities and people, there are many issues related to sex, thoughts and technology which should be treated.

4.3. Opinions on ‘Enhancement’ and ‘Eugenics’

Up to here, the prospective babies of the participants are scanned, aborted if it is seen necessary and if its time is not a problem and ethically reasoned. However, there is another reproductive choice of prospective parents, which allows them to choose their babies before the insemination.

These statements were questioned in order to see the reactions or agreements for different uses of genetic tests, some of which are verbalized as eugenics. Increasing beauty and intelligence levels, in other words enhancements of these characteristics named as positive eugenics as noted before. One of the imminent things in genetics is its uses which would provide enhancements in personal qualifications. When some opposite thoughts are examined:

For Francis Collins, it is irrational to intervene eugenically because, amidst all the environmental “noise,” a few points on your child’s IQ will make very little difference. For Eric Lander, it is irrational because you can more easily help your child simply by taking greater care in his upbringing (Appleyard, 1998; quoted from Rabino, 2003: 44). Again, when one think about the socio-economic inequalities in a so-called developing country society, he would be suspicious about the access to and results of such usages of technology.

Thus, the first statement in the table, is questioning the agreements about such a possibility of positive eugenics. 52% of participants agree with the statement that

genetic testing would be used in order to increase beauty and intelligence levels. No comments are emerging towards this statement. 22,7% of them have no comment. It should be regarded that this is a controversial statements, namely, it is difficult to answer because it is difficult to decide whether it [enhancement] is true or false.

This question was asked to 1, 229 specialized participants from Molecular genetics, pediatric genetics, Linkage mapping & polymorphisms, Population genetics/epidemiology, Cancer genetics, Cytogenetics, Prenatal/perinatal genetics, Inborn errors/biochemical genetics, Late onset/adult genetics disorders and Gene structure by Rabino (2003: 33) via e-mailing to all US Members of the American Society of Human Genetics (ASHG).

Table 24.

Thoughts about Eugenic Statements

Statement	Agreement	TOTAL	
		N	%
“Genetic testing will be used in order to increase beauty and intelligence levels”	Surely agree	3	4
	Agree	36	48
	Disagree	15	20
	Surely disagree	4	5,3
	No comment	17	22,7
	TOTAL	75	100
“I would like to determine the sex of my unborn baby”	Surely agree	1	1,3
	Agree	18	24
	Disagree	23	30,7
	Surely disagree	29	38,7
	No comment	4	5,3
	TOTAL	75	100
“If it is possible to choose the baby, I give permission to interfere in the belly of woman”	Surely agree	3	4
	Agree	7	9,3
	Disagree	27	36
	Surely disagree	26	34,7
	No comment	12	16
	TOTAL	75	100

In Rabino (2003: 42)'s study, even though a large proportion (67%) of respondents oppose genetic enhancement, a significant minority (25%) are somewhat comfortable with improving human capabilities through genetic techniques.

Other statement in the table was about determining / choosing the sex of the baby. Participants were asked if they would like to determine the sex of their unborn baby. Surely the majority (69,4%) of them did not want to determine such an important feature of their unborn baby. Relatively minority but another meaningful part (25,3%) of the sample wants to determine the sex of their baby. Many different socio-economic conditions may impact on such kind of deterministic desires. For example in Eysel (2007)'s study, one of the participants' explanation about this subject was noteworthy. One man was married two years ago, and they do not have any children although they want. This circumstance is dishonorable for the young man because according to his family customs, they must have child. Moreover, they should have a male child in order to survive their surnames and family customs. Thus this technology which possibly provides to have baby with desired sex, would be welcomed especially by this section of the society.

The final statement of this table asks that if it was possible to choose the baby, whether they would give permission to interfere in the belly of woman or not. While 70,7% of participants disagree with this statement, 16% of them have no comment about it. These rates seem hopeful in terms of germline therapies in the future. Nonetheless, it is known that there are examples of prospective mothers and fathers who have pregnancies for quadruplets, quintuplets, sextuplets, septuplets or even octuplets, which is in a risky position for both of the prospective mother and her babies. These pregnancies do not naturally materialize in general; it is a sort of

complicated IVF techniques. In order to provide adequate conditions for rational number of babies' surviving, doctors and specialists suggest prospective mother and fathers to undergo an abortion. As mentioned before, it is known that there are some examples of death of all of babies in the womb because of their prospective parents' choices of not to choose any of them.

Rabino (2003: 45) was looking for the answer to his question over perfecting prospective children. His respondents were asked which traits they perceived as ethically acceptable among the possible characteristics parents might one day be in a position to "choose" for a baby. Reduced "negative" personality traits, such as violence, was chosen by 40%; improved intelligence by 25%; and increased "positive" personality traits, such as caring, by 19% of his participants. Others mentioned, that gain minimal acceptance, are: weight (16%), musical ability or artistic talent (14%), height (12%), athleticism (11%), strength (10%), gender (9%), skin color (6%), and hair or eye color (6%).

Erbaş (2008: 119) found in her field study that 40.5% of all participants would like to determine the health of their unborn baby, 26.3% of them would determine the intelligence, 8% would determine the beauty and 7.9% of them would like to determine the sex of the unborn baby. The interesting result of this part of her study was the high rate of rural participants in the statement about the intervention in order to get the children with desired properties (Erbaş, 2008: 116).

For the decision of determining the sex of the unborn, the effect of gender is clear for this study. As it can be predicted for Turkish people, as the members of a masculine society, male participants were more willing (71,5%) than female

participants (52,5%) to determine their unborn baby's sex. This finding is very important when the efforts for being a more developed country are taken into consideration. Dealing with the same statement in terms of education variable, the most positive answers are gathered among primary school (80%), junior high school (50%) and high school (46,7%) education levels. Out of participants from the education group of 'can't read or write,' a descending order related to the increase in education levels is seen clearly. The first thing which comes to mind at first glance for the rejection of uneducated group is their possible belief to the destiny and God. Namely, they rejected due to the fact that they possibly thought that it could be meddling with destiny and God if they think to choose the sex or other characteristics of the unborn baby. The answers of better-educated groups are partly in parallel with uneducated group in the results but their reasons should be different. The answers of better-educated group should be given as a result of a more logical and modern thinking. Many participants from this group repeated this explanation: '..there is no difference between a female or a male baby.. How and why will I determine it?' Having child/ren or not made no big difference for this statement as assumed before. There is a small difference between the agreement rates of participants with children (29,6%) and agreement rates of participants without children (23,9%).

Increasing the beauty and intelligence levels of the unborn baby may differ according to age, monthly income or education levels. As in the first relation, age groups are examined below and surprisingly, the age group of 46-60 is found as the group of which agreement rates are highest (75%). Surprisingly because this group has the least chance to have a baby in natural reproductive ways at the same time. Thus, this late position possibly gave them a power for assuming such a fictious

condition. The converse is also valid: this age group possibly has children and even grandchildren. Hence, they saw the generation partially and would like to interfere with the beauty or/and intelligence levels of his/her family members anymore in order to give them a big chance for success in their early lives.

Nearly all of the income groups have similar rates for this statement (57,9%, 57,2%, 60%). However the income group of 2001-3000 has the least rate (43,5%) among others. It is seen that affording did not make a difference in the minds in voting for enhancement hypothesis for this sample.

Table 25.

Age – Monthly income - Education and ‘Increasing the beauty and intelligence levels of unborn’ Argument

	Surely Agree		Agree		Disagree		Surely Disagree		No comment		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
18-24	-	-	2	28,6	3	42,9	-	-	2	28,6	7	9,3
25-35	1	2,6	23	60,5	10	26,3	1	2,6	3	7,9	38	50,7
36-45	-	-	4	22,2	-	-	2	11,1	12	66,7	18	24
46-60	2	16,7	7	58,3	2	16,7	1	8,3	-	-	12	16
Total	3	4	36	48	15	20	4	5,3	17	22,7	75	100
0-1000	2	10,5	9	47,4	5	26,3	-	-	3	15,8	19	25,3
1001-2000	1	4,8	11	52,4	5	23,8	-	-	4	19	21	28
2001-3000	-	-	10	43,5	5	21,7	4	17,4	4	17,4	23	30,7
3001 - 10000	-	-	6	60	-	-	-	-	4	40	10	13,3
Unanswered	-	-	-	-	-	-	-	-	2	100	2	2,7
Total	3	4	36	48	15	20	4	5,3	17	22,7	75	100
Can not read or write	2	100	-	-	-	-	-	-	-	-	2	2,7
Primary school	-	-	5	100	-	-	-	-	-	-	5	6,7
Junior high school	-	-	2	100	-	-	-	-	-	-	2	2,7
High school	-	-	6	40	5	33,3	-	-	4	26,7	15	20
College	-	-	9	34,6	5	19,2	4	15,4	8	30,8	26	34,7
Post-graduation	1	4	14	56	5	20	-	-	5	20	25	33,3
Total	3	4	36	48	15	20	4	5,3	17	22,7	75	100

Disagreement and confusion about the statement which claims an increase in beauty and intelligence levels start with the High school education level. Related statistics for this study shows that there is a little critical thinking gathered especially in college education level.

In sum, as every person, the participants of this study also would like to have 'better' children and favor using this technology for this aim. These enhancements would be made by the use of reproductive biotechnology at *molecular level* as mentioned before. IVF and PGD are two branches of reproductive biotechnology and final discussion of this level.

4.4. Opinions on IVF and PGD

As explained in the conceptual information part of the study, IVF technique is also used for PGD applications. The main difference of PGD is its elective and selective character which was applied before the insemination. This character of PGD constitutes the crucial part of the rejections towards it. Again, in general, this character of PGD directs the legal regulations or restrictions of many states towards PGD. In parallel with this, while IVF is accessible in many countries, PGD is restricted in some of them.

Firstly, because of this reason, in this part of the study, participants were asked both for the test tube (in vitro) babies and for the PGD babies. Below, the acceptations and rejections of participants about the acceptance of having a test-tube baby are seen in the table.

Table 26.

Thoughts about having In-Vitro babies

	N	%
Yes	45	60
No	14	18,7
No comment	16	21,3
Total	75	100

While 60% of participants were positive about the technique, 18,7% of them were negative about it. Not a minority, 21,3% of them has ‘no comment’ about the subject. Reasons of negativity to the subject were defined as unreliability to the doctors (‘they can make an insemination with wrong sperm’), belief to destination (‘if I cannot have a baby via normal sexual ways, that means, god does not want me to have it.. it would be wrong to insist on having one’), unnecessary of having a baby (‘everybody does not have to give a birth to a baby, I would not go with the technology. I would look after orphan babies’), and lack of information.

While the biggest rejection to the IVF technique is coming from the income group of 0-1000, the most favorable group to IVF technique is the income group of 1001-2000. As explained before in this study, 0-1000 TL income group was the group which is generally constituted from participants who were less-educated, less-informed and suspicious about new technologies. Thus, the negative approaches to the technique came particularly from these strata.

In the relationship between having test tube babies and age groups, it is obvious that there is an increase in the acceptance of age groups in descending sequence from 36-45 (66,7%) to 18-24 (42,9%). The age group of 46-60 has the least (41,7%) acceptance to the technique, possibly depend on their older ages for having babies.

Table 27.

Cross Tabulation of 'Ages and Thoughts towards Having In-Vitro Babies'

	Yes		No		No comment		Total	
	N	%	N	%	N	%	N	%
18-24	3	42,9	-	-	4	57,1	7	9,3
25-35	25	65,8	7	18,4	6	15,8	38	50,7
36-45	12	66,7	-	-	6	33,3	18	24
46-60	5	41,7	7	58,3	-	-	12	16
Total	45	60	14	18,7	16	21,3	75	100

Education could be an influential factor in making a decision about being for test-tube babies. The most optimistic education group for test-tube babies was not surprisingly, post-graduation group. High school (60%), junior high school (50%) and primary school (60%) graduations had mild participation to the acceptance of IVF. However college had a small rate (53,8%) as a relatively well-educated group. Thus, it could be summed as, the most informed group and well-educated groups are more favor of IVF technique.

Already having children has a negative effect on the decision making process about IVF. In other words, participants who have child/ren have more negative answers about having IVF (33,3%). One of the possible reasons of this result is the irrelevant position of participants with child. Namely, people without child/ren may think more emphatically about assisted reproduction techniques than people with child/ren. The biggest 'no answer' rate was also came from the participants who has no child (30,4%).

One may expect a difference between genders about having IVF or not, but in this study there is not. The IVF acceptance rates of genders are equal with the other (60%). However, the gender which has more 'no' answers is male. Female

participants may think and move partly through their maternal instinct about having a baby anyway.

Participants partly accepted (24%) the idea of having a baby via Pre-implantation Genetic Diagnosis. Another important rate here is seen in the 'no comment' answers (54,7%) of participants. A woman from Ankara, stated the idea of the majority: “..the technique is not important.. the important thing is to have my baby!” To me, this statement is very important with respect to its result-oriented approach. The owner of this answer is female and thus the importance increases. This woman thinks that getting a baby is over all other things. This woman may undergo risky hormones for many times; if it does not work, she may use others eggs or sperms for this aim and give permission for inseminating this embryo in her womb; if there is a problem in her womb she may rent a womb; and moreover she can pay very high amounts for all these steps at once or for many times. She will never care about the commercialization of the body and reproduction or ethical issues related to all these experiments and redundant embryos. Her answer is simple: she wants to have her baby. Because that is a female above all and there are thousands of women who behave like this and just think about giving birth to a child. They are ready to try every unnatural application for reducing this natural feeling.

Of course it is not only a baby. If there is a chance to have a healthier baby, why won't they use it? Many prospective parents today, either they are under risky position or not, may choose to have a baby through PGD. Via this technology, they think they can remove the possible genetic risks of their babies, moreover, they may choose their baby's sex. Below, one can find the small picture of participants who voted for the acceptance of having baby via PGD or not.

Table 28.

Thoughts towards Having Baby via PGD

	N	%
Yes	18	24
No	16	21,3
No comment	41	54,7
Total	75	100

In other words, there are people who would (24%) and who would not think (21,3%) about having baby by the technique of PGD among the participants of this study. Nevertheless, the final decision would be seen certainly in their real life because the reason of 'no comment' answers cannot be predicted. However a man from Bursa, agreed with the PGD as an option for a healthier reproduction claimed that 'The country which I live in is important in these answers.. If I were living in Switzerland, my answers would be different..' and implied that the absence of social state forces its public to be stronger and healthier even via reproductive technology. The same respondent had a general interpretation about the study subjects: 'A knife cuts both bread and your finger.. in other words, they make us sick in one side and they are treating in the other,' and worded his suspicious about technology.

Some of in-depth interviewed parents of children with Down syndrome were surprised at the developments in reproductive technology when they hear some news and the information about PGD. Upon that, one of them expressed her surprise at this as '...really! Why do not I know anything about it? I would have liked to use it for that pregnancy..' before she learned the price and the impossibility of using it 15 years ago. The comment is common for all the participants who were interviewed: if it was possible to access this technology in the birth times of their babies with Down,

they would like to have a trial via PGD. They are relieved with the non-risky conditions of their pregnancies which are being talked about. In other words, with a high degree of probability they would not have benefited from PGD even if there had been some applications of it many years ago because neither their ages [all of the prospective mothers' ages were under 35] nor their familial stories [there were no people or aborted babies with Down in their families] would have led them to have PGD for a pregnancy. The results would have probably been the same.

As it is known widely, Pre-Implantation Genetic Diagnosis is so expensive for a lower or even middle-class family to have an access to it. As everybody knows, there are many couples who sold their assets or got debts in order to have more implantation trials and chance of having a baby through IVF. Thus, there could be a relation between affording PGD or namely, monthly income and having PGD.

Even if there is no direct correlation between these variables, the highest acceptance of having baby via Pre-implantation Genetic Diagnosis is seen in the income group of 3001-10000 (40%). The most opposite group against PGD is the lowest income group (42,1%). According to another view of thinking, the opposition of lowest income group may be associated with their relatively religious or traditional beliefs.

The age group of 25-35 (34,2%) is again the in favor of having baby through PGD. With the addition from the next group, it can be said that the participants whose ages are between 25 and 45, accept having a baby via Pre-implantation Genetic Diagnosis as an assisted reproductive technology.

Participants who are at particularly the Post-graduation (40%) and college (26,9%) education levels, have no problem with having baby through Pre-

implantation Genetic Diagnosis. The most hesitant education groups about having baby via PGD are found as high school (80%) and primary school (60%). Participants who have child/ren already are mostly opposite (40,7%) to have another baby through Pre-implantation genetic diagnosis. Participants who have no child mostly voted for 'no comment' answer (65,2%) in the study.

However, there is no vital diversity between the respondents with (25,9%) and without child (23,9%) about voting for having child through PGD. When their 'No Comment' answers (65,2%) are taken into consideration, the target group would be recognized as participants without child.

Male participants seem as more willing to having a baby via Pre-implantation genetic diagnosis when their rates (34,3%) are compared with females' (15%). The votes of female respondents are gathered under the 'no comment' answers (67,5%) in this study. A male participant who is against PGD based his answer on his 'nefs' (self): ' I would not stand and I would like to choose other characteristics if it is possible...then that baby would like a robot..I don't want.'

Participants, who regard religious authorities as an effective actor (40% very important and 40% important) on decision making process of pregnancy screening, generally are opposed to have baby via Pre-implantation genetic diagnosis. An old female participant from Samsun (with four children) against abortion because of some religious concerns explained that it is acceptable for her to have a baby via PGD, only if that sperm is from her husband with no doubt.

In other words, it is possible to argue that a religious beliefs and behaviors are partly effective on the attitudes of the respondents of this study about the products / services of reproductive biotechnology.

Final relation is searched between participants who voted for the acceptance of the application of Pre-implantation genetic diagnosis and who voted for the acceptance of the application of In-vitro fertilization.

Table 29.

Accepting IVF according to the acceptance of PGD

	PGD – Yes		PGD - No		PGD – No comment		Total	
	N	%	N	%	N	%	N	%
IVF – Yes	18	40	2	4,4	25	55,6	45	60
IVF – No	-	-	14	100	-	-	14	18,7
IVF - No comment	-	-	-	-	16	21,3	16	21,3
Total	18	24	16	21,3	41	54,7	75	100

In this relation, it is found that all participants who voted against to IVF, was also against to PGD. However, participants who voted for the acceptance of IVF was in acceptance (40%), or rejection (4,4%), or at most had no comment (55,6%) for PGD. This result is in parallel with the technique which is used for this technology because technically, IVF is used in Pre-implantation genetic diagnosis. Thus, all of people who accept IVF can be in different feelings or thoughts for PDG. It is possible to have a test tube baby without any selection or election. However, all people who may accept to use PGD in reproduction must accept also IVF as a tool for PGD in order to create the embryo process out of the womb of prospective mother.

As a result, it is obvious that all of the participants who assume that they may use IVF in having babies are not in positive thoughts with also PGD in this study. Restrictions in some countries and discussions towards the technique may lead to such kind of suspicious.

An important detailed information about restricted applications of PGD and IVF, would be about their ‘trans-border characteristic’ which forces people who want to apply a restricted or legally blurred medical enterprise to move a more liberal state or region or neighbor no matter where that application is made legally or not. A similar example is given under the *IVF Tourism* subtopic of Waldby and Cooper (2008: 61)’s paper: ‘A recent investigation by the UK Observer newspaper found that fertility clinics in the Ukraine and other parts of the former Soviet Union recruit young East European women and send them to clinics in Southern locations - Cyprus and Belize, for example - to provide oocytes for North European couples, who pay between £8,000 and £12,000 per treatment.’ Definitely it is widely known that, for example abortions over legally permitted time, sex selective abortions or choosing embryos with possible desired characteristics through Pre-implantation genetic diagnosis, are generally performed in illegal small medical centers or in Cyprus for also Turkish women. Moreover, one of the gynecologists in Ankara, Turkey stated Eysel (2007) that many people from European countries where sex selection is restricted were coming to Turkey in order to inseminate a baby with desired sex. In regard to the policies and regulations for genetic screening and selective breeding are still blurred in Turkey.

As it is stated in the beginning of the study, the main controversial issue here was the developments in reproductive technology. They have different places in this sphere because of their ability of shaping the generations’ features and so the future. PGD and IVF are possibly the most important parts of the developments in reproductive technology. Hence, neither health nor beauty is inseparable part of the ‘natural’ anymore.

The worst thing is that the ‘making live’ and ‘letting die’ functions of bio-power are not visible as it is seen in the Holocaust, and conversely, they are invisible and stands behind the rationalities, namely, so-called individualistic choices of the parents. Individualism in which there is neither an autonomous decision of woman nor having an informed consent of her.

In the June 2004, issue of the Journal of Gerontology, bioethicist Daniel Callahan made three arguments:

- The problems of war, poverty, environment, job creation, and social and familial violence will not be solved by everyone living a much longer life.
- I don’t believe that if you give most people longer lives, even in better health, they are going to find new opportunities and new initiatives.
- What longer lives will do to child bearing and rearing, social security and Medicare? (Callahan, 2004; quoted from Bailey, 2009: 40).

One can easily agree with the arguments of Callahan. Again, for his first and third argumentations together, some suggestions may be offered to Callahan. He claims that living a much longer life cannot help in job creation. However, there are some jobs already created in both theory and practice:

If there is infertility, which means female or male person or both of them have some problems with their reproductive abilities, there will an immediate need for the sperm and oocyte for artificial insemination or IVF techniques.

Thus, first job is offered for men: ‘sperm providers.’ Nowadays these providers are chosen from the scientists and intelligent males and possibly without money. However, in the near future, with the help of genetic screening these providers may

be chosen from even the rural areas. These banking can be offered especially for single women and lesbians who desire to have a baby and can afford the service. A good and bad news, except people who would enjoy with these works, all of positions are offered for of course lower-class people. That means another inequality but also earning money by investing on bodies as venture capital.

Sperm will absolutely need ‘oocyte and its providers,’ females. It is known that providing oocyte is not as easy as providing sperm from a male. Oocyte provider should undergo high hormone treatment and a surgical operation under the anesthesia. Dickenson (2006: quoted from Wildby and Cooper, 2008: 61) argues that oocyte donation is more like live kidney donation than sperm donation, in terms of the singularity of the tissue, the risks involved in the process and the possibility of long-term consequences. The worst thing is some women regard this extreme position as a job in their lives. A nurse working in the industry, ‘told *The Observer* that some women viewed egg donation as their main source of income, going through the process of being injected with hormones at least five times a year’ (Barnett and Smith, 2006: quoted from Wildby and Cooper, 2008: 62).

Another job is ‘surrogate motherhood’ as it is known and discussed widely in media. In the beginning of this application, it is know that biological mothers of prospective mothers were used as the volunteer womb of the fetus who will be the grand child of the old mother soon. This position also commercialized after a while. Womb for rent is offered especially for homosexuals and upper-class women for whom it is impossible to bear a baby and who does not want to use and damage her own body for this heavy work (!). This alternative would be chosen until artificial wombs are ready.

Next job might be ‘milk providers.’ As it known in general, breast milk is still the best choice for newborn feeding, since companies have not developed baby milk with such rich contents, yet. So, if there were babies who will grow in a foreign mother womb, they would need breast milk as the best feeding choice in their first year of lives. Breast milk can be offered for more widely use and would possibly have the biggest commercial value. The providers of this wonderful milk would possibly be surrogate mothers or poor women who lost her baby or have her own baby but need money. It should be stated here that in the past of Turkey, there were ‘milk mummies’, and thus ‘milk brothers, and sisters.’ As it is learnt through non-academic interviews with older people, there is no change value of that milk; in other words, there was no reason for having a ‘milk mummy’ among neighbors out of requiring breast milk and having much more breast milk and of course solidarity. Of course there is no need to say that, via this modern form of ‘milk providing,’ there will not be ‘milk mummies or brothers or sisters’ because of course neither ‘milk mummy’ nor ‘baby’ will know each other because unfortunately ‘solidarity’ also transformed into ‘commerce’ recently.

As it is seen easily through the new job descriptions that bio-economy mainly based on the female and reproductive biotechnology. However, these job creations are not cheerful developments for the entire society especially because of its unequal character. As Pollock notes, ‘in anonymous egg donation, phenotype is privileged above all else. Physical similarity between donor and recipient makes the donation invisible’ (2003, 253: quoted from Wildby and Cooper, 2008: 62). From this admission, it may be argued that this ‘invisible’ character of artificial techniques is the ‘art’ of the recent ‘brave new world’ and for further discussions, the main

solution for such sort of invisibility seems to be ‘regional exploitation’ of sexual labor.

Now a shift from an ‘invisible’ and ‘desirable’ subject to another but very ‘visible’ and ‘undesirable’ subject is hold. A look at some family experiences with Down syndrome.

4.5. An Effort for ‘Making live’: Family experiences with Down syndrome

There is another group of people who have a very special situation in this study. That is families of children who born with Down syndrome.

It is widely known that quite a few women who were obtained as very risky in having a baby with Down syndrome and who rejected to undergo abortion had very healthy babies; and in parallel with this many women who were obtained as non-risky in having such a defected baby and continued pregnancy had babies with Down syndrome. Some people think that this result takes its source from the chance or religious factor, while others think about the unreliability of screening tests. It is obvious that, no matter this technology is used or not, there will possibly be disabled people in our closer social environment.

Four in-depth interviews with the people who have children with Down syndrome are conducted as a focus group research. In addition to a mother who was the president of the Ana Kucağı Association of Protecting Children with Down syndrome, Ankara, there were three more people, two mothers and one father, who have a child with Down syndrome in the group.

Two of mothers who have a child with Down syndrome were from the special group which could not be estimated via pregnancy screenings. They were under 30 years when they are pregnant, their husbands were not their relatives, they have no relative with Down in their wide-families, their gynecological visits and ultrasound findings were also normal. They were in an expectation of having a healthy baby during their pregnancies however they got their babies with Down on the birthday.

Third mother could not have a chance even to undergo pregnancy screening because of the timing; her child with Down syndrome was born 20 years ago. 20 years ago there were neither screening applications nor ultrasound technologies in Turkey. However she was extremely happy because her daughter with Down syndrome was one of the lucky children with Down syndrome, she would work as an office holder from now on. She was lucky three times because in addition to get a job her syndrome was not developed dramatically as many others and her other family members were helpful and patient for her special education, so that her little sister would like to be a social worker in order to help her sister in her education.

All of three female interviewees were unemployed and housewives. Male interviewee was of course employed because he had to get money for his twin babies one of which was born with Down syndrome, and wife. In addition to the efforts of mothers, there are generally other women (generally mother in law) who help the women of the house in the general baby care and special child care. It is seen that it is the life of the family and particularly woman which is affected from that exceptional situation. Woman who has a baby with Down syndrome cannot be employed easily because there is neither a person nor an institution where her special child could be looked after and educated, similar with her.

It was supposed before the in-depth interviews with parents of children with Down syndrome that there should be an intentional reason of being a mother or father of a child with Down. However, there was nobody who had a chance to choose to have a baby with Down syndrome or not: they were all people who were made a mother or father of a baby with Down by the technology or destiny as ‘exceptions.’ However the father of twin babies explained that he would not have wanted his wife to undergo an abortion even if he could have learnt the syndrome of his son because of his religious beliefs. The statement of the president of the Ana Kucağı Association of Protecting Children with Down syndrome, Ankara is considerable here: ‘..in the medium of our Association, there are many people who did not choose to undergo the termination of the fetuses with Down only because of their religious beliefs’.

Male participant was a new father of a twin babies. He and his wife were informed that triple test could not be applied on twins or other multiple pregnancies by their doctor. Their ultrasound findings were normal. However, while their daughter was born very healthy, their son was born with Down syndrome. He explained that he asked for another hospital if they could perform these tests for their twins there but they were answered negatively again. After these interviews, the possibility of applying these tests on multiple pregnancies is asked to some fertility clinics and hospitals and it is learnt that of course these tests could also be performed on multiple pregnancies. They were evaluating the results for each of the babies separately. As noted above, the result would not differ according to the test results; he would choose, or he would also affect his wife’s decision in favor of the birth of the baby with Down syndrome. One of his share was remarkable, ‘especially our older male relatives, fathers or brothers, do not believe in the syndrome of our baby.

We show the physical differences of his hands, foot fingers, eyes from his twin sister, but they still insist on believing in his normality..’

Below you can find some statements about abortion:

‘...If the syndrome of my baby had been predicted during the pregnancy.. yes I would have undergone an abortion’ says a mother of a child with Down. However she adds, ‘...but now it is impossible to think this.. I love my daughter.’ They are in general, fond of their children with Down. Hence, a mother of a boy with Down says surprisingly, ‘...yes, it is so difficult. But I got used to my boy. So sometimes I imagine if something happened to my son –god bless him- I would look after another child with Down from Child Welfare Agency..’ To me, this is a sort of response to the people who is afraid of having a baby with Down syndrome because of an anxiety if they die before the baby. For this woman, the death of her son would be a disaster for her because her life gained another meaning after the birth of her son with Down syndrome: she is ‘making live’ him ‘with her hands’..

The president of the Association and a mother of a daughter with Down explains ‘...of course there are people who undergo an abortion as a result of a pregnancy screening. I know a couple like that. But they regretted doing it after the application..’

The reliability of doctors and screening tests were juddered for all of the people who were interviewed. Because of the fear of having another baby with Down syndrome or of being unable to spare time to that baby, two mothers that were interviewed explained sincerely that they underwent abortions after the birth of their child with Down. One of these mothers added, ‘..it [having a child with Down] takes all the time of especially the woman.. I would not spare time for another baby..’

When they were asked if more money was needed for the care of their special children or not they answer, 'no' at first moment. However they remember that their child was caught diseases because of their weak immune system and generally problematic respiratory and cardio-vascular systems. They have health problems also with their eyes and so they have to use eye-glasses and see a doctor regularly. All these health care applications need money after a while because there are various difficulties in the health care system of Turkey. The president of the Association gives an example and makes it easier to understand: "...one day, she became sick after she came home from her school. When I questioned I understood that she sit under the sun for a long time and became sick because of disinterestedness. She is unable to understand and say something related to her situation even if it is too bad.. If I had more money I could keep a tutor for her education.' They have everything to 'make live,' however they need money for 'making life better' for their children as everybody else.

One of the mother says, '.. in spite of everything I am happy. Really.. because I see that my efforts to my daughter are not bootless. However my efforts to my (healthy) son are completely bootless. My daughter answers me too late [because of her special health situation] while my son does not answer intentionally.'

There is a Cafe in Kızılay, Ankara where young people with Down syndrome works as waiters and waitresses. I find people who goes there as customers very kind, tolerant and gentle in general. For example waitress came and asked in a rude way: 'What will you drink?' Customer answered kindly: '..fruit juice, please honey.' Waitress asked again: 'What do you want?' Customer answered in a gentle way again: 'Fruit juice, please.' Waitress understood the order, however wanted to ask the

sort of fruit juice. Waitress asked again: 'Madam, which fruit juice?' Customer answered her in a happy mood for her understanding: 'Oh, sorry. I would like to drink peach juice.' After this relatively long conversation, waitress girl with Down syndrome brought orange juice. And customer smiled and drank it even if she disliked orange juice.

This little conversation is very important with respect to the humanity side. It is not difficult to estimate the intolerance of customers if this conversation is occurred in a 'normal' café. This customer knows waitress' special health and mental problem and goes there intentionally, in order to have a contribution to the employment of these young people. Waitress uses an order paper for the notes of orders but of course she notes as she understood. However these misunderstandings are not transforming into big problems there because customers behave in extremely gentle way there.

Especially in big and cosmopolite cities people are more intolerant to other people in many life places. If these special health and mental problems make people more tolerant and helpful to other people, to me, people may keep on governing themselves for being a more and more person like human rather than withdrawing humanity.

CHAPTER V

FINAL DISCUSSION

The natural character of health is completely changed by biotechnological applications in medicine. Moreover, these applications go beyond the birth, to the pre-natal level of life. Reproductive biotechnology gives people an opportunity to choose the physical and mental characteristics of their unborn babies and so combines the unnatural structure of assisted reproductive techniques and socially determined individualistic decisions. For many writers, only if the counselors' and physician's intentions and biases are kept out of the process can the autonomous decision of the pregnant woman fully come to light (Wieser and Karner, 2006: 47). Here, the social environment of the women also considered as the actors of such decisions which mainly effect women and the embryo. In short, decisions of which answers are already given by the science, economy, family, education, religion and culture, are approved and signed by women and enter the life itself.

In the first chapter, it is seen that despite the relatively recent commercial and modern uses and understanding of medicalized body of especially women and fetuses, traditionally determined decision making process is still valid for underdeveloped and developing countries like Turkey. This non-autonomous decision making process of the individual makes the problem more complicated. Hence in this study, this determination is illustrated throughout controversial reproductive issues and pre-natal choices of prospective parents. The questions of 'in

which conditions these preferences are being made' and 'what are the social pros and cons of these genetic preferences' gain importance when the social environment and social results are considered.

This thesis examined for answers related to (1) desire for sex selection, eugenics through enhancements, (2) important decisions and effective actors in the pregnancy process, (3) abortion as the result of pregnancy screening and abortion when the fetus is older than 10 weeks, (4) the ethical acceptance of some abortion reasons, and (5) In-Vitro babies and Pre-implantation genetic diagnosis.

Nearly half of respondents would end their pregnancies when a defect is found in the baby's genes (heavy mental degradation, Tay-Sachs disease), while other half of them has a changeable of mind. Perceived difficulties of looking after a disabled child are especially affected the answers of the participants. This is an example of the suspicion of people about the 'irrelevant state' (Erbaş, 2009) in making it easier to look after a disabled child. Absolutely it should be easier and cheaper to choose healthy babies and abort the defected ones via surgical and biotechnological methods rather than 'making live' for them. This would of course regard as a face of the bio-politics by Rose, by its preference of 'letting die' for this disabled strata of the society.

The termination of a pregnancy because of hypothetical homosexuality or wrong sex is ethical for some of the participants. These attitudes of people would make one fear of next preferences because these situations would symbolize a Turkish interpretation of 'homosexuality as a disease.' If one accepts a baby with undesired sex as something that should be erased even via termination, that person who is under the effect of traditional and socio-economic norms may make

irresponsible choices and mistakes easily as it is discussed in the previous chapter. IVF is known widely and its acceptance is not arguable for many of participants of this study; however a hesitation and suspicion for PGD is point at issue. Again, PGD and eugenic adoption for the general of the respondents is seen.

There was a deficiency in critical evaluating of reproductive technologies and policies for the respondents of this study. The critical approaches change especially according to education levels. The general findings and discussions in this study stated that reproductive biotechnology would possibly affect some disabilities and undesired abilities at the same time, in other words, the natural and hence the social side of the humanity in negative ways. At this point and also for previous paragraph, Feenberg's remind for the absence of 'social rationality' should be underlined: '...in no way implies the presence of individual irrationality; namely mere prejudice and emotionalism (Feenberg, 2008: 7).' In parallel with Feenberg's notions which were revised from Weber's concepts, 'control' and 'calculation' of reproductive applications, and 'classification and application of rules' to its purpose of uses gain importance.

Unfortunately, today in many countries including Turkey, the picture seems like that: even if you are not in a risky position, specialists make you believe that you had to undergo pregnancy screenings and even deep synthesis. The main goal may be earning more money and getting more experience from these risky techniques. However these recommendations result in an increase in abortion rates and no meaningful change in live birth of babies with for example Down syndrome as known.

Respondents of this study think in a way which is in accordance with the goals of biotechnology and its drivers. Throughout this study, they were thinking under the effects of their emotional, familial, or patriarchal links in general. Their reliance on reproductive technology and its vital defenders as gynecologists and geneticists, may lead them to undergo even an unnecessary or unreliable insemination of course if they can afford IVF or PGD; or abortion if they are middle or lower class citizens. As Novas and Rose quoted, ‘clinical medicine, increasingly over the last half of the twentieth century, constituted the patient as an ‘active’ subject – one who must play their part in the game of cure (Armstrong 1984; Arney and Bergen, 1984: quoted from Novas and Rose, 2000: 489)’. Thus, it would not be difficult to predict that in a near future if the reliability of screenings is succeeded, handicapped children will remain as defects of lower-class people. In other words, it will be difficult to find another Sabancı –rich and naturally unlucky by having a disabled child- anymore.

As it is understood, there is a limited access to assisted reproductive technologies due to its expensive nature. This inequality characteristic of new technologies gives hopes to the other aspects of equality. As Kass (2009: 15) stated, if everyone had an equal access:

...to brain implants or genetic improvement of muscle strength or mind-enhancing drugs, a deeper disquiet would still remain. Even were steroid or growth hormone use by athletes to be legalized, most athletes would be ashamed to be seen injecting themselves before coming to bat. Besides, not all activities of life are competitive: it would matter to me if she says she loves me only because she is high on “erotogenin,” a new brain stimulant that mimics perfectly the feeling of falling in love. It matters to me when I go to a seminar that the people with whom I am conversing is not drugged out of their minds.

Then this inequality in the access to the assisted reproductive technologies is also creates a chance for the naturally reproduced humanity. Equality in this respect may lead eugenic applications which could affect the entire society when the possible irrational choices of parents are thought. For this reason, equal access to the assisted reproductive technologies but for people who are really in the genetically risky position and need the technology may be offered. Novas and Rose named this individual in such position as ‘somatic individual’: ‘..in which new and direct relations are established between body and self (Novas and Rose, 2000: 491).’ In this context,

‘...when an illness or a pathology is thought of as genetic, it is no longer an individual matter. It has become familial, a matter both of family histories and potential family futures. In this way genetic thought induces ‘genetic responsibility’ – it reshapes prudence and obligation, in relation to getting married, having children, pursuing a career and organizing one’s financial affairs. These descriptions do not merely inform the judgements, calculations and actions of agencies of control – they shape the self-descriptions and possible forms of action of the genetically risky individual (Novas and Rose, 2000: 487).’

However, as it is mentioned, a picture of a near future is drawn above. Of course there will be feudal preferences and socio-economic differences and so a hierarchy and social inequality among the individuals. A widely known example of this is a society imbalanced with sexes. Out of some exceptions, nearly all traditional Turkish families would desire to have their first baby with the sex of male.

And finally, what will be the role of women? The importance and validation of natural reproduction is getting blurred by the assisted reproduction. According to Ettore (2002: 79), the discipline of reproductive genetics aids in medicalisation process through the circulation of its limiting but powerful routines, values and invasive practices. Pregnant bodies are viewed ever more as immaterial, while at the

same time, these pregnant bodies and their physicians are brought into a system of normative surveillance through the reign of technologies (Balsamo, 1999: quoted from Ettore, 2002: 79).

Similar tendency is observed in Nazi History. Gupta (1991: 40) mentions pro-natalism for positive eugenics and anti-natalism for negative eugenics:

‘...There was in fact a close connection between Nazi pro-natalism for ‘desirable’ births and its anti-natalism for ‘undesirable’ ones. Women were thus hailed as ‘mothers of the race,’ or in stark contrast, vilified, as the ones guilty of ‘racial degeneration.’ There was a complex relationship between racism and sexism and they were not just two forms of exploitation...’

Eugenics and reproduction, thus women are very close to each other. This close relationship makes the difference between individual preferences and intended systematic eugenic choices invisible because individual preferences tend to be under the effect of social and political climate. Reproductive biotechnology is possibly used as a tool of such a political climate and shapes individualistic preferences. Swedin (2006) makes some predictions about these technologies:

“New Technologies can only be controlled when all nations capable of using those technologies agree to do so. Absent broad agreement, Technologies will be developed as a matter of international competition. Nuclear weapons and nuclear power are a perfect example of this. Just as the nuclear arms race and the so called “missile gap” of the late 1950s and early 1960s obsessed Americans during the Cold War, a future genetic human-enhancement race with China, with fears of a “smart-baby gap,” may well drive future policies. I believe we will see this within the next 20 years.”

A systematic non-governmental organization movement for democratization of technology, as Feenberg (2008) mentioned, may be considered in controlling such a tendency. However, people should believe in their power rather than reproductive technologies.

As a result, there is a relatively new sector which directly affects reproduction

and human nature. Bio-power and/or bio-politics is governed towards this sector and its uses in the daily lives of people. Hence medically and sexually exploited commercial science and bodies and thoughts are created in a short process. So that there are nationally and internationally constituted commercialization polities and economies occurred on the use of sexual labor. In short, Biotech industry showed itself on the exploitation of reproduction and bodies and future this time. In this study, as a mere reflection of all these developments is searched on the individualistic decisions of people qua prospective parents as much as possible.

From Socio-psychological side, it is also very important to understand disability without any humanitarian complex. As all of the interviewees who have a child with Down syndrome of this study stated:.. [Having a child with Down] makes a person more and more patient... gentle... sensitive... namely, more human. You may not take any reply to your efforts from your normal (!) child, but you surely get a reward from this special (!) child after a while. Can you imagine that these special children may remind us our humanity, only if we give up eliminating and isolating them from the society? When we discard of our complexes and decide to be near them, why not?

If we disregard the excitement for being bio-power and having bio-economies, namely exploiting from the inequalities, health and bodies, in order to provide a more democratic use of reproductive biotechnology, here are some policy suggestions:

Firstly, for 'making live' equally for all people, even handicapped, governments should take political, economic and daily cautions to make life easier for both handicapped people and their relatives. More and more basically, it is known that all sidewalks should be rebuilt for handicapped people, but they are not. One of the

duties of such a relevant state should be bringing its people a point of view which is exempted from all kinds of prejudices against disabled people and ableism.

More importance to the decisive autonomy of woman in reproductive decisions should be given. It is a fact that this suggestion may be applicable only if a systematic and long-term education is provided for the entire society via education system or televisions or awards or penalties. Women are unable to give autonomous decisions and worse thing is that they be exposed to violence in the houses in also Turkey as well as many other countries. They afraid of getting divorce because primarily they don't want to be face to face with economical difficulties. As a start, for example 'real enhancements' in the women's employment – out of oocyte providing, surrogate motherhood, prostituting or other kinds of sexual labor - may give women, whose socio-economical levels are low, courage and may affect many decisions related to women autonomy in short term.

For a better living between 'pure rationality' and 'irrationality', namely with 'social rationality' of Feenberg (2008), technology should be more democratic, more controlled and classified as it is seen in the previous discussions. Through the controlled and classified applications of reproductive biotechnology, only high risk groups may benefit from assisted reproductive technologies in a cost-free way. A world wide strict ban and penalties or even expensive costs over the sex selective abortions and sex-selective PGD also would prevent people from such kind of PGD or abortion travels interurban and overseas. Moreover, the strict character of that application could be enlarged for the other unnecessary embryo selections in the countries. Not a fatwa but a systematic and well-equipped education may be effective in preventing prejudices towards both disabled people and women's secondary and

other traditionally given positions as humans. While ‘Living with Disability’ and ‘Social Sexes in the Society’ may be offered as the names of such lectures or seminars in the high school level education, ‘Sex-based Inequality and Ableism in Biotechnology’ lectures or seminars may be offered as political tools of such a suggestion.

By doing so, it may be supposed to make people getting relatively far from Eugenic thoughts or applications. From the critical/scientific thinking side, with the words of Erbaş (2008), ‘the dangerous thing is not biotechnology itself or its possibilities; it is its purpose and way of using’. Critical thinking gains importance also in this stage. If seeing the world as engineer means taking the advantage of opportunities, increasing profits, decreasing costs and improving efficiency (İnam, 2005: 167), genetic engineering will necessarily convert the world into a ‘nightmare’ rather than a ‘dream’ as affirmed by Ho (2001). To me, as individuals, as a society and also as a world, we are neither well-prepared nor brave to be a ‘Brave New World’ of Huxley (2001), luckily. If the world which people lived in is accepted as a sort of ‘New world,’ undoubtedly disabled people are seen as the Savage(s) of the society. Anyway, nobody guarantees that we will not be a John, The Savage(s) of the future’s brave world. In fact, John, The Savage was representing emotion, humanity, naturalness, love and all other things that belong human. Then, we will hope to be the Johns of the future or better to protect our humanitarian and natural characters. As a novel, ‘Brave New World’ was very successful in predicting near future. Thus, there is an urgent well-disposed social scientist interpretation of and intervention to these controversial issues in assisted reproductive techniques and its social reflections.

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Appendix A – Questionnaire Form in Turkish

1. Yaşadığınız yer (sehir):
2. Cinsiyetiniz: 1) kadın 2) erkek
3. Yaşınız : 1)18-24 2) 24-35 3) 36- 45 4) 46- 60 5) 61 +
4. Eğitim Durumunuz : 1) okuma yazması yok 2) okur-yazar 3) ilkokul 4) ortaokul mezunu 5) lise mezunu 6) üniversite mezunu 7) lisans üstü
5. Mesleğiniz :
 - 1) Ev kadını
 - 2) Öğrenci
 - 3) İşsiz.....(ay)
 - 4.1) İşçi
 - 4.2) Memur
 - 5) Kendi hesabına serbest çalışıyor.....(iş, kişi)
 - 6) Emekli.....
 - 7) Diğer.....
6. Aylık toplam geliriniz :
7. Çocuğunuz var mı? Kaç tane? (çocuk bekliyorsanız lütfen belirtin)
 - 1) evet tane
 - 2) hayır
 - 3) hamilelik

GENETİK MÜHENDİSLİĞİ VE İÇYERLEŞİM ÖNCESİ GENETİK TANI (PGT) HAKKINDA KISA BİR BİLGİLENDİRME:

Genetik mühendisliği, canlıların kalıtsal özelliklerini değiştirerek, onlara yeni işlevler kazandırılmasına yönelik araştırmalar yapan bilim alanıdır.

Preimplantasyon genetik tanı (PGD), genetik bozuklukların embriyonun rahme yerleştirilmeden önce belirlendiği tekniktir. Genellikle in vitro fertilizasyon (IVF- tüp bebek - anne ve babadan alınan sperm ve yumurtanın rahim dışında döllendirilmesi) yöntemini kullanmaktadır. Bu, çiftlerin sağlıklı bir çocuk sahibi olma şansları ile birlikte, çoğul gebelik (ikiz, üçüz, dördüz hatta beşiz, altiz gebelikler)

riskini de büyük oranda artırmaktadır. PGD gebelikte uygulanan amniyosentez veya kordon kanı incelemesi gibi tanı yöntemlerine güncel bir alternatif sağlamaktadır. Genellikle, bu uygulamalar (amniyosentez, kordosentez), sonuçların olumsuz olması durumunda gebeliğin sonlandırılması ile sonuçlanmaktadır¹⁶.

<p>8. Aşağıdaki yargı içeren ifadelere katılıp katılmama durumunuzu belirtiniz (lütfen her bir satır için tek kutucuk işaretleyiniz“√/”)1 Tamamen katılıyorum 2 Katılıyorum 3 Katılmıyorum 4 Kesinlikle katılmıyorum 5 Bilmiyorum</p>	 <p>Herkesin söylediği şeylere katılmıyorum bu şekilde düşünür.</p>	 <p>Herkesin söylediği şeylere katılmıyorum bu şekilde düşünür.</p>	 <p>Kaçer söylediği şeylere katılmıyorum bu şekilde düşünür.</p>	 <p>Bene hiçi söz söyleyen birine katılmıyorum.</p>	 <p>Kaçer söylediği şeylere katılmıyorum bu şekilde düşünür.</p>
	1	2	3	4	5
1.Genetik mühendisliği, yaşamı bütün insanlar için daha iyi hale getirecektir.					
2.Genetik mühendisliğinin yararları uğruna çevreye zarar verilebilir.					
3.Genetik mühendisliği sayesinde daha sağlıklı bir toplum elde edilebilir.					
4.Genetik analiz testleri, birçok hastalığın ortaya çıkmasını engelleyici olarak kullanılacaktır.					
5.Genetik analiz testleri mükemmel bir tıbbi yeniliktir.					
6.Genetik analiz testleri sağlıklı genetik koşulların nedenini saptamak ve önlemek amacıyla kullanılacaktır.					
7.Genetik analiz testleri güzellik-zekâ değerlerini yükseltmek amacıyla kullanılacaktır.					
8.Genetik analiz testleri, Teşhis – Tedavi yöntemi olarak kullanılacaktır.					
9.Genetik analiz testleri doktorumun beni sağlığımla ilgili yönlendirmesine yardımcı olabilir.					
10.Genetik analiz testleri yaşam tarzımı değiştirmeme yardımcı olabilir.					
11.Genetik analiz testleri erken teşhis konusunda devrim yaratmıştır.					
12.Genetik analiz testleri ile elde edilen bilgi ‘genetik bilgi’dir. Genetik bilginin paylaşılmasının toplum içinde eşitsizlik yaratacağına inanmıyorum.					
13.Genetik çalışmaları herhangi bir risk taşımamaktadır.					
14.Genetik çalışmalar için zaman harcamaya değmez.					
15.Genetik çalışmaları hükümet denetim ve gözetimi gerektirmektedir.					
16.İnsanlar, doğal yapıyı bozacak şekilde doğaya müdahale etmemelidirler.					
17.Genetik analiz testleri, bazı grupların yönetimce dışlanmasına/aşağı görülmesine neden olabilir.					
18.Genetik analiz testi, meslek içi ayrımcılık yapılması amacıyla kullanılabilir.					
19.Genetik bilginin başka kişi veya kurumlarla					

¹⁶ Ozturk S. ve Demir N. (2009), Preimplantasyon Genetik Tanıda Kullanılan Tanı Materyali Ve Testlerin Önemli Özellikleri, Türkiye Klinikleri J Med Sci;29(1):236-45.

paylaşılması gerekir.					
20. Genetik bilgiyi ellerinde tutanlar bunu, diğer insanlar üzerinde baskı aracı olarak kullanacaklardır.					
21.Genetik analiz testleri ile edinilen bilgi ayrımcılık temelli olarak, aleyhte kullanılabilir.					
22.Genetik analiz testleri, sigortalar tarafından, sağlık sigorta kapsamlarını sınırlandırmak için kullanılabilir.					
23.İleride, sigorta şirketleri, genlerinde herhangi bir hastalık saptadığı birini sigortalamayabilir.					
24.Halk, medya sayesinde genetikle ilgili olarak doğru bir şekilde bilgilendirilmeyecektir.					
25.Genetik analiz testleri ile, üremede belli grupların seçilmesi ya da dışlanması sağlanacaktır.					
26.Bu tür testler, toplumsal sonuçları bakımından Tanrı ve dini bilgiler ile ters düşmektedir.					
27.Sahip olacağım çocuğun cinsiyetini belirlemek isterim.					
28.Henüz tedavileri mümkün olmasa da hastalıklara olan yatkınlıklarımızı bilmemizin iyi olacağını düşünüyorum.					
29.İstediğim özelliklerdeki bebeği seçmeyi mümkün kılacaksa, anne karnina müdahale edilebilir.					

9. Son yıllarda genetik araştırmalar ilgisini, Akdeniz Anemisi, Down Sendromu gibi genellikle tek gene bağlı ve ender görülen hastalıklardan geri çekerek; kanser, AIDS, kalp hastalıkları gibi çok daha sık görülen kompleks (çok nedenli) hastalıklara doğru kaymaktadır. Sizce insan genom araştırmalarının izlemesi gereken yol bu mudur?

1) Evet

2) Hayır

3) Bilmiyorum

Cevabınızın nedeni

10. Genetik araştırmaların aşağıda belirtilen durumlara odaklanması gerektiğine ilişkin düşünceleriniz nelerdir. Derecelendiriniz.

1= Çok önemli 2= Önemli 3= Çok önemli değil 4= Hiç önemli değil

1.Erken ölümler, verdiği sıkıntı, sakatlık derecesi bağlamında hastalığın toplumsal yükü	(1)	(2)	(3)	(4)
2.Hastalığın tek genle olan ilişkisi (veya çevresel bileşenlerle bileşenlerle olan ilişkisi)	(1)	(2)	(3)	(4)

3.Tedavi edilme potansiyeli	(1)	(2)	(3)	(4)
4.Ticari kaygılar, örneğin ilaç tedavi pazarının boyutu	(1)	(2)	(3)	(4)
5.Finans edilebilme potansiyeli	(1)	(2)	(3)	(4)
6.Hastalığın araştırılmasındaki kamu desteği	(1)	(2)	(3)	(4)
7.Diğer	(1)	(2)	(3)	(4)

11. ‘Artık birçok sağlık durumunun test edilmesi mümkündür. Hamilelikte yapılan ve bebeğin Down sendromu, talasemi (Akdeniz anemisi), sickle cell anemisi (orak hücreli anemi) veya kistik fibroz (solunum, sindirim, ureme fonksiyon bozukluklarına ve hatta olume neden olabilen genetik bir hastalık) gibi ciddi bir genetik hastalık ile doğup doğmayacağını belirli olasılıklarla ortaya koyan testler bulunmaktadır. Bu gibi durumlar için herhangi bir tedavi henüz bulunmamaktadır; ancak anne adayına hamileliğinin sonlandırılması önerilebilir’. Sizce bu testi yaptıрма kararı nasıl alınmalıdır:

- 1) Tüm anne adayları bu testleri yaptırmalıdır.
- 2) Testleri yaptırmayı yaptırmayacağına anne adayı karar vermelidir.
- 3) “ anne ve baba adayı birlikte karar vermelidir.
- 4) “ bütün aile birlikte karar vermelidir.

12. Bu testleri yaptırmaya karar vermenizde etkili rol oynayacak kişileri

1= Çok önemli 2= Önemli 3= Çok önemli değil 4= Hiç önemli değil,
olarak derecelendiriniz.

1.Eş	(1)	(2)	(3)	(4)
2.Arkadaşlar	(1)	(2)	(3)	(4)
3.Ailem	(1)	(2)	(3)	(4)
4.Doktorum	(1)	(2)	(3)	(4)
5.Dini otoriteler	(1)	(2)	(3)	(4)
6.Eşimin ailesi	(1)	(2)	(3)	(4)
7.Diğer, belirtiniz	(1)	(2)	(3)	(4)

13. Varsayalım ki test, bebeğinizin ciddi bir genetik hastalık yatkınlığı ile (Down sendromu, zeka geriliği vs.) doğacağını gösterdi. Siz /veya eşinizin kürtaj olmayı / olmasını ister miydiniz?

1) evet

2) hayır

3) bilmiyorum

14. 2827 sayılı nüfus planlaması kanunu (27 Mayıs 1983);

5. maddeye göre, “Gebeliğin 10. haftası doluncaya kadar anne sağlığı açısından tıbbi sakınca olmadığı takdirde, istek üzerine rahim tahliye edilir. Gebelik süresi 10 haftadan fazla ise rahim ancak gebelik, annenin hayatını tehdit ettiği veya edeceği veya doğacak çocuk ile onu takip edecek nesiller için ağır maluliyete neden olacağı hallerde doğum ve kadın hastalıkları uzmanı ve ilgili daldan bir uzmanın objektif bulgulara dayanan gerekçeli raporları ile tahliye edilir.” Bununla birlikte, USG ve genetik incelemedeki ilerlemeler ile yaşamla bağdaşır pek çok sakatlık ve hastalık 10 haftanın üzerinde tespit edilmektedir.

Bu bilgiye ve yukarıda varsayılan duruma göre 10 haftanın üzerinde bir gebelik durumu ve doğacak çocuğun ciddi bir genetik hastalık yatkınlığı olsaydı, siz kendiniz (veya partnerinizden) kürtaj olmayı/veya olmasını ister miydiniz?

1) evet

2) hayır

3) bilmiyorum

Neden? (lütfen not ediniz).....

15. Bazı ülkelerde bu sınır daha geç bir hamilelik haftası iken, hatta bazılarında sınır gözetilmezken; Türkiye’de uygulanan ‘10 hafta sınırı’ sizce uygun mudur?

Neden?.....

16. Sizce bebek aşağıdaki özelliklerin hangileri ile doğacaksa gebelik sonlandırma etik olarak kabul edilebilir, yine 1 (çok önemli)’den 4 (hiç önemli değil)’e kadar puanlandırınız:

	1. çocuk ise	2. çocuk ise	Yaşınız 35’in üzerinde ise
1.Ağır zeka geriliği	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
2.Anne-baba adayinin istediği cinsiyet olmama	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
3.Bunalımlı ruh hali	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
4.Homoseksüellik	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)

5.Yaşam boyunca aşırı şişmanlık	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
6.Dört yaşına kadar yaşama	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
7.Ciddi bir çocukluk hastalığı geliştirme	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
8.Genç bir yetişkin olana kadar yaşama	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
9.Hafif zeka geriliği	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
10.Orta yaşlarda tamamen güçten düşme	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)

17) Eğer eşinizle doğal yolla bebek sahibi olamasaydınız, tüp bebek yöntemi (anne ve baba yumurta ve spermnin laboratuvar ortamında bir tüpte birleştirilmesi ve anne rahmine yerleştirilmesi) ile bebek sahibi olmayı düşünür müydünüz?

1) evet

2) hayır

3) bilmiyorum

Cevabınızın nedeni:.....

18) Riskli bir gebelik yaşamak /eşinize yaşatmaktansa Pre-implantasyon Genetik Tanı yöntemi ile (hastaliksız genlerin önceden seçilmesi ve çoğul gebelik riski taşıyan ‘tüp bebekler’ in anne rahmine yerleştirilmesi ile) bebek sahibi olmayı tercih eder misiniz?

1) evet

2) hayır






3) bilmiyorum

Anket sonuçları ile ilgili bilgi almak isterseniz, e-mail adresiniz:

TEŞEKKÜRLER

Appendix B – Questionnaire Form in English

1. The city which you live in:
2. Sex: 1) kadın 2) erkek
3. Age : 1)18-24 2) 24-35 3) 36- 45 4) 46- 60 5) 61 +
4. Education : 1) neither read nor write 2) can read and write 3) primary school
4) secondary school 5) high school 6) university graduation 7) post graduation
5. Job :
1) House wife 2) Student 3) unemployed.....(month)
4.1) Worker 4.2) Staff 5) self employment(job, person)
6) Retired 7) Other
6. Monthly total income :
7. Do you have any child? Number? (if you/your partner are/ is pregnant, please mention)
1) yes Child/ren 2) no 3) pregnancy.....
8. Please sign “√” for each assumption according to your participation. (please sign only one space for each row)

1 EXACTLY AGREE 2 AGREE 3 DISAGREE 4 EXACTLY DISAGREE 5 NO COMMENT	 <small>Mutlaka olduğum zaman için bu görüşü belirtirim.</small>	 <small>Kendime göre olduğum zaman için bu görüşü belirtirim.</small>	 <small>Hiçbir şekilde olduğum zaman için bu görüşü belirtirim.</small>	 <small>Buna hiçbir söz söyleyen birime kazım .</small>	 <small>Kendiliğim zaman için bu görüşü belirtirim.</small>
1.Genetic engineering will make life better.					
2.I accept relatively high rates of risks to the environment to gain the potential benefits of					

genetic engineering.					
3.More healthy people can be gained by genetic engineering.					
4.Genetic testing will be used in order to prevent many diseases' emergance.					
5.Genetic testing is an excellent medical improvement.					
6.Genetic testing will be used to obtain the reasons of unhealthy genetic conditions and to prevent these conditions.					
7.Genetic testing will be used in order to increase beauty and intelligence levels.					
8.Genetic testing will be used as a diagnosis and treatment method.					
9.Genetic testing may help my doctor manage my health care.					
10.Genetic testing may help me in changing my lifestyle.					
11.Genetic testing has caused a revolution in early diagnosis.					
12.'Genetic information' is gained from genetic testing. To me, sharing of genetic information do not create inequality.					
13.Genetic studies do not entertain any risk.					
14.I would turn the clock back on genetic engineering research. .					
15.Genetic studies requires governmental control.					
16.Humans should not meddle with nature.					
17.The government would use genetic tests to label groups as inferior.					
18.Genetic information should not be shared with other individuals or institutions.					
19.People who holds genetic information would use this as a force tool on the other people.					
20.Genetic testing would be used to limit my health insurance coverage by insurence companies.					
21.In future, insurance companies could decide not to make insurance when they determined a disease in the genes of their customer.					
22.Public will not be informed correctly about genetics by the media.					
23.By the genetic testing, election or isolation of particular groups in reproduction will be provided.					
24.Genetic manipulation may take away God's role in human creation since new babies would be design according to human will not by natural means.					
25.I would like to determine the gender of my unborn baby.					

26. Even if their cures are not possible yet, I think knowing our tendencies for diseases is good.					
27. If it is possible to choose the baby, I give permission to interfere in the belly of woman.					

9. In recent years, the trend in human genetics research has been away from rare genetic diseases that are typically linked to a single gene & toward more common but complex (multifactoral) afflictions, such as cancer, AIDS, & heart disease. Is this the direction human genetics research should be taking?

- 1) Yes
- 2) No
- 3) Not sure

Why or why not?.....

10. How important is each of the following considerations for determining which specific diseases are good choices for genetics research? Rate each on a scale of:

1=Very important 2=Fairly important 3=Not very important 4=Not at all important

1. Societal burden of the disease, in terms of premature death, suffering, disability	(1)	(2)	(3)	(4)
2. Link of disease to single gene (vs. Multiple ones/ones with environmental components)	(1)	(2)	(3)	(4)
3. Potential for a cure	(1)	(2)	(3)	(4)
4. Commercial considerations, such as size of markets for pharmaceutical treatments	(1)	(2)	(3)	(4)
5. Funding possibilities	(1)	(2)	(3)	(4)
6. Public support for research on that disease	(1)	(2)	(3)	(4)
7. Other.....	(1)	(2)	(3)	(4)

11. 'It is now possible to test for many health conditions. How do you think the following test should be dealt with:

Tests in pregnancy to find out if the baby has a serious condition, for example; Down syndrome, thalassaemia, sickle cell anemia or cystic fibrosis. There are no

treatments in pregnancy for these conditions, but the mother can be offered a termination of pregnancy’.

- 1) All mothers should have these tests.
- 2) It is for the mother to decide if she has these tests.
- 3) It is for the mother and father to decide if the mother has these tests.
- 4) It is for the whole family to decide if the mother has these tests.

12. Grade each of the following people according to their effectiveness on your / your partner’s decision about these testings as:

1=Very important 2=Fairly important 3=Not very important 4=Not at all important

1.Partner	(1)	(2)	(3)	(4)
2.Friends	(1)	(2)	(3)	(4)
3.My family	(1)	(2)	(3)	(4)
4.Our gynecologist	(1)	(2)	(3)	(4)
5.Religious authorities	(1)	(2)	(3)	(4)
6.My partner’s family	(1)	(2)	(3)	(4)
7.Other.....	(1)	(2)	(3)	(4)

13. Suppose that, the test/s showed that your baby will born with a serious genetic disease (down syndrome, subnormality, etc.). Would you want/your partner to have an abortion ?

- 1) yes
- 2) no
- 3) no comment

14. According to many country laws the termination of any normal pregnancy older than 12 weeks is restricted. However, many handicaps and disease which get on well with the life can be obtained over 10th week of pregnancy through Ultrasonography and other ways of genetic diagnosis.

Assume that, you have a pregnancy over 10 weeks and an infant with serious genetic defects; would you want/your partner to undergo an abortion?

1) yes 2) no 3) no comment

Reason? note please.....

15. While this limitation was a late phase of pregnancies in many countries, even some of them do not regard any limitation; do you agree with '12 week limitation' which applied in Austria?
Why?.....

16. Termination considered ethically acceptable if the unborn child would most likely:

1=Very important 2=Fairly important 3=Not very important 4=Not at all important

	If this is your 1. Child	If this is your 2. child	If your age is over 35
1. Be severely mentally retarded	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
2. Not be the sex parents hoped for	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
3. Suffer from depression	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
4. Be homosexual	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
5. Be extremely overweight throughout life	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
6. Die of a disease by age four	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
7. Develop a severe childhood disease	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
8. Die of a disease as a young adult	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
9. Be mildly mentally retarded	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)
10. Be totally debilitated around fifty	(1) (2) (3) (4)	(1) (2) (3) (4)	(1) (2) (3) (4)

17. If you were not have a baby with your partner towards natural sexual ways, would you think of having a baby with in vitro fertilisation (IVF- a process by which egg cells are fertilised by sperm outside the womb, *in vitro*) methods?

1) yes 2) no 3) no comment

Reason:.....

18. Rather than having a risky pregnancy, would you prefer to have a baby with Pre-implantation Genetic Diagnosis (- a procedure that are performed on

embryos in order to choose wanted genes and implant these in vitro babies into mother's uterus; one of the risk is multiple pregnancies) method?

1) yes

2) no

3) no comment

If you want to be informed about the results, your e-mail address:

.....

MANY THANKS

Appendix C: Tez Fotokopisi İzin Formu

TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü	<input type="checkbox"/>
Sosyal Bilimler Enstitüsü	<input checked="" type="checkbox"/>
Uygulamalı Matematik Enstitüsü	<input type="checkbox"/>
Enformatik Enstitüsü	<input type="checkbox"/>
Deniz Bilimleri Enstitüsü	<input type="checkbox"/>

YAZARIN

Soyadı : Evsel Ocak
Adı : Gülsevim
Bölümü : Bilim ve Teknoloji Politikası Çalışmaları

TEZİN ADI (İngilizce) : CONTROVERSIAL ISSUES RELATED TO
REPRODUCTIVE BIOTECHNOLOGY: AN EMPIRICAL STUDY

TEZİN TÜRÜ : Yüksek Lisans Doktora

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir.
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir.
3. Tezimden bir bir (1) yıl süreyle fotokopi alınmaz.

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: 24. 02. 2012