NEGOTIATION WITH NEOLIBERALISM: THE MINING INDUSTRY IN TUNÇBİLEK UNDERGROUND MINE, TÜRKİYE

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submitted by **MELİK ZAFER YILDIZ** in partial fulfillment of the requirements for the degree of **Doctor of Philosophy in Sociology, the Graduate School of Social Sciences of Middle East Technical University** by,

Prof. Dr. Sadettin KİRAZCI
Dean
Graduate School of Social Sciences _____

Prof. Dr. Ayşe SAKTANBER
Head of Department
Department of Sociology _____

Prof. Dr. Hediye Sibel KALAYCIOĞLU
Supervisor
Department of Sociology _____

Examining Committee Members:

Prof. Dr. Nilay ÇABUK KAYA (Head of the Examining Committee)
Ankara University
Department of Sociology _____

Prof. Dr. Hediye Sibel KALAYCIOĞLU (Supervisor)
Middle East Technical University
Department of Sociology _____

Prof. Dr. Fatma Umut BEŞPINAR
Middle East Technical University
Department of Sociology _____

Prof. Dr. Kezban ÇELİK
TED University
Department of Sociology _____

Assoc. Prof. Dr. Çağatay TOPAL
Middle East Technical University
Department of Sociology _____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last Name: Melik Zafer YILDIZ

Signature:

ABSTRACT

NEGOTIATION WITH NEOLIBERALISM: THE MINING INDUSTRY IN TUNÇBİLEK UNDERGROUND MINE, TÜRKİYE

YILDIZ, Melik Zafer
Ph.D., The Department of Sociology
Supervisor: Prof. Dr. Hediye Sibel Kalaycıoğlu

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This thesis aims to evaluate the relationship between underground coal mines and neoliberalism, where traditional labor is intense, and to understand it within the realm of work sociology.

The thesis has two fundamental assumptions. First, it examines the negotiations between underground mining and neoliberalism. In underground coal mining, improvements in worker welfare and occupational safety and health point to a negotiation process with neoliberalism. This thesis examines the dynamics of the contested negotiation process. The second assumption of the thesis is that continuities and discontinuities can coexist in the transformation brought about by new technological developments in a traditional industry such as coal mining.

In March 2022, in accordance with these assumptions, in-depth interviews were conducted with 33 public and private company employees, management representatives, union officials, and academics at the underground coal mines of Kütahya-Tunçbilek. The thesis has been written using the primary data collected through these interviews.

Under four headings, the negotiation process with neoliberalism in underground coal mining and the relationship between technological advances and these dynamics are examined. Following discussions on "Labor process: Recruitment, knowledge, and skills," "The meaning of work, work ethic, efficiency, and control," and "organization and de-unionization," the views of employer officials and worker representatives were analyzed.

Finally, it was argued that both structures; underground mining and neoliberalism exist symbiotically in mutual interaction under the particular conditions of underground coal mining rather than the liquidation of neoliberalism in the negotiation process due to the objective conditions of underground coal mining.

Keywords: Neoliberalism, Negotiation, Labor Processes, Work Ethic and Work Sociology

ÖZ

"NEOLİBERALİZM İLE MÜZAKERE: MADENCİLİK ENDÜSTRİSİ TUNÇBİLEK YERALTI MADENİ, TÜRKİYE"

YILDIZ, Melik Zafer
Doktora, Sosyoloji Bölümü
Tez Yöneticisi: Prof. Dr. Hediye Sibel Kalaycıoğlu

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Bu tez çalışması, geleneksel işçiliğin yoğun olarak yaşandığı yer altı kömür madenlerinin neoliberalizm ile ilişkiselliğini değerlendirip çalışma sosyolojisi kapsamında anlamayı amaçlamaktadır.

Tezin iki temel varsayımı vardır. Birincisi, neoliberalizmin yeraltı madenciliği özelinde yaşadığı müzakerelere odaklanmaktadır. Yer altı kömür madenciliğinde işçi refahı ve İSG alanında yapılan iyileştirmeler neoliberalizm ile bir müzakere sürecine işaret etmektedir. Bu tez de söz konusu müzakere sürecinin dinamiklerini incelemektedir. Tezin ikinci varsayımı ise yeni teknolojik gelişmelerin kömür madenciliği gibi geleneksel bir iş kolunda yol açtığı dönüşümde devamlılıklar ve kopuşların bir arada yaşanabileceğidir.

Bu varsayımlar doğrultusunda Mart 2022 tarihinde Kütahya Tunçbilek yeraltı kömür madeni ocaklarında 33 kamu ve özel şirket işçisi, yönetim temsilcileri, sendika yetkilileri ve akademisyenlerle derinlemesine görüşmeler yapılmıştır. Tez bu görüşmelerde elde edilen birincil verilere dayanarak hazırlanmıştır.

Yer altı kömür madenciliğinde neoliberalizm ile müzakere süreci ve teknolojik gelişmelerin bu dinamiklerle ilişkiselliği dört başlık altında incelenmiştir. “Emek süreci: İşe alım, bilgi, beceri”, “İşin anlamı, iş ahlakı, verimlilik ve denetim” ve “örgütlenme ve sendikasızlaşma” başlıklarında yapılan tartışmaların ardından son olarak işveren yetkilileri ve işçi temsilcilerinin görüşleri analiz edilmiştir.

Son olarak yer altı kömür madenciliğinin nesnel koşullarından dolayı müzakere sürecinde neoliberalizmin tasfiyesinden ziyade bu özgün koşullarda yer altı madenciliği ile karşılıklı etkileşim içinde simbiyotik bir biçimde her iki yapının da kendilerini var ettikleri tartışılmıştır.

Anahtar Kelimeler: Neoliberalizm, Müzakere, İşçilik Süreçleri, Çalışma Ahlakı ve Çalışma Sosyolojisi

To my daughter

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ABBREVIATIONS

EKİ	Ereğli Coal Enterprises (*Ereğli Kömür İşletmesi*)
ELİ	Aegean Lignite Enterprise (*Ege Linyit İşletmesi*)
EU	European Union
CLA	Collective Labor Agreement
GLİ	Western Lignite Enterprises (*Garp Linyit İşletmeleri*)
JMO	Chamber of Geological Engineers (*Jeoloji Mühendisleri Odası*)
IMF	International Monetary Fund
KPSS	Public Personnel Selection Exam
KST	Coal Sales Dispatch Institutions (*Kömür Satış Tevzii Müesseseleri*)
MİSGEP	Improving Occupational Health and Safety Especially in Mining Sector Project
MNC	Multi-National Corporations
NAFTA	North America Free Trade Agreement
OHS	Occupational Health and Safety
ÖEM	Private Aegean Mining Co. (*Özel Ege Madencilik*)
PARS	Personnel Attendance Recording System (*Personel Devam Kayıt Sistemi*)
RFID	Radio Frequency Identification
SAP	Structural Adjustment Policy
SLİ	Seyitömer Lignite Enterprise (*Seyitömer Linyit Işletmesi*)
SOE	State-Owned Enterprise
TEPAV	Foundation of Economic and Political Research of Türkiye
TMMOB	Union of Chambers of Engineers and Architectures of Türkiye
TKİ	Turkish Coal Enterprise (*Türkiye Kömür İşletmeleri*)
TTK	Turkish Pit Coal Institution (*Türkiye Taşkömürü Kurumu*)
UK	United Kingdom
USA	United States of America
WB	World Bank

CHAPTER I

INTRODUCTION

"The accident happened in Soma. If some circumstances have changed, it is for their sake. May God have mercy on them all. It is happening for their sake. Otherwise, no one saw or knew us. There were those who knew, but maybe they didn't know that it was forced labor in this way. It is a difficult job. Mining is hard work." (G16-Digger)

1.1. Purpose of the Thesis

Mines have a fundamental importance in the development of human history. Thanks to minerals, humanity has had the opportunity to develop the tools and products necessary for survival in the face of natural events. For this reason, human history is divided into periods such as the Polished Stone Age, Copper and Iron Ages. The importance of minerals was not limited to the early ages. The use of minerals played a fundamental role in the industrial revolution and its aftermath and continues to do so today. It would not be wrong to think that minerals will be widely used in the future. Because minerals will inevitably continue to be used in the realization of the tools, machines, vehicles, high-tech devices, and infrastructures developed by humanity. Because minerals are not elements and minerals that can be economically obtained in laboratory environments.

Another ancient "natural resource" in human history is human labor and work. The extraction and exploitation of minerals is only possible through human labor and work. Humanity has processed minerals by adding its knowledge and labor, thus developing tools and machinery, and this has played an important role in economic and social development.

Mines were the most significant resource in both the production and operation of the steam engine, which was the driving force of the Industrial Revolution. This technological transformation in the production process was also a historical turning point in the processes of work and labor, and the transition from mercantile capitalism to industrial capitalism began to spread rapidly in other Western European countries, especially in England (Freyer, 2014). With wage labor disciplined by industrial capitalism, coalmines and the factories where they were used became labor centers until the 1930s.

The post-World War II period created an experience defined as the Welfare State in the western world until the first half of the 1970s. Here, production was carried out according to "scientific methods" and called Fordism, both production and consumption were regulated, and policies were in place that ensured mass factory regime, production, and consumption of these products in daily life within society (Harvey, 1997).

Whereas industrial capitalism tried to overcome the impact of the crisis of 1929 with the Great World War, it only found a balance in the 1950s, the collapse of the Bretton-Woods international monetary system in the 1970s prepared the crisis of the world economy in the 1970s. The solution to this crisis in the 1970s on behalf of capitalism was the birth of neoliberal policies, and in this way, financial globalization, which started with the acceleration of the geographical mobility and spread of capital to alleviate the problems with the working classes, entered a new crisis in 2008 by being saturated with credit (Harvey, 2015).

The coal industry, which fundamentally influenced the Industrial Revolution, entered a period of contraction starting in the 1980s. However, it continues to exist, albeit at a reduced rate compared to previous decades (Kalaycıoğlu and Çelik, 2014). Although it has been affected relatively more slowly by the mechanization and technological leap processes that other production sectors have experienced intensively, mining, which is very important in the history of labor, is undergoing a transformation due to the cheaper availability of coal mined from other countries, which has its share of globalization and neoliberal policies.

In this context, mining in Türkiye has developed in line with global trends and market relations. Mining activities, which were important for the industrial breakthrough of the Republic, became compatible with the world market in the 1950s, and since the 1970s, they have been oriented towards meeting global demand.

As in many other sectors, the Turkish mining sector underwent a process of change under the influence of global, national and local economic structural adjustment policies that emerged and continued between 1970 and 2020. Especially in the relationality, that neoliberalism has established with the mining industry, the 2014 Soma and Ermenek disasters are thought to have created the need for correction of neoliberalism as a periodic intervening factor regarding the nature of this relationship. Thus, like the examples in the world, the regulatory measures taken after major mining disasters are thought to have led to the transfer of new practices and technologies to underground coalmines in Türkiye.

It is thought that as a significant dimension of the changes in areas such as organization, institutionalization, techniques, and technology as a result of this relationality that underground mining, which is a traditional line of work, has established with neoliberalism, mining work is also transformed in the knowledge, skills, ethic and cultural areas related to work. This transformation points to a negotiation process between underground coal mining, a traditional occupation, and neoliberalism.

This situation constitutes an important area of interest, curiosity, and attraction for the sociology of work. However, the lack of studies on the dimensions of this relationality as a whole, its embeddedness-depth, its course, its effects on work structure and organizations, and the new situations it creates on the individuals, social structures and social relations involved draws attention.

1.2. The Scope of the Thesis

The importance of this research can be discussed under three headings in terms of form and content.

Firstly, as stated by Erkin (1969), underground mining, and coal mining in particular, is the most severe and difficult due to its characteristics and conditions.

Due to the difficulty of the conditions, unlike surface mining, technical work, investment and organization, albeit at a minimum level, is mandatory in order to extract coal to meet a certain demand. For many years, the Zonguldak basin alone has had unique characteristics in terms of carrying more labor, investment, and activity than any other mining activity, as well as issues that directly concern the transformation of "mining labor" such as occupational health, accident hazards and wage policies. Conmineing the weight of the agenda due to these peculiarities, coal mining has been the only truly unique branch of mining in Türkiye compared to metallic minerals and other types of mines. In this respect, this study is the first of its kind in Türkiye in terms of trying to understand the transformation in mining labor by focusing on the weight and specificities of "underground coal mining" in the sector.

Secondly, as stated in TEPAV's 2015 report titled "Contractual Arrangements in the Turkish Coal Mining Sector", coal mines cannot be the object of private ownership according to the provisions of the Turkish Constitution. However, under the rhetoric of meeting Türkiye's growing energy and coal needs and under the pretext that state-owned enterprises have high-cost mining operations, the Mining Law allows for the transfer of coal mining licenses to the private sector through royalty contracts. It is known that major state-owned coal mining institutions such as the Turkish Coal Enterprises (TKİ) and the Turkish Hard Coal Corporation (TTK) have granted many operating licenses to private companies through royalty contracts since 1984. Considering this expansion, we understand that private and public enterprises differ in terms of institutionalization, capital structure and labor cost, which is one of the most important cost items of the sector. In this study, it is important to examine the impact of neoliberalism on the transformation of mining labor and the comparative analysis of this public-private differentiation.

As it is known, there is an extensive domestic and especially foreign literature on the development of technical and technological infrastructure used in underground coal mining in Türkiye from an engineering perspective. Some of these studies include "Clean Coal Technologies" (Tamzok, 2012), "Mining's Acquaintance with Advanced Technologies" (Kızıl et al. 1995), "The Impact of Gas Monitoring and Early Warning Systems on Accidents" (Mallı, Kun, & Köse, 2014), "Technological Developments

and Their Relationship with Successful Mining" (Özkan, 1995). At this point, **another important aspect of the research is** that it focuses on the negotiation processes in the fields of control and surveillance processes of mining work, technological trainings, occupational health and safety, productivity in production and relations with the union within the scope of structural adjustment policies based on neoliberal political frameworks, depending on the transformation in work organization, technology and employer type, with the conceptual and theoretical framework of sociology of work.

1.3. Assumptions of the Thesis

The main topic of this thesis is to try to understand the relationality of the interaction and negotiation between neoliberalism and underground mining in the specific case of Tunçbilek underground coal mining.

The interaction between neoliberalism and underground mining due to the unique conditions of coal mining and the fact that it also contains the most traditional production processes in the history of labor, it is seen that both structures tend to maintain a symbiotic relationship in order to continue their existence. This relational linearity between neoliberalism and underground mining may occasionally go through processes in which one is more dominant than the other. These processes are determined by the political and financial aura of the period. While in the last decade of the last millennium it was neoliberal ideology that determined the dynamics in this aura, today, especially after the mine accidents and disasters and due to the global problems faced by neoliberal finance and policies, we can say that the hand of underground mining has become stronger in these negotiation processes. In this negotiation process, we can talk about some gains of mining labor, especially OHS. Another point to be noted here is that these gains were not realized as a result of an orthodox class struggle. In this process, the conditions that are prerequisites for the continuity of underground mining as a pure resource extraction have been effective. Neoliberalism has to ensure the continuity of these conditions, and in order to ensure the continuity of these conditions, it uses the possibilities of reproducing itself through the negotiation strategy by giving or taking concessions in the negotiation process.

Another issue that neoliberalism, which aims to maximize productivity and profitability, attaches importance to is the development of technological tools to increase productivity and profitability. Undoubtedly, the development of technological tools and their transfer to underground mines has had an impact not only on job descriptions but also on work culture in underground mining, as in every other industry. On the other hand, this research aims to understand the effects of these changes on work culture and worker ethic and values in particular. Indeed, these social realities and structures are the most important parties in the negotiation with neoliberalism.

In this context, the research is mainly concerned with:

1) The negotiations of neoliberalism in the case of underground mining and in the same period,

2) It is based on two basic hypotheses: that technological changes that take place within the neoliberal body of work, and which can be one dimension and output of negotiations, are reactions in the culture of underground coal work.

Major mining accidents and natural disasters around the world have led to new forms of negotiations between neoliberalism and social structures. In the aftermath of the Soma disaster, one of the biggest accidents in underground coal mining in the history of the Republic, and the Ermenek disaster six months later, increasing social pressure led to the introduction of new regulations in the labor market shaped by neoliberalism in line with global trends. In the field of underground mining, a number of regulations were introduced that had the effect of reducing the profitability of employers in terms of working conditions and wage rights of workers. This new situation has resulted in a negotiation of the hegemonic superiority of the workers in the working life, which started with the January 24, 1980, decisions and shaped by structural adjustment policies, against the workers in terms of de-unionization, precariousness, working in difficult conditions, and OHS, with these accidents in the practices of labor in the mine galleries. This is the first assumption of the research.

The second assumption is about the impact of technological changes, which neoliberalism uses extensively in terms of flexibility, efficiency, and control, on work culture and the relationality of the negotiation process between neoliberalism and underground mining.

Although technological transformations in underground mining have been delayed in Türkiye, the first mechanized production tools have been used in Türkiye since 1987. The main purpose of this mechanization is to increase production efficiency, reduce the workforce working underground, eliminate human errors and reduce the risks that workers may be exposed to in OHS issues. However, the transfer of developing technology underground has certain limitations due to the fact that the work is carried out against nature. Nevertheless, some of the changes in surveillance and control systems in the last decade have started to be used in underground mining surveillance and controls. In this context, the second assumption is that there are continuities or ruptures in the definition of job titles and work culture in underground mining in the context of the negotiation with neoliberalism.

1.4. Main Research Questions

In accordance with the assumptions of the research, the content of the research tools created to test these assumptions and to understand and analyze the assumptions was based on the following research questions.

1) Is underground mining a unique type of labor?
2) Does underground coal mining differ from other jobs in terms of the use of production technologies and work ethic?
3) If underground coal mining has a unique structure, under the influence of neoliberalism, does underground coal mining differ from other forms of coal mining in terms of the use of production technologies and work ethic?
4) To what extent does the individualizing impact of neoliberalism affect the traditional occupation of underground coal mining? What are the conditions that limit and/or prevent this impact?
5) How is underground coal mining in conflict with neoliberal work culture and ethic? How do these contradictions affect the negotiation of underground coal mining with neoliberalism?

6) What is the position and role of trade unions in relation to underground coal mining and negotiation with neoliberalism? Are there changes in this role and position?

CHAPTER II

LITERATURE REVIEW

For the purpose of understanding and discussing the findings of the field research conducted for this thesis, it is essential to refer to the historical sources of neoliberalism and discuss the dynamics of the development of neoliberal practices, the basic assumptions, limitations and criticisms of neoliberalism, as well as the theories and concepts concerning neoliberalism and the changing culture of work, in order to understand and discuss the findings of the field research.

2.1. A Brief History of Neoliberalism

Despite the fact that neoliberalism became a burning issue on the labor agenda in the last decade of the Cold War, particularly during the administrations of Margaret Thatcher in the UK and Ronald Reagan in the US, discussions of neoliberalism had been on the political economy agenda long before that. While the particular ideas that neoliberalism encompasses can be traced back to much older liberal philosophies, the roots of neoliberalism generally date back to the mid-20th century. As a broad ideological tradition, liberalism stresses individual liberty, free markets and limited government intervention. Neoliberalism emerged as a response to the perceived shortcomings of both the laissez-faire capitalism of the late 19th and early 20th centuries and the post-World War II Keynesian practices that emphasized state intervention in the economy (Harvey, 2005).

The founding of the Mont Pelerin Association in 1947 is widely regarded as the beginning of the neoliberal movement. At first glance, it may be perceived as contrary to the "spirit of the times" that neoliberal thought found a space for development and discussion in the same period, despite the fact that real socialism gained respectability in the post-war period, particularly in Eastern Europe, as well

as in the former colonial countries and other underdeveloped countries that gained their independence. It was at the very time when real socialism was at its most prestigious that Friedrich Hayek invited a group of intellectuals and economists, including Milton Friedman, to discuss the future of classical liberal ideas in a world that seemed to be moving towards socialism. The most prominent factor that makes this meeting remarkable and important in terms of the historical development of neoliberalism is that it paved the way for the development and dissemination of neoliberal ideas, despite the fact that the participants had diverse views and did not fully agree on all issues (Mirowski and Plehwe, 2009).

The University of Chicago, a preeminent school in social sciences, became a key center for the discussion of neoliberal thought in the 1960s and 70s, especially in the economics department, which came to be known as the "Chicago School". Beyond the theories of neoliberalism, the Chicago School is also important as the center of a more crucial development in the history of neoliberalism. Economists such as Milton Friedman and George Stigler advocated deregulation, liberalization and other policies associated with neoliberalism. In this sense, the debates at the Chicago School stood out as a center where neoliberalism was not only debated but also where neoliberal prescriptions were presented to politicians (Friedman, 1962).

It should be highlighted here that these debates are mostly shaped around an Anglo-Saxon political axis. In fact, in the late 1970s and early 1980s, neoliberal ideas began to influence politics at a high level, especially in the United States of America and the United Kingdom. USA President Ronald Reagan and British Prime Minister Margaret Thatcher began to implement policies in line with neoliberal principles, such as deregulation, privatization, and liberalization of the financial sector (Campbell and Pedersen, 2001). It is significant that one of the first areas of implementation of these policies was the mines in the UK.

The economic and political crisis faced by the real socialist countries in the 1980s, and thus the global hemorrhaging of the socialist economic model, was mirrored in the First World countries. In turn, the loss of power of the socialist opposition and the labor movement created an important political space for neoliberal practices. As a consequence, neoliberal politics moved beyond the Anglo-Saxon geography and

became a more global vector. The term "Washington Consensus" originated in this conjuncture and was coined in 1989 to describe a set of policy recommendations for developing countries that included neoliberal principles such as fiscal discipline, deregulation, and trade liberalization. These principles were advocated by institutions such as the International Monetary Fund (IMF), the World Bank and the US Treasury Department (Williamson, 1990).

International financial institutions such as the International Monetary Fund (IMF) and the World Bank, having written the global prescription for neoliberalism with the Washington Consensus and, moreover, gaining the power to enforce this prescription globally with the collapse of real socialist economies in the 1990s, were able to impose Structural Adjustment Policy (SAP), which mandated fiscal austerity and economic liberalization in developing countries (Williamson, 1990). Although criticized for their impact on social inequality, these programs were the distinguishing feature of neoliberal governance at the time (Stiglitz, 2010). These institutions often imposed significant reductions in public spending and liberalization of economies as a condition for receiving loans under the Structural Adjustment Policy (Williamson, 1993).

The administration of President Bill Clinton (1993-2001) continued to implement neoliberal policies, even though it occupied a more ideologically social position in the US bilateral political structure than the Republicans. The most notable implementation was the signing of the North America Free Trade Agreement (NAFTA), which aimed to establish a free trade zone between the US, Canada, and Mexico. In addition, the repeal of the Glass-Steagall Act in 1999 meant a significant deregulation of the financial sector (Hufbauer and Schott, 2005).

As indicated previously, the most crucial reflection of the globalization of the field of application of neoliberalism from the Anglo-Saxon axis took place in Western Europe. The emergence of the European Union (EU) with enthusiastic social acceptance is an important breakthrough in this process. Through the establishment of a single market and the removal of trade barriers, the EU, as a union with general social acceptance, began to implement and even impose global neoliberal values such as market liberalization and harmonization of regulations between countries,

reflecting neoliberal principles, on a continental scale in Europe (Fligstein and Mara-Drita, 1996).

In the late 20th and early 21st centuries, neoliberalism has been the subject of considerable criticism and debate. In this context, neoliberal policies have been blamed for economic inequality, environmental degradation, and the erosion of social services. On the one hand, the destruction caused by neoliberalism on a global scale came to the fore, while on the other hand, the claim that neoliberalism was the key to global economic growth and development was still valid. Even though neoliberalism continued to be influential in the early 2000s, it also started to face criticism and social opposition. While neoliberal practices were in full swing on a global scale, affecting not only the economy and the labor market but also all areas of life, the coming to power of a wave of left-wing governments that rejected neoliberal orthodoxy, especially in Latin America, revealed that a global opposition to neoliberalism was also beginning to organize (Castaneda, 2006). The global financial crisis of 2008 sparked renewed debates about the benefits and drawbacks of neoliberalism (Stiglitz, 2010).

The 2007-2008 financial crisis was a turning point for neoliberalism as it underlined the risks of unregulated financial markets (Krugman, 2009). The crisis led to significant state interventions in economies around the world, contradicting neoliberal principles of minimal government intervention. In order to bail out banks and stimulate economies, these government interventions challenged neoliberal principles (Mirowski, 2013). Although global neoliberalism was severely damaged by the 2008 crisis, follow-up austerity measures reflected the resilience of neoliberal ideology (Blyth, 2013).

As of 2010, notwithstanding its continuing influence, neoliberalism was being subjected to fierce questioning by social and political actors. The consequences of the global financial crisis and the austerity measures that followed resulted in political movements on both the left and the right rejecting the neoliberal consensus. Rising populist movements in Europe and the US began to explore alternative economic models and there was a resurgence of political movements challenging the neoliberal consensus in the wake of the financial crisis (Mirowski, 2013).

2.2. Liberalism and Neoliberalism

In regards to the historical developmental dynamics of neoliberalism, it is necessary to emphasize the differences between liberalism and embedded liberalism. All three ideologies are political-economic ideologies that influence global governance, economic policy, and social structures (Harvey, 2005). While all three ideologies share a common root in liberalism, they differ in their assumptions about the role of the state, the market, and individuals in society.

Born in the late 20th century, neoliberalism is characterized by its focus on free market principles (Friedman, 1962). Neoliberal ideology presumes that economies perform at their best when the role of the state is minimized, and markets are allowed to operate with minimal regulation (Hayek, 1944). Neoliberals claim that free market competition drives efficiency and innovation, leading to economic growth and prosperity. They further advocate privatization, deregulation, and fiscal austerity (Harvey, 2005).

Liberalism, on the contrary, is a broader political philosophy that emphasizes individual freedom, equality, and human rights. Whilst economic freedom is an important component, it is not the sole center of focus. Liberals traditionally advocate a system of checks and balances to prevent the abuse of power and generally endorse some level of state intervention in the economy to correct market failures, provide public goods and alleviate socio-economic inequalities (Mill, 1859).

Embedded liberalism has emerged in the post-World War II period and promotes a compromise between free market capitalism and state intervention (Ruggie, 1982). Proponents of embedded liberalism advocate open international markets tempered by domestic state policies aimed at achieving social welfare goals such as full employment and social security. This perspective reflects a balance between economic efficiency and social equity and an attempt to avoid the social unrest that unrestrained market forces can potentially produce (Polanyi, 1944).

Although he did not use it as a concept, Karl Polanyi is considered to be the main theorist of embedded liberalism. Polanyi in his landmark work "The Great Transformation" (1944) conceptualized embedded liberalism. Political economy,

according to Polanyi, can only function within a social context and is "embedded" in social relations. Polanyi criticized a self-regulating market and argued that if left unchecked it could lead to social destruction. He believed that society would naturally push back against the harmful effects of an unbridled market in what he called a "double movement". The first part of the double movement is the movement towards market liberalization by removing restrictions to allow markets to function freely. The second part is the countermovement, where society is forced to regulate to protect itself from the market's destructive effects. Embedded liberalism, as derived from Polanyi's ideas, refers to an economic system in which markets and the economic sphere are embedded in broader social and political mechanisms, recognizing that the economy should serve society, not the other way around. Under embedded liberalism, free markets are accepted, but they exist within regulations, social protections and state interventions aimed at mitigating economic inequalities and preventing potential social harm from unregulated markets. Essentially, Polanyi's concepts of 'embeddedness' and 'double movement' are the basis of the idea of embedded liberalism. Polanyi's work presents a critique of market fundamentalism, and his perspectives emphasize the significance of the balance between economic efficiency and social protection, which is the central idea of the concept of embedded liberalism (Block and Somers, 2014).

All three versions of liberalism share a common belief in the importance of markets and individual freedoms, while their differences lie in the extent and role of state intervention. Liberalism and neoliberalism differ in their assumptions about market infallibility. Neoliberalism holds that markets work their best when they are not regulated, whereas liberalism recognizes the potential for market failures and endorses state intervention to address them. Embedded liberalism advocates state intervention not only to correct market failures but also to maintain social welfare.

While neoliberalism, liberalism and embedded liberalism share some basic principles, they differ significantly in their beliefs about the role and scope of state intervention in markets. The ongoing evolution and adaptation of these ideologies highlights the dynamic nature of political-economic thought and its responses to changing social, economic, and political contexts.

2.3. Assumptions of Neoliberalism

As already mentioned above, liberalism is a multifaceted paradigm, and this multifacetedness of liberalism is reflected in the implementation of neoliberal policies. Nevertheless, theorists agree on several general assumptions about neoliberalism.

As cited above, neoliberalism, as defined by many economists such as Harvey (2005) and Mirowski & Plehwe (2009), is a broad term describing a type of liberal political philosophy that promotes free market capitalism. It is defined as a theory of political economic practices that posits that human welfare can best be enhanced through the promotion of individual entrepreneurial freedoms within an institutional framework characterized by strong private property rights, free markets, and free trade.

Neoliberalism is not only a financial model. It encompasses a set of political ideas that focus on the economic, social, and political aspects of society to implement a financial model. It has become a prominent and influential force in modern economics and politics, shaping the policies and programs of various governments around the world.

The basic precept of neoliberalism is a belief in the forces of the free market (Harvey, 2005). Neoliberals argue that when market forces are unrestricted and competitive, economies can self-regulate. Schumpeter's (1942) notion of "creative destruction" is affirmed in neoliberalism, where competition is endorsed as a catalyst for innovation and economic efficiency, driving economic progress by constantly leading to the creation and destruction of firms and jobs.

The conception of the "invisible hand" in relation to competition, proposed by the classical economist Adam Smith, is often invoked to justify the neoliberal belief in the self-regulatory capacity of the free market (Friedman, 1962). In this context, a defining feature of neoliberalism is an unwavering belief in market liberalization, deregulation, and open competition (Friedman, 1962). In general, the removal or reduction of restrictions on the economy and the limitation of state intervention in economic affairs are the most important practices of neoliberalism. This perspective is often linked to the concept of "laissez-faire" economics, where the market is seen

as a self-regulating entity that can efficiently manage and allocate resources without external intervention. These interventions by neoliberal practitioners, who advocate the withdrawal of the state from all possible spheres and the privatization of markets and, increasingly, of all areas under the responsibility of the welfare state, are typically characterized by the privatization of public enterprises and the deregulation of the economy (Mirowski and Plehwe, 2009). This approach primarily aims to reduce state intervention in economic affairs, emphasizing competition as a driver of economic efficiency and innovation (Harvey, 2005).

Neoliberalism envisions the state in a limited framework and advocates minimal government intervention in economic affairs, a principle consistent with "Laissez-Faire" economics (Friedman, 1962). From a neoliberal perspective, the role of government is primarily to establish and maintain the rule of law, protect property rights, and prevent market failures such as monopoly power and externalities.

The primary reason behind the emphasis on limiting government functions is the efficiency of the market. Neoliberalism is fundamentally based on a belief in the superiority of market mechanisms in resource allocation. This belief is rooted in the concept of "Pareto efficiency". Pareto efficiency argues that under certain assumptions, free markets result in allocations that cannot be improved without worsening someone else's situation (Friedman, 1962).

In this connection, privatization, or the transfer of public sector resources and services to the private sector, is the most fundamental central aspect of neoliberalism (Harvey, 2005). Privatization is often associated with efficiency and effectiveness, as the private sector is seen as more capable than the public sector in managing resources and delivering services (Bishop and Green, 1995). The wave of privatization in Türkiye in the 1990s and even more dramatically in the 2000s, together with new and effective structural adjustment policies, led to the successive privatization of large SOEs (State-Owned Enterprises). The privatization of mines, iron and steel enterprises, Petro-chemical plants, etc., which required enormous investments and were brought into the economy by the state, were privatized one after another.

Mining can be considered as one of the sectors where this move has been most effective, leading to the emergence of new market players and, at the same time, reduced state oversight and the potential use of resources by private companies with less accountability (Auty, 1993; Bridge, 2004).

SOEs are not only economic entities, but also institutions that provide important employment opportunities and have a positive impact on the development of the socio-cultural structure around them (Aykaç, 2021). The privatization of SOEs with neoliberalism led to serious and harsh conflicts with the aforementioned "embedded liberal" practices and right-conservative consolidation policies. Neoliberal regimes were implemented smoothly in an oppositional climate that was incapable of organizing a mass reaction, taking advantage of this weakness.

The privatization of such large enterprises is only possible if very large capital owners buy the privatized facilities. This is only possible if the atmosphere of privatization is open to foreign capital and national economies allow for the flow of international capital, which is what the central countries, through institutions such as the IMF and the World Bank, are currently imposing on nation states to open their doors to international capital.

The rise of neoliberalism has greatly influenced the phenomenon of globalization. Held and colleagues (1999) argument that neoliberal globalization is characterized by the global integration of finance, trade, and markets. This form of globalization is based on the premise of free trade, open borders and international mobility of capital and labor. It has also implied a shift in government policies to promote a globalized economy and liberal trade regimes (O'Brien and Williams, 2016)

Focusing specifically on the mining sector, neoliberal policies have encouraged foreign investment and led to an influx of multi-national corporations (MNC) into the industry. Whilst encouraging foreign investment could bring in capital and create jobs, it can also exacerbate divisions in the sector, leading to local resentment and increased competition between companies (Bebbington and Bury, 2013).

Neoliberalism often promotes trade policy liberalization, which can lead to increased competition in the global mining sector. This liberalization can lead companies to

seek to reduce costs and streamline operations. This can lead to a dichotomy between companies with lower operating costs and more regulated companies with higher operating costs, leading to potential job losses and wage stagnation (Mikesell, 1997; Radetzki, 2008).

Neoliberal policies in the mining sector can contribute to growing income inequality both within countries and between mining companies. Wealth tends to be concentrated among a small number of large companies and their shareholders, while small companies and workers struggle to compete (Sachs & Warner, 2001; Bebbington, 2012).

The other hallmark of neoliberalism is its emphasis on individual freedom, responsibility, and entrepreneurship (Friedman, 1962). Behind this emphasis underlies neoliberalism's belief in "rational choice". Neoliberal economic models are based on rational choice theory, which assumes that individuals act rationally and in their own self-interest (Becker, 1976). This assumption reinforces the belief in markets as efficient mechanisms for resource allocation and is used as an argument to legitimize this policy in the eyes of society.

Neoliberalism, based on classical liberal thought, places great value on individual freedom and personal responsibility (Hayek, 1944). The prominence attributed to these values underpins the idea of consumer sovereignty. Thus, consumer behavior is one of the most important inputs for the cycle of the market economy. Therefore, the freedom of the consumer and individuals in the market are essential. More fundamentally, every consumer is also (if not until now) an entrepreneur. Encouraging consumers, or individuals in general, to become entrepreneurs is only possible if they are aware of their free will in market relations. In this context, property rights are particularly important. The protection of private property rights is at the center of neoliberal thought, rooted in Lockean philosophy (Nozick, 1974). Secure property rights are seen as necessary to encourage investment and innovation.

Neoliberal regimes assume that by encouraging competition and individual initiative, social and economic problems can be solved more efficiently. This perspective often leads to policies that encourage entrepreneurship and personal responsibility while reducing welfare and social security systems.

2.4. Limits and Critics of Neoliberalism

As discussed above, with the weakening of welfare and social security systems, social justice mechanisms have also lost strength. Theorists such as Stiglitz (2018) and Piketty (2014) argue that neoliberal policies tend to favor the rich and exacerbate income inequality. It is also argued that an overemphasis on free market economics leads to negative social and environmental consequences (Brown, 2015; Klein, 2007). One of the most important criticisms of neoliberalism, which prioritizes private sector interests over public welfare, is that this preference leads directly and indirectly to increased income inequality and reduced access to social services (Harvey, 2005; Stiglitz, 2012).

The lack of efforts to increase the knowledge and skills of mine workers in coal mining areas, limited access to quality education for miners and their children, and inadequate health services are examples of the deformative effects of neoliberalism. In addition, neoliberal policies perpetuate what is described in the literature as the "resource curse", which ties the economy of a country or a region to the extraction of a single natural resource and neglects the development of the country or region in other economic areas, leading to worsening income inequality and increasing social unrest (Auty, 1993).

Moreover, when a large area adopts a financial model based on a single resource, it increases the economic vulnerability of that region. In the coal industry, price fluctuations can undermine the financial stability of mining companies, which in turn can directly affect workers, especially in a neoliberal market where deregulation is the norm (Pindyck, 1999; Laffont & Tirole, 1993). Reliance on market forces can also lead to coal price volatility, creating difficulties for mining companies and workers who may experience job insecurity and wage stagnation (Storm & Naastepad, 2015).

Neoliberal deregulation can lead to lax safety standards and limited oversight, exposing coal miners to increased risks of accidents, injuries, and diseases such as pneumoconiosis (Quinlan, 2014). Lippel (2004) argues that the drive to reduce costs and maximize profits exacerbates workplace hazards.

Neoliberal policies, particularly in the mining sector, have created divisions along various lines, such as ownership of resources, regulatory adherence, competition, income inequality and labor relations. While it can be argued that neoliberalism has stimulated economic growth and investment in the mining sector, it has also arguably led to negative social and environmental consequences.

In addition to the "resource curse", which is particularly prevalent in the coalfields and has even inspired movies and literary works, there is also what Hardin calls the "commons tragedy". The commons tragedy describes neoliberalism's focus on short-term profit maximization, encouraging over-exploitation and resource depletion. Of course, this phenomenon that we encounter in the coalfields is not unique to neoliberalism (Hardin, 1968). Ostrom (1990) argues that self-regulation and cooperation within communities can alleviate this problem, but it is not possible to achieve this within a neoliberal framework in a neoliberal regime where state intervention is weakened.

Another problem in this context is the unsustainability of mining as a non-renewable resource extraction activity, which is not unique to neoliberalism. However, the neoliberal regime can lead to the further consumerization of inherently unsustainable activities, encouraging short-term profit maximization, leading to excessive coal extraction and depletion of coal reserves. This unsustainable approach can have long-term negative consequences for both the environment and local economies (Hilson, 2002).

The contribution of neoliberal policies that prioritize economic growth to ecological crisis, exacerbating climate change, deforestation, resource degradation and increased greenhouse gas emissions is contested (Bond, 2012). To overcome these limits, policymakers are combining the principles of sustainable development (WCED, 1987) and stakeholder engagement (Freeman, 1984) to promote more equitable and resilient coal mining practices. Policies to balance economic growth with social and environmental responsibilities face the limits of a neoliberal regime that prioritizes profit maximization and economic growth, while the global transition towards cleaner, renewable energy sources is undermined (Green et. al., 2019).

2.5. Neoliberalism and the Capital - Labor Conflict

The structural limitations of neoliberalism as a financial model and its negative impact on the environment and social relations in particular, but not independently of these effects, its most important intervention is in labor processes. Criticisms of neoliberal regimes' reorganization of labor-capital relations constitute one of the most important elements of the critique of neoliberalism. The conflict between capital and labor is a concept that has its roots in the works of classical economists such as Adam Smith, David Ricardo, and Karl Marx, and is sometimes one of the most important topics of debate. The labor-capital conflict is usually framed as a struggle between the interests of capitalists who own the means of production and workers who sell their labor power. As the means of production evolve over time, the forms of this conflict can take on different forms and even different structures.

By reinforcing power asymmetries between capital and labor, neoliberal policies often create unstable employment conditions. The increasing prevalence of part-time, temporary or work-based working arrangements undermines job security and often leaves workers in vulnerable positions (Kalleberg, 2009). This precarity can intensify the capital-labor conflict as workers seek and work in precarious employment conditions.

The impact of neoliberalism on the labor regime is of course not limited to national economies. In neoliberalism, where the free movement of capital across national borders is one of its most important tenets, the global movement of capital naturally affects the movement of labor as well. The neoliberal push for globalization reshapes the spatial dynamics of the capital-labor conflict. As companies shift production to regions with lower labor costs, workers in higher-wage countries face layoffs and downward pressure on wages (Rodrik, 2018). It is worth mentioning here the impact of Harvey's (1986) concept of "spatial fixation", which is further elaborated below, as it points to a unique situation in mining. Due to spatial fixation, unlike other industries, mining activity, which is dependent on the spatial fixity of a natural resource, does not have the opportunity to geographically shift that activity to another location.

Neoliberalism is able to reallocate production globally in areas other than the mining industry, and workers are able to adapt to changing labor market landscapes, and to create new forms of struggle and resistance.

Notwithstanding new forms of resistance, the organized struggle of labor creates inherent obstacles to the organization of labor in labor processes reshaped by neoliberalism and defined as part-time, temporary, or work-based. The obstacles to the organization of labor do not only stem from the new model of work organization that prevents workers from being together spatially. The neoliberal emphasis on individualism and competition often leads to the commodification of labor, where workers are encouraged to self-market and continuously improve their skills. This creates a hyper-competitive working environment that intensifies pressure on workers and potentially inflames conflict (Foucault, 2008). The declining influence of trade unions in many neoliberal economies, which undermines the collective workforce, weakens workers' collective negotiation power, potentially exacerbating tensions between capital and labor. For example in Türkiye, Özerkmen (2003) summarizes the restrictions in the post-1980 legislative arrangements as political and professional and states that the 1982 Constitution, the Trade Unions Law No. 2821 and the Collective Labor Contract Strike and Lockout Law No. 2822 imposed restrictions on the right to unionize, the right to collective labor agreement and the right to strike.

Neoliberal deregulation, which erodes regulation and embraces deregulation in principle, potentially undermines workers' rights and security, exacerbating the conflict between labor interests and capitalist efficiency (Harvey, 2005). Neoliberalism's emphasis on deregulation and cost-cutting can lead to a weakening of regulations protecting workers' rights, leading to job losses, lower wages and less job security. This can create tensions and divisions between workers and management, as well as between different groups of workers based on their skill levels and bargaining power (Jenkins, 2004; Perreault, 2013).

In a sense, neoliberalism, which advocates for less regulation, not only erodes regulations to protect workers' rights, but also relaxes environmental, labor and safety standards to reduce costs and maximize profits (Bridge, 2004. Jenkins, 2004).

The employment structure of public institutions and organizations that provide public services has changed in line with market principles in line with the objectives of adapting the state organization to the requirements of global capitalism (Sayan and Çelik , 2012).

2.6. The Sociological Context of the Concept of Work

Discussions on the sociological meaning of work before addressing neoliberalism's culture of work will enable a better understanding of neoliberalism's influence on the nature of work.

2.6.1. Concept of Work

One of the fundamental ways of distinguishing between work and labor is the opposition between "labor" and "work" developed by Arendt (1958) (cited in Markell, 2011). While the concept of labor is expressed as a bodily activity in which the outputs are consumed almost immediately and designed to ensure survival, the concept of work is put forward as an activity that gives objectivity to the world and is undertaken by arm power. The problem with Arendt's approach, however, is that almost no activity in industrialized societies produces products for immediate consumption. Moreover, the fact that in some hunter-gatherer societies the production of material artifacts that give objectivity to the world is quite limited shows that the opposition between labor and work is not clear. While the concept of work is generally attributed to a transformative quality as an activity that changes nature, the concept of occupation is approached as a phenomenon that positions individuals in a kind of market. Individuals who have lost their jobs when they are not in the labor market, often identify themselves with the profession they had before the unemployment process. Thus, the status of the profession can be separated from the practice of the profession. However, neither the status nor the practice of an occupation is seen as an absolute necessity of the concept of work (Hare, 2004).

The historical use of the concepts of work, labor, and work interchangeably or in an exclusionary manner, depending on the situation, can be found not only in languages of Latin origin but also in Turkish. J. W. Budd states that the word "working" has

twenty-one meanings as a noun and forty meanings as a verb in the Oxford English Dictionary (2016).

Raymond Williams (2011), who made a detailed etymological analysis of these three words, stated that the word has a meaning close to the meaning of the word in its early periods (part work) hundreds of years later, especially with his evaluation of "job", and this situation was also emphasized by Sennet (2010).

2.6.2. Control and Surveillance in Work

As work assumed a central role in social life, new mechanisms of power emerged in labor relations and workspaces. It is possible to state that in the factory-based working relationship in the industrial society, the management exercises strict surveillance, control, and supervision over the employees. Management's distrust of employees is at the root of this tendency towards intense control over employees. Taylor (2004), who introduced the concept of scientific management, stated that employees would not prefer to follow instructions if they were not kept under control due to their nature, and therefore foremen who control employees are necessary. Accordingly, in factory-based production facilities, the movements and behaviors of employees are monitored and controlled by foremen.

Although there have been serious changes in labor relations in post-industrial societies, discussions on the phenomena of surveillance and control have continued. With the introduction of new technologies and computers into work life, it is possible to observe that highly skilled and educated employees are also controlled. In modern enterprises, it has become possible for management to monitor almost every behavior with security cameras, various programs installed on the computers used by employees and electronic cards. It has been observed that employees who know that their every move is being monitored give more importance to self-regulation and self-control mechanisms.

As explained in detail below, one of the most important applications of new technologies, especially in the mining sector, has been to raise OHS (Occupational Health and Safety) standards. On the other hand, the integration of these new technologies into mines is not only realized by raising OHS standards. While OHS

standards are being raised, the nature of surveillance in workplaces is also changing. This change has a significant impact in high-risk environments such as underground mines, where surveillance systems are often used to monitor safety and improve productivity.

The concept of "panopticon" introduced by Michel Foucault in his book "Discipline and Punish: The Birth of the Prison" (1975) provides an important framework for understanding the use of these new technologies in surveillance and control mechanisms. Foucault argues that the panopticon, a type of institutional structure designed to allow all inmates in an institution to be observed by a single guard without the inmates realizing whether they are being watched or not, symbolizes the modern "disciplinary" society. Through this system, individuals internalize surveillance and change their behavior accordingly. In the mining context, workers are under constant observation, like prisoners in a panopticon, and this leads to internalization of surveillance and changes in behavior. Constant observation can make workers feel controlled and powerless, leading to feelings of discomfort and increased stress (Sewell & Barker, 2006). Today's widely used security technologies are thought to create a "panopticon-like" effect, creating work environments that are restless, insecure, inefficient, stressful, and where organizational relationships are weakened (Al-Rjoub et al., 2008). Underground mining presents unique challenges to safety and productivity, given the hazardous working conditions and isolated nature of the work (Laurence, 2011).

In general, new technologies used in surveillance and control mechanisms can be listed as follows:

- **CCTV Cameras:** CCTV cameras are used to visually monitor employee activities, prevent burglary and ensure compliance with security regulations.
- **Internet Watching:** Employers may monitor employees' use of the internet, including website visits and email communications.
- **GPS Tracking:** For work that requires traveling, employers can use GPS to track the location of company vehicles.
- **Biometric Systems:** These systems, such as fingerprint or facial recognition scanners, track employee arrival and departure times.

- **Computer Activity Monitoring:** Some systems track keystrokes, application usage and other computer activities.
- **Wearable Technology:** Some companies use wearables to track metrics related to health and productivity.

Employees face the risk of alienation from work under the influence of control and surveillance. Employees are likely to experience feelings of tension, stress and pressure resulting from control and surveillance. While surveillance technology can improve safety and productivity, it can also raise concerns about employee autonomy, privacy, and power dynamics.

2.6.3. Technology and Transformation of Work and Alienation

A radical change in the nature of the concept of work was made possible by the new technologies applied in large-scale production processes in factories in the 20th century, and an employee personality suitable for mass production forms was created in industrial societies. In this structure, it was aimed to create unskilled employees who do not criticize, think, question and only obey orders.

In the sociology of work, the social effects of new technologies are examined in different dimensions. Discussions on labor relations, the social dimension of work, how new forms of production such as mass production and the assembly line alienate workers, how control and surveillance develop, and unqualification have intensified.

One of the important phenomena we encounter in the transformation of working technology is the concept of alienation, which refers to the bond between workers and the technologies they use. The concept of alienation has been addressed in different ways by many social scientists and Marxist thinkers. While some argue that advanced capitalist societies have found solutions to the alienation caused by factory systems, others claim that Marx's ideas on alienation are appropriate for global capitalism and that alienation continues as workers in poor countries are exported to rich countries and forced to produce. It is also noted that in some developed countries new forms of alienation have emerged (Vallas, et. al., 2009).

Although Marx explained the alienation effect by referring to the relationship between the worker and the commodity he or she produces, in the context of

neoliberalism, the alienation effect can occur not only between the worker and the commodity he or she produces, but also between the worker and the means the worker uses to produce the commodity. We can talk about this alienation effect with the integration of new technologies into production processes. In "Alienation and Freedom: The Factory Workers and His Industry," Robert Blauner (1964) discusses different ways in which respect can manifest in the workplace. In his conceptualization of "traditional respect" and "bureaucratic respect", "bureaucratic respect" emerging in hierarchical and bureaucratic systems is based on the position of the worker in the said organizational hierarchy, his commitment to rules and regulations and his ability to exercise authority over others. This alienation effect might be discussed in relation to the integration of new technologies into manufacturing processes.

Advances in new technologies that have made it possible to reduce the numerical size of the workforce, forms of production based on the knowledge and skills of workers, and flexible policies that have taken place with organizational changes have led to both qualitative and quantitative changes in employers' demand for labor. This change in demand has had an impact on the level of employment, the form of employment and labor relations (Erdut, 1998). The pace of technological development is important for the reorganization of work and the renewal of the qualifications needed. New production techniques and the development of information technology have changed employment structurally to a great extent (Uyanık, 2003).

The widespread use of new technologies has led to the emergence of a new type of worker. The development of the information society, which Brzezinski calls the "Technocratic Age", has created a new type of worker called the knowledge worker (Bozkurt, 1997). With technological developments, there has been a shift in the changing employment structure from production to service and from arm power to mind power (Koçak & Uygun, 2011).

In the light of the above discussions, it can be said that neoliberalism has become an important force in shaping labor markets and labor organizations globally in the last four decades. Neoliberalism, which advocates minimizing state intervention in

economic affairs, has led to significant changes in the world of work and organization (Harvey, 2005). In this context, from a sociological perspective, it is necessary to look at neoliberalism and its significant impact on the sociology of work and organization and how it affects work and organizational structures and practices.

Neoliberalism, a political and economic theory that basically advocates the free market and minimal state intervention in the economy, has profoundly shaped modern work and organization. Scholars such as Hayek (1944) and Friedman (1962) laid the philosophical and theoretical foundations of neoliberal thought by emphasizing the importance of individualism, market rationality and deregulation.

The impact of neoliberal policies on the sociology of work and organization is multifaceted. It includes the restructuring of the labor market, the rise of precarious work and the transformation of organizational structures and cultures (Harvey, 2005; Sennett, 1998). The impact of neoliberalism extends to organizational changes leading to the emergence of new forms of governance and institutional structures. It promotes a market-oriented approach that encourages competition and entrepreneurial behavior within organizations (Fleming, 2014). These changes have implications for power relations, employee autonomy and the overall quality of working life (Boltanski & Chiapello, 2005).

Extending to various aspects of organizational life, from management practices to employee experiences, the neoliberal organizational structure has brought innovations not only in the evaluation criteria of organizations but also of employees. Scholars such as Fleming and Spicer (Fleming & Spicer, 2014) argue that organizations' performance measures, accountability and competitive organizational processes, together with market-oriented restructuring processes, have led to the 'corporatization' of the self, where individuals are expected to act as entrepreneurial actors constantly seeking to improve market values.

With its emphasis on free markets, neoliberalism, which has had a profound impact on working life in both developed and developing countries, has led to a shift towards deregulated and flexible labor markets, which in turn has changed the nature of employment and the structure of organizations (Kalleberg, 2009). As mentioned above, this deregulation of the labor market has not only led to job insecurity and

increased work intensity, but also to a growing distinction between 'good' and 'bad' jobs (Peck and Theodore, 2007).

There has been criticism that these new evaluation criteria and the resulting discriminations, both in organizational terms and in the eyes of employees, reflect negatively on workers. The critical sociological perspective argues that neoliberal reforms have not only led to a significant restructuring of work and organizations, but also deepened social inequalities and worsened workers' rights and living conditions (Standing, 2011).

The new values and criteria defined by neoliberalism for the new organization of work and the labor market have led to social and cultural changes on the other side of the labor market, i.e., the supply side of labor. Labor culture has begun to be reshaped.

The new work culture, shaped by neoliberal ideology, is a manifestation of neoliberalism, an economic and political paradigm based on free market capitalism, deregulation, individualism, and reduced government intervention (Harvey, 2005). It is characterized by an emphasis on competition, efficiency, and flexibility in the workplace, often at the expense of other values such as stability, employee welfare and social cohesion (Sennett, 1998).

In the labyrinthine corridors of neoliberal work culture, the relentless engine of productivity, fueled by an unquenchable thirst for efficiency and an unyielding pursuit of competitive advantage, is constantly humming (Boltanski & Chiapello, 2007). An arduous marathon of painstaking efforts requires an unwavering commitment to the relentless optimization of human capital. Here the inhabitants of the modern workplace are caught in a Sisyphean cycle of self-improvement and continuous skill acquisition (Sennett, 1998). The new technological environment in the mining industry will require lifelong learning (Spearing, 2019).

This culture extols the virtues of flexibility and adaptability, glorifying the volatile nature of the contemporary labor market as the apotheosis of economic dynamism (Kalleberg, 2009). The traditional boundaries of work and life are thus eroded as

employees are increasingly asked to sacrifice personal stability and well-being in the service of organizational agility and market responsiveness (Gregg, 2011).

In this brave new world of neoliberal work culture, precariousness of employment becomes the norm, as the insatiable hunger for innovation makes notions of job security and long-term loyalty quaint relics of a bygone era (Kalleberg, 2009). The social fabric is fraying as the atomization of labor creates a pervasive sense of isolation and disconnection, exacerbated by the omnipresent specter of outsourcing and automation (Sennett, 1998).

With the new job description, workers are constantly expected to prove their worth, but the job security of workers who prove their skills and experience is uncertain (Srnicek, 2017).

The worker must prove himself or herself, not his or her work, which is why neoliberal work culture emphasizes self-reliance and individualism, and workers are encouraged to see themselves as entrepreneurs, marketing their own 'brand' and constantly working to increase their 'human capital'. This approach often involves continuous learning and self-improvement at the employee's own expense (Foucault, 2008).

Neoliberal work culture is heavily focused on measurable results, where performance is often assessed using rigid metrics and key performance indicators. Such a focus can increase the pressure on employees to achieve goals, potentially at the expense of other aspects of their work or personal lives (Espeland & Sauder, 2007). The flexibilization inherent in the work culture of neoliberalism creates a similar pressure on employees. Neoliberalism advocates the deregulation and flexibilization of labor laws. This can result in longer working hours, less job security and fewer benefits for workers. It is often associated with the blurring of boundaries between work and private life, and employees are expected to be always available and flexible (Bourdieu, 1998).

Neoliberal work culture is also manifested in the physical design and organization of workspaces. Open-plan offices, co-working spaces and even virtual workspaces can be seen as part of this trend, reflecting, and reinforcing the flexibility,

competitiveness and entrepreneurship that characterize neoliberal work culture (Garrett, et. al., 2017).

Neoliberal work culture often results in increasing economic inequality. One of the factors as a reason behind wage levels is sectoral distinctions in collective labor agreements. Sectoral divisions relied on public-pricate and service-industry divisions may lead not only lead to differences in wage levels, but also social benefits and working conditions (Kayagil, 2018). Wage inequalities can increase as job security decreases and competition intensifies. Similarly, as workers are increasingly expected to invest in their own 'human capital', those with fewer resources may struggle to keep up, exacerbating social and economic inequalities (Piketty, 2014).

As a result, neoliberal work culture is defined by greater marketization, entrepreneurship, emphasis on performance metrics, deregulation and flexibilization, commodification of workspaces, and rising inequality. It represents a substantial transformation in the organization, value, and experience of labor.

2.7. Neoliberalist Work Ethic

Ethic is the actions and behaviors that people perform on a social scale and have consequences that affect others, and the processes of thinking about them. In a social sense, ethic is a set of rules about what people should do and what they should avoid in their relationships (Büyüköztürk, 2019). According to Marshall, the basis of the concept of work ethic can be defined as the valuing of work and/or productive labor as a phenomenon in its own right by the employees themselves or by those who spend this labor (1999).

Neoliberal approaches to the concept of work erode both perceived respect and work ethic. This is because all dynamics of organizational structures, including relationships between employees, are shaped by profit maximization and cash flow (Bolton and Laaser, 2013).

2.7.1. Work Ethic and Miners

The generalized work ethic has specific implications for mine workers. Mines operating within a neoliberal framework can reduce government oversight by

reducing regulations to protect workers' rights and safety. This can lead to more dangerous working conditions and pressure on workers to prioritize production over safety.

Neoliberalization, leading to a change in the way work is organized, including casualization and subcontracting, means that mine workers may be employed on a temporary or contract basis rather than full-time. This increases the pressure on workers to perform and can have negative OHS implications. The alienation arising from this environment can lead to an ethical shift among workers. Bebbington and Burry (2009), drawing on the case of Peru, emphasize that the cost-cutting measures taken because of neoliberal policies have led to downsizing and contractualization, which can affect the work ethic and relations among mine workers, as well as the automation that has been added to the production process.

Historically, mining unions have played a crucial role in the defense of workers' rights and safety (Moody, 1997). One of the most significant effects of neoliberalism on the ethic of the mineworker is the erosion of collective labor agreement power and the promotion of individualism. The prioritization of the individual over collective rights, together with the push for flexibility, can weaken unions and undermine workers' collective bargaining power, shifting the balance of power towards employers (Harvey, 2005).

The decline of labor unions has also played a role in weakening workers' bargaining power. Neoliberal policies have often targeted trade unions, making it harder for them to organize and represent workers. The process of de-unionization has reduced workers' ability to negotiate for better wages and working conditions (Locke, 2013). Nonetheless, there are strategies that workers can use to protect themselves and their rights in the neoliberal context.

There is a growing interest in alternative models of labor organizing, such as worker cooperatives and platform cooperatives. These models prioritize worker ownership and democratic decision-making and can offer an alternative to the hierarchical and exploitative relationships that often characterize traditional employment relations (Kenney and Zysman, 2016). In addition to alternative models of organizing and social agency, workers can also protect themselves by investing in their own

education and skills development as an individual strategy. This can help increase their employability and earning potential in a rapidly changing economic environment. This can include pursuing vocational training programs, university education or participation in forms of on-the-job training such as apprenticeships and similar forms of on-the-job training can also be attempts to increase workers' competitiveness in the labor market.

Overall, while the erosion of workers' rights and bargaining power under neoliberalism is a significant problem, there are still strategies that workers can use to protect themselves and build more equitable and democratic workplaces.

In this context, the neoliberal labor regime has weakened the power of labor unions and encouraged workers to compete with each other for jobs and wages. This competitive environment has led to a decline in solidarity among workers and a focus on individual interests.

Despite neoliberalism's emphasis on individualization and the associated weakening of solidarity networks among workers, research also points to the opposite. Noting that coal miners have a strong sense of community and mutual aid in the harsh conditions of their work, Vaught and Smith examine how what they describe as a "primitive" form of "mechanical solidarity" is sustained in underground coal mining (Vaught and Smith, 1980).

Another impact of neoliberalism on mineworker ethic is the emphasis on productivity and efficiency over safety and workers' rights. Competition in the free market, and in particular the pressure to cut costs and increase profits due to the globalization of competition, has led mining companies to prioritize productivity and efficiency over the welfare of workers. This has led to an increase in accidents and injuries in the mining sector, particularly in developing countries (Hilson, 2012). In non-institutionalized and relatively small-scale mining operations, workers are often expected to work long hours in hazardous conditions without adequate training or protective equipment, which has a negative impact on their physical and mental health as well as their morale and pride in their work.

Furthermore, it should be emphasized that neoliberal regulation in the OHS context emphasizes the individual responsibility of workers rather than the responsibility of the employer for health and safety (Quinlan and Mayhew, 1999).

Especially for underground miners working in an inherently hazardous environment, this means facing pressure to prioritize productivity over safety.

As mentioned above, in the process of neo liberalization, not only labor but also nature as well as resources have been commodified. The emphasis on the free market has led to the exploitation of natural resources for profit, without consideration of the environmental or social impacts of mining. This has led to conflicts between mining companies and local communities, who are often marginalized and excluded from the benefits of mining (Bebbington et. al., 2008).

In response to neoliberalism's push for deregulation and jeopardizing environmental standards, workers may be encouraged, directly or indirectly, to downplay environmental concerns in order to avoid additional costs or meet output targets (Liverman, 2004). This can also place workers in a morally conflicted position where they must balance their livelihoods against potential environmental damage. The use of economic benefits to dampen/overcome possible social reactions for not knowing the dynamics of social acceptance (Cowell, 2011) creates a potential problem. In other words, procedural justice creates more positive results for local communities than justice in the economic (or output) dimension and focusing on economic benefits without understanding the social processes may produce negative results that will be perceived as bribery (Aitken, 2010).

Working in mines with spatial fixation, a concept mentioned above, in other words in their own living spaces, miners are often forced to stay in the middle of these conflicts and make difficult ethical choices. This can have a negative impact on the ethic of mine workers.

The spatial constant is not limited to the ecological environment. Mining activities disturb local communities, leading to conflicts over land rights, cultural heritage, and public health (Perreault, 2006). With neoliberal policies supporting privatization and deregulation, companies may not be legally obliged to address these issues

comprehensively, leading to ethical dilemmas for workers who may be part of these communities or empathize with their plight.

In sum, neoliberal policies in the mining sector may have led to shifts in worker ethic, often putting workers in situations where they must navigate conflicts between personal, social, and environmental well-being and their responsibilities to their employers. The degree to which neoliberalism affects worker ethic is complex and can vary greatly depending on local conditions, regulatory environments, and the specifics of each mining project.

2.7.2. Technological Transformation in Underground Mining in the Neoliberal Work Order and the Negotiation Power of the Mine Worker

New technologies are constantly being developed and transferred in various industries, including mining. The transfer of new technologies has a special meaning in underground mining, where the "struggle against nature" is more challenging. Indeed, underground coal mines, the subject of this thesis, often face unique challenges and safety risks that require specialized technology and equipment, and the research and development of new technologies specific to underground coal mining is vital.

Some examples of new technologies that have been developed and applied in underground coal mining include the following, as will be detailed below in the section on the history and development dynamics of mining:

- Automated longwall mining systems using robotics to extract coal from the face of the mine,
- Wireless communication systems that enable miners to communicate more effectively and efficiently underground,
- Proximity detection systems that alert miners when they are in danger of colliding with equipment or vehicles,
- Advanced ventilation and gas measurement systems improve air quality and reduce the risk of explosions.

In general, while new technology transfers are not limited to underground coal mines, the unique challenges and safety risks associated with underground coal mining have led to a focus on developing specialized technologies for this industry.

In underground mining, a hazardous industry for workers, there is a need to develop and implement OHS measures and technologies that protect workers' lives. In recent years, there has been an increasing focus on developing technologies that can assist miners in their work and reduce the risk of accidents and injuries. However, it is also important to note that mining companies operate in a competitive business environment and need to balance investments in technology and safety with profitability and competitiveness. Governments can play a role in regulating the sector and encouraging the adoption of new technologies and safety measures, but ultimately, in the neoliberal regime, it is mostly up to companies to decide how to allocate their resources.

It is also worth noting that new technologies can be expensive to develop and take time to realize their benefits. In some cases, the cost of implementing new technologies can be prohibitive for smaller companies, which can be a barrier to their implementation underground. Overall, there is a need to balance the need for OHS with the realities of the mining industry, including the costs and competitive pressures faced by companies. Governments, industry associations and other stakeholders should therefore work together to encourage the development and adoption of new technologies that improve safety and protect workers' lives. An example of such efforts is the MISGEP project. MISGEP (Improving Occupational Health and Safety Especially in Mining Sector Project), funded by the EU and the Ministry of Labor and Social Security of the Republic of Türkiye, is currently underway in Türkiye and covers 70 sub-year mining workplaces in 26 provinces. The project aims to raise OHS standards in small and medium-sized, non-institutionalized underground mining operations.

It is not true to say that the cost of workers' lives is cheaper than the cost of developing new technology for OHS measures, especially for institutionalized enterprises. In fact, most mining companies recognize the importance of safety and invest in OHS measures and new technologies to protect their workers. However, it is also true that mining companies need to balance OHS investments with other conditions imposed by the neoliberal business regime, such as profitability, productivity, and competitiveness.

There are several factors that can influence the adoption of new safety technologies in mining, including cost, effectiveness, and practicality. Some OSH technologies can be expensive to implement and take time to realize the benefits. In some cases, there are also regulatory or other natural barriers that limit the adoption of new technologies. Overall, while there is a need to continue to develop and implement new technologies to improve safety in mining, it is important to recognize the complex realities of the industry and the various factors that influence the adoption of new technologies. It is also important to work collaboratively with all stakeholders, including mining companies, workers, regulators, and technology developers, to ensure that the most effective and practical safety solutions are identified and implemented.

Natural conditions in underground coal mines pose barriers to new technology transfer. Underground coal mining is a challenging environment with limited space, poor lighting, high temperatures and high levels of dust, debris, and harmful gases. Workers in the mining sector have a higher risk of suffering an occupational accident or contracting an occupational disease than in other sectors. Especially due to chemicals, noise, dust, radiation, hot-cold working environment, pressure, vibration, ergonomic environment, etc. conditions, the possibility of developing occupational diseases increases (Erol, 2020). In addition, the retirement years of the miners cannot be comfortable due to occupational diseases and related symptoms.

These conditions can make it difficult to design and implement new technologies that can work effectively and safely in the underground environment. For example, communication systems may need to be adapted to operate in the confined space of the mine, while ventilation systems need to be designed to withstand high levels of dust and other particles. In addition, underground coal mines are subject to strict safety regulations that can further complicate the implementation of new technologies. For example, any new equipment or technology must be approved and certified for use in the mine, which can involve extensive testing and assessments.

Notwithstanding these challenges, many advances have been made in underground coal mining technology in recent years, with the development and application of new technologies to improve safety, efficiency and productivity. These advances include

automation and remote-control systems, advanced sensors and monitoring technologies, and improved ventilation and dust control systems. Overall, while the natural conditions in underground coal mines can create barriers to the transfer of new technology, there are also many opportunities for innovation and improvement through collaboration between industry, government, and technology developers.

While new technological tools aim to improve OHS standards in underground mines, and hence workers' well-being, they are also used as a control tool for workers to increase their productivity. However, it is important to recognize that there are ethical and practical considerations to take into account. On the other hand, new technologies such as automation and robotics are helping to increase productivity and efficiency in underground coal mining by reducing the need for human labor and improving accuracy and precision. For example, automated longwall mining systems extract coal from the face of the mine more quickly and safely than traditional manual methods (Rogers et. al., 2019)

Nevertheless, there are also concerns that the use of new technologies to control workers may lead to a loss of autonomy and job security and have negative impacts on workers' mental and physical health. For example, workers may experience stress or anxiety if they feel that their jobs are at risk due to automation or other technological changes. To address these concerns, it is important to ensure that new technologies are implemented in a way that considers workers' needs and perspectives. This sensitivity can include providing training and support to help workers adapt to new technologies, involving workers in the design and implementation of new technologies, and ensuring that workers are treated fairly and with respect throughout the process (Lin et. al., 2011).

Overall, while new technological tools can be used to control workers to improve productivity, it is important to balance the potential benefits with relevant ethical and practical considerations and to ensure that workers are treated fairly and with respect throughout the process.

2.7.3. Some Ethical and Practical Considerations for the Use of New Technologies in Underground Coal Mining

There are several ethical and practical considerations for the use of new technologies in underground coal mining:

Employment and Job Security: The use of new technologies such as automation and robotics can reduce the need for human labor in mining operations, potentially leading to job losses and concerns among workers about employment and job security. These concerns can also have a negative impact on workers' mental health and well-being (Stilgoe et al., 2013).

Occupational Health and Security: New technologies can improve safety and reduce the risk of accidents in underground coal mines. However, they can also introduce new health and safety risks if they are not properly designed and implemented. For example, remote-controlled machines can create new hazards for operators if the machine malfunctions or communication is lost.

Education and Vocational Training: Introducing new technologies requires additional education and training, which can be costly and time-consuming for employees. In addition, not all employees may have the necessary skills to operate and maintain new technologies, leading to greater job insecurity.

Data Privacy and Security: In mining, as in other industries, new technologies often rely on data collection and analysis, raising concerns about data privacy and security. Workers' personal information and data are vulnerable to hacking or other forms of cyber-attacks.

It is important for mining companies and other stakeholders to consider these ethical and practical considerations when developing and implementing new technologies in underground coal mining. This requires engaging with workers and other stakeholders to understand their concerns and perspectives, conducting impact assessments to evaluate the potential impacts of new technologies, and working collaboratively to develop solutions that consider productivity and safety with ethical and practical considerations.

2.7.4. Mining Disasters and Negotiating with Neoliberalism

Beyond the tragedy of mining disasters, it can be argued that they have significant impacts on miners' negotiating power and their ability to protect themselves from the effects of neoliberalism. In the aftermath of a disaster, there may be more attention and scrutiny on miners' working conditions, as well as greater social and political pressure for reforms and improvements in the sector. However, the impact of mining disasters on workers' negotiation power also depends on a few factors, including the political and economic context in which the disaster occurred, the response of government and industry stakeholders, and the extent to which workers are able to succeed.

On the other hand, mining disasters have also led to increased unionization and collective bargaining efforts among workers seeking to defend their rights and improve their working conditions. For example, following the 2006 Sago Mine disaster in West Virginia that killed 12 miners, there was a surge in union membership and activism among coal miners in the region as they sought to negotiate stronger contracts and improved safety measures (Channell, 2011).

Overall, the impact of mining disasters on workers' negotiation power is complex and multifaceted and can depend on a number of factors. While disasters can act as a catalyst for change in some cases, workers still face significant challenges in defending their rights and protecting themselves from the effects of neoliberalism.

CHAPTER III

MINING

3.1. General Overview to the Mining

The mining industry, which has a prominent place in social life, has been one of the most significant factors in reaching the level of technology and prosperity that developed countries have throughout history. Especially, beside agriculture, mining is one of the two main production areas obtained from the consumption of raw materials by societies. Developed countries, which can make efficient use of the natural resources they have, their current economic power consists of their ability to use these resources. The mining sector is crucial because of its direct contribution to the economy, also, those contributions' entering different parts of the economy. Mining, which has the greatest added value and employment creation power among the sectors, can prevent intensive migration to cities and accelerate regional development due to operating in rural areas. Thus, it is important to consider the mining center in the structuring of both economic and social policies. If mining activities are managed with the right plans and policies, they have the potential to contribute significantly to economic factors such as production and employment. According to the ETİ Dictionary of Mining Terms (2020), mine: "Investigation as mineral groups of economic value, formed by various internal and external natural causes in some regions of the earth's crust". By the most general definition, mining is the activity of extracting minerals, rocks, and ores from their bodies by digging, and economically evaluating them as semi-finished products or after they are subjected to some physical and chemical processes. Those who do this job with their own labor are called miners, and the owner of the "production tools" of this job is called a miner.

Minerals and mines which are found in nature are substances that cannot be produced economically in laboratory environments or industrial installations. Hereby, they are located (presently) on the drive, spatially fixed in a certain area. This can be briefly called the "spatial fixation" of mining (Harvey, 1986).

It is inevitable that this limitation is decisive in all other stages of mining activities. In addition to this limitation, another limitation is that mines are non-renewable natural resources. Altogether, they are communicating and interacting with communities located near or far away from all mining operations. The results of this interaction cannot be determined clearly and directly in advance.

The union of many people who establish relationships, interact, live in a certain geographical place, and share a common culture to meet their needs is called "society". Society is a whole that has subgroups, structures, and facts within itself. It is the result of groups and structures that complete each other functionally and have a regular relationship dynamic (Kalaycıoğlu, 2017). In other words, society is a community that consists of the establishment of various structures and institutions to sustain life, and the individuals that communicate within the guidance of these institutions and organizations. One of the many significant qualifications of the definition of "mine and society" is the existence of both concepts that carries a spatial constant (Bulmer, 1975). For this reason, mining activities mostly interact directly with the people of the region where they are located, and the scale, content and dynamics of this interaction take place in that "space". While space is both reproduced by mining activities, it also reproduces the communities that have a relationship with the space in question with the phenomena of social change and transformation. So, this situation confronts a reality that includes many variables and dimensions, such as the existence of human beings. And these people are those who can act both as individuals and as communities and have lived a certain lifespan (with the understanding of global citizens) in that geography or elsewhere for many years before the mining activities. Norman Dennis, with Fernando Henriques and Clifford Slaughter (1956), presenting a comprehensive analysis of the social structure and daily life of the West Yorkshire mining town. It highlights the integral role that coal mining plays in shaping not only the economy but also the social and cultural life of the town. Every aspect of social life, from the local economy, education,

religion and leisure activities to political life, has been deeply affected by the coal industry. They shed light on its distinctive way of life, including the roles of men and women in the mining community, the dynamics of family life, and the deep sense of solidarity among miners. They also explored the struggles and challenges facing society, such as mining hazards and health risks, labor disputes and economic instability (Dennis et. al., 1956).

With the spatial distribution of the mines around the world, it could be deduced that there are very high rates in rural areas. In other words, the fact that the ratio of residential areas to total areas is 3 percent on average in the world and in Türkiye, it directs to the conclusion that the areas where mining is done spatially are mostly located in non-residential areas (Eurostat, 2023).

In addition, in Türkiye; the weight of the rural population in production has gradually decreased with the negative impact of the export-based development model which has started in the 1980s and the structural adjustment policies, which became a tool of the neoliberal economic structure that started to be implemented in the 1990s, on the agriculture and livestock sector. Along with other reasons (capital insufficiency, complex property problems in land ownership, agriculture becoming more technologically intensive, security problems-terrorism or blood feud, etc.) it has resulted in a sparse population in terms of density. Hence, the population ratio in rural areas has decreased gradually in recent years and according to the European Statistical Agency, the ratio of the rural population to the general population has decreased to approximately 20 percent. Thereby, mining is a basic industry branch that is mostly carried out in rural areas, gives a rapid economic momentum to the region, and provides “final products” by producing raw materials or semi-finished products for industrial and post-industrial enterprises. In all these processes, it contains a relatively labor-intensive production and production relations compared to other manufacturing and industrial sectors.

3.2. The Development of the Global Coal Production

The coal produced in the 17th century was used for heating and was not yet widespread. The main dynamic behind the widespread use of coal and its determinant factor in the economy in history is the Industrial Revolution, which

started in the 18th century and accelerated in the 19th century (Thurber, 2019; Çimen, 2014). The share of coal in the energy resources consumed in the world has increased rapidly, and while it was below 20 percent until the middle of the 19th century, it rose to the level of 60 percent at the beginning of the 20th century (Tamzok, 2014).

Coal played a decisive role in the world economy, especially in the 19th and 20th centuries, until the introduction of oil, and the rise of today's developed countries was heavily dependent on coal (Kömürlü, 2018). Trist and Bamfort's (1951) study explore and discuss both the technological analysis of the mechanization transformation in coal mining in England and its effects on the social structures of the workers,

3.3. The Stages of the Mining

For mining to be carried out in a place, some stages must be completed. In short, mining activities consist of four main stages: exploration, construction, operation (sometimes expansion and capacity increase) and closure, and each stage brings different labor processes.

When these stages are considered, the first stage is the process (exploration activities) from a place to the operation stage as a mining site. The second stage, preparation of the mine site (construction process), the third stage, can be defined as the commissioning (in some cases, extending the life of the mine by increasing the capacity in the future) and finally the closing phase. This situation has different employment and labor dynamics at every stage. Frankly, the relationship between mining, employment and labor is directly related to mine is relatively developed regions of Türkiye or the world, as well as developing and underdeveloped regions. The readiness of each region in terms of "human capital" and demographic parameters varies. When the mining stages are added to this, a complex matrix emerges. When the mining phases are considered, the first phase activities include studies that require more qualified engineering skills and analytical reporting, such as geological observations and surveys, trial pits, geophysical tests, trial-sample drilling. However, during these activities, a limited number of temporary (under a fixed-term contract) unskilled or semi-skilled labor employment can be provided

from the working area. Moreover, local services and goods are also supplied in very limited quantities. For this stage, the best expression for the employment/working processes and scale would be the analogy of “warm-up laps”.

The second stage, the construction stage, is a process that brings a serious employment/working and supply chain to life in every sense, yet it concentrates in a period of two to three years at the most, and even causes a population increase in the construction area in a relatively limited period of time. In this process, all types of skilled workers and “white collar” workers are needed. Finding local labor savings in these countries is sometimes easy, even in the developed state, so companies often go to seek employment from regional, national, or international labor markets, especially for their intended use. This situation may cover areas of conflict on many social issues such as subcontracting, non-covered employment, overtime wages, unionization, opposition between people and outside uses, overcoming, exclusion. Especially in the neoliberal economic order, subcontracting processes also constitute the most striking feature of this stage. With the subcontracting system, works can be transferred to subcontractors either in parts or whole, and competition in the labor market is also fueled.

In the third stage, the operation process, the service circulation evolves into a more stable structure compared to the construction stage according to the type of the mine and the continued production life, but a serious fluctuation is observed in the number of employees compared to the second stage. However, for the production center of the properties owned during this period, a large part of its strength is defined by semi-skilled and skilled positions and there is a limited need for an unskilled labor force.

As mentioned above, mine depends on which development areas in the country it is in, may preserve the front barrier to the relatively long-term employment of particularly unskilled power. Compendiously, in fact, if the mining operation in question is spread over an underdeveloped region where there has been no mining activity before, and the economic resource is spread over an underdeveloped region, almost the entire population in the local area could be considered as unqualified for the business branch. Even though the local people are traditionally in agriculture and

animal husbandry or any other line of business, for the mining sector in question, this situation creates a complete underqualification in terms of power. If mining has a physical and/or economic impact on traditional operating resources—one or both—the resulting social outcome will be even more complex. While the local people are being cut off from traditional economic processes, on the other hand, they are confronted with the devaluation of their ability to need the effect of globalization -as a qualification.

Another issue in the mining and laboring process in the countryside is that the workers working in the mines are left with tangible savings other than the wages they have accumulated. By essentially providing protection locally, most mining companies are already making profits in amounts acceptable to their workers' services, (such as arranging housing, transportation, food, and security expenses) also securing the "social acceptance" of the mining company by the residents they are taking. It also reinforces employment and the openness of local goods-service transmission chains. In this way, businesses fortify their areas of legitimacy more strongly, and relatively hegemonic officials work in those they hold against unions, political and bureaucratic figures, and institutions. These examples of mining are roughly worked in the mines belonging to the business lines, they are ground, grinded, ore is prepared, refinery and enrichment, laboratory, waste storage, maintenance-repair, military, and support.

The third stage, where the Operational Period investments end, production, and trade start. Even the extension of some parts, which is defined as the "mine life" estimation, with the endings to be made, may be new. Generally, this process can be considered as an average of at least five to seven years, and if it extends, it may take an average of ten to fifteen years. In some mining branches, for example coal and copper, the life of the mine can even reach a width depending on the size of the ore. The process of obtaining learning processes, which is the last stage, has now been completed in general, only the "rehabilitation" processes are continuing. At this stage, there is usually a sudden drop in the computer processor working. There, if bio-restoration and landscaping arrangements are made and operations are carried out, which is very rare, it focuses on topography compatibility. The number of jobs

needed in this process is quite large compared to unskilled jobs. The closing process spans, on average, a maximum of three years.

As can be seen in the history of Türkiye, foreseeing the social risks that will arise in the event of the rapid termination of the intense economic activity in a certain mining region and providing inputs to policy makers seem to be a dimension that needs to be focused on. The striking fact here is that the short and rapid economic activity makes the given socio-economic situation rapidly dependent on itself, and this dependency relationship quickly turns into areas of deprivation and depression on the local and sometimes regional communities in case the mining activities are stopped or terminated (Ersoy et. al., 2000).

Depending on the mining stages and the scale of the mine, reverse migration can be seen from time to time, especially in rural areas, during mining activities. For example, although the province of Erzincan is a province with net immigration, in the province of İliç, where there is active mining, it has been observed that both those who left the district before returned and those who studied at universities or vocational schools outside the district for a certain period of time started to return to their districts after completing their education life. However, the main issue here is the fact that the continuity of this reverse migration cannot be ensured. This reverse migration will have to be periodic. The main reason for this is that mineral resources are limited, and the life of the mine is largely scientifically and economically certain. In this sense, in another example, it is an important experience that Sivas-Divriği has experienced a demographic fluctuation in terms of production due to the decrease in mining activities compared to previous years. After all these explanations, considering the above-mentioned stage and regional development criteria of the mines, it can be said that some mines provide a relatively "regular" security and a relatively new skill for those who sell their labor without being traditionally included in the social security system in rural areas. In addition, it can be stated that some unskilled workers go through the competency-skill and qualification process, sometimes through on-the-job training and sometimes through formal education channels, in a way determined according to the lifetime of the mines, thus providing upward social mobility. It can also be considered that the probability of finding a job

in other mines or business lines in the labor market of employees who can develop in these mines under ideal conditions may increase.

3.4. The Features of the Coal Mining

There are basically two types of businesses in the economic operation of coal mines. These are open pit mining operations and closed pit underground mining enterprises. “Underground mining” stands out as a preferred method in mining areas where open pit mineral reserves are not economically and technically efficient. However, since the reserves that can be produced by open pits in many mines, especially coal, are decreasing, underground mining is gaining importance day by day. Therefore, it is important that underground production methods are chosen and applied correctly in this context (TKİ, 2022).

Although the definition of thick coal seam around the world varies according to the central and local industry mining, the definition is mainly based on reference production efficiency (Demirbilek, 1987).

Underground coal mining is mostly done in dangerous working conditions and environments. These conditions are highly sensitive to the structural characteristics of the coal reserve and the properties of the surrounding rocks interacting with the seam. Looking at the world mining history, it is seen that there are many accidents, most of which resulted in death, due to the dangers encountered during production activities (Bilgin, 2020).

Classical, semi-mechanized and fully mechanized production methods are used as underground coal production methods. In previous years, black hopper and mezzanine caving methods were also applied, but they are no longer applied for this purpose due to their negativities in terms of occupational health and safety (TKİ, 2022).

3.5. The Technological Alterations in the Coal-Mining Labor– Classical-Half Mechanized- Fully Mechanized Systems

Various methods have been used in underground and surface excavations from past to present. At first, excavation was done by hand, but later, machines started to take

its place. Underground mining first started based on manpower, then drilling blasting and merotopic were used (Bilim, 2007). At the beginning of the 20th century, the demand for coal increased with the industrial revolution, and in this direction, new methods were sought in underground mining to increase production. Basically, underground coal production; It is made with classical, semi-mechanized and fully mechanized production methods. Due to the increase in energy consumption in the world, the need for underground resources has also accelerated the development of this saving technology. More mechanized excavation is now employed because of many advantages over drilling-blasting operations. Excavation operations are carried out with machines, production opportunities are provided for great purposes, and it is possible to reduce the number of workers.

Although labor is defined as a primary industry and a relatively intensive work in the developments in mining production technologies, we are beginning to see the reflections of the technological developments on a global scale recently on mining. For example, the fact that some multi-tasking excavation, blasting and earthmoving enterprises were started to be carried out by remote control controlled heavy work machines or the equipment became mechanized instead of hand tools, leading to the use of massive labor-intensive power. It is assumed that this situation will increase in the coming years with the spread of Türkiye in particular. Although there is mechanization, remote control, automation and robotization operations in order to eliminate the usages trying to understand the reasons, since the transfer and adaptation to the mining industry of the technological developments experienced in the manufacturing sector and information sector worldwide, especially by accelerating since the 1990s, the ultimate goal of these advances in the field of exploration is to achieve efficiency. It is stated that it causes an increase (Kızıl, et al., 1995). Relatively, following the technological developments in the mining industry can also be found in occupational accidents in a general sense. During the evaluation of occupational accidents, the highest number of occupational accidents are encountered in the mining sector after the construction sector.

However, there are workers from all qualifications and skill groups in mining, and relative mechanization and limited automation can be seen in the sector. Remotely controlled equipment has also been used in some metallic underground mines.

There is a trend towards mechanized excavation, which is a more efficient and technological method for producing large quantities of ore. Since mechanized excavation has many advantages over other types of excavation, mining enterprises suitable for mechanical excavation are turning to mechanization. In the mining sector, which requires high investments, it has become inevitable to excavate with machinery in parallel with technological developments at every stage of mining such as preparation and production to achieve the most appropriate level of efficiency and reduce operating costs. When the operating costs are evaluated, the enterprises tend to mechanization if the excavation is suitable for mechanical excavation, since the mechanized excavation, which provides efficiency to the enterprises as it reduces the need for labor by increasing the production amount in one shift, has many advantages over other excavation types.

In the mining sector, which requires high investments, excavation with machinery has become inevitable in parallel with technological developments at every stage of mining such as preparation and production to achieve the most appropriate level of efficiency and reduce operating costs. The following objectives can be listed for the transition to mechanization in mining works.

a. A quick preparation process

b. A fast production process

c. To provide a safe working environment, to reduce the number of workers and labor costs,

d. Making less initial investment (initial investment per ton for a given reserve) to increase labor efficiency,

f. Lower costs,

g. Fewer mistakes (Turhan, 2017).

The classical standing production method can be done progressively or reversibly. Classical standing coal excavation is carried out with pickaxe, dynamite, pick hammer and with shovels in the chain groove inside the foot of the coal. In the classical longwall method, excavation and foot offset works cannot be done at the

same time. Foot shifting and fortification works are completed in one shift, and production is carried out in the other two shifts. It is difficult and not that much economical to reach high production capacities with manpower. Mechanization is the need to achieve continuous and abundant production. The practice of mechanization is also revealed where many small faults shorten the panel lengths. In underground mines, the length of the legs is 30-100 m, the length of the panel is 100-150 m. In-foot fortifications are made either entirely of wood or in the form of hydraulic pole steel wrapping. In recent years, chain and belt carriers have been used in the classical foot method. This method is taken as 2-3 layers in thick veins (TKİ, 2022).

To meet the energy needs of countries, this great demand for coal, fully mechanized excavation systems, which are effective performance after the length of production capacity, are widely structured (Bilim, 2018).

“Fully organized foot production method” is achieved in 2-3 layers in thick veins. Basically, the main preparatory galleries are opened, and coal ceiling-floor roads are created according to the direction and slope of the seam from the points where these galleries cut the coal seam through the stone, and the boards are organized within the production. Excavation is carried out with full arrangement systems, shield type walking support and double drum milling devices (TKİ, 2022).

3.6. Mining in Türkiye

The history of mining in this geography, which is defined as the history of Türkiye today, is almost as old as the first humanity mining. As in the world, many academic studies on mining have been done in Türkiye as well. The bibliographic findings of M. S. Güven (2019) 344 articles or books have been identified only between the years 1931 and 2019 on mining in the Ottoman Period. For this reason, starting the mining history of Türkiye from the Republic will not be very meaningful in terms of history. Because Anatolia is a geography where mining is active almost together with the first human communities. There are many sources about the historical development of mining in Türkiye. In fact, it is seen that the mines were operated by foreign private companies in the Ottoman Empire centuries before the neoliberal economic policies were experienced. The exception to this situation is the process of nationalizing underground resources and transforming them into development tools

in the years following the establishment of the Republic of Türkiye as an independent state. In the development model, which was handled with a protectionist and corporatist approach, coal played a driving role in the development of the iron and steel industry and other sectors, which were a very strategic product for the post-independence period. Today, uranium, boron, etc., are considered strategic minerals. The process of operating all mines except mines by private companies has been accelerating since the early 2000s within the scope of structural adjustment to neoliberal markets. The picture that emerges when the privatization process, in which the public almost escapes from the role of the employer, is considered, describes a period in which there was complete insecurity for the workers, and the union rights were eroded and lost their importance. It is observed that the debates between public worker-private company worker and illegal worker increased significantly in this period.

3.6.1. Coal Mining and Mining Work in Türkiye After 1980

The oil crises of 1973 and 1978 deeply affected all capitalist economies. The inadequacy of the Keynesian economics used at that time to get out of the crisis also necessitated a new system that would change all the economic, social, and political balances of the period (Yayman, 2000). Neoliberalism, which is seen as a way out of the crisis because of the capitalist economies seeing the "social state" practices as the cause of the crisis, is an understanding that foresees the abandonment of social state practices and the application of free market conditions. According to neoliberalism, public goods and services produced by social state policies are inefficient and cumbersome. The main reason for the emergence of the crisis is this structural problem. According to the neoliberal argument, goods and services produced in a free-market economy are more effective and more efficient. When the free-market economy is implemented, all the actors in the economy will be in competition, and this competition will ensure that the goods and services produced in the market are produced at higher quality and cheaper. For this reason, neoliberal policies foresee the reduction of public service provision, the implementation of practices that will encourage the private sector to enter the market, and the implementation of social welfare programs mainly by the private sector (Elbek & Adaş, 2009). Neoliberal policies were put into practice in Türkiye in a short time with the decisions of

January 24 1980. With the January 24 decisions, an economic change was made, and the export-based economic growth model was started to be implemented. With the coup of September 12, 1980, a social and political environment suitable for the implementation of this program was created (MMO, 2011). With this wind of change experienced in the 1980s, the concept of social state has been moved away with reforms such as liberalization, privatization, flexibility, democratization, and localization in all world economies. In these years, Türkiye also showed a development parallel to the changes in the world. This situation caused the workers to lose many of the rights they had gained with the understanding of the social state, and their working conditions became more difficult (Yay, 2014). Neoliberal policies were first implemented in England and public mining enterprises in the world. Parallel to this, the discourse of "privatization of public mining enterprises" came to the fore in Türkiye and this discourse gained momentum in the 1990s. It has been argued that with privatizations, the inefficiency of public enterprises will be eliminated, and public deficits will be reduced, a competitive environment will be created, costs and prices will decrease, productivity and quality will increase, and the capital shortage in the country can be overcome. Ministry of Energy and Natural Resources In 1993, at the Second Mining Council of Türkiye, for the development of the mining sector; “All of the quarries in the Zonguldak Hard Coal Basin should be relatively downsized and transferred to private enterprises via 'leasing', the central workshops and transportation vehicles should be sold to the private sector, all hard coal licenses of the TTK that are not production activities should be transferred to private individuals through sale or royalty, Turkish Coal Enterprises The coal enterprises that feed the thermal power plants belonging to the Authority should be merged with the power plants they feed and privatized.” offered such suggestions. In line with these neoliberal policies, the public gave up its investments in mining institutions, and when the services provided in these institutions began to be outsourced, there was a significant decrease in the number of employed workers (Tamzok, 2007).

Privatization practices bring about de-unionization, worsening of working conditions, weakening of social security practices, decrease in wages and decrease in employment (Yayman H. , 2000). Especially after the 1990s, the number of workers in both TTK and TKİ decreased to a great extent. While the number of workers

employed in TKİ was 27,254 in 1980, this number decreased to 5,075 in 2015. In the TTK, the number of workers, which was 43,383 in 1980, decreased to 8,982 in 2015. The fact that public institutions reduce the number of workers and transfer the sector to the private sector and the implementation of export-based economic growth policies increase unemployment. With increasing unemployment, workers are left to the conscience of capital owners. As unemployment increases, capital owners have the right to say to the working worker, "You will either starve or work under these conditions" (Sarıkaya, 2013). The worker is forced to work with the reserve army of labor without objecting under any circumstances. It is seen that the subcontractors who leased mines from TTK in the early stages of privatizations repaired and used TTK's scrap equipment as necessary equipment for production. As a worker, a worker who has retired from the TTK is preferred both for his job and not to have insurance. It seems that employment was not met at that time. The old warehouse and buildings in the fields abandoned by the TTK were used as dormitories, bathrooms and dining halls for the workers. Subcontractor owners avoid all kinds of investments and try to produce with old scrap materials of the makeshift TTK to minimize costs and maximize profits. It is seen that no occupational health and safety measures are taken for the workers, the employees work for 10-12 hours a day, and the contents such as work clothes, boots, helmets, and masks are not provided with protective devices. It covers the wages of the workers, sometimes even every 3-4 months. Coal extraction and transportation operations in the quarries are also carried out entirely based on manpower, and it is seen that they are pulled directly with the rope they use to transport materials upside down. Apart from the physician, when the children take care of themselves in non-urgent work accidents, those who are unable to work for a long time due to injuries at the workplace, the hospital costs are paid if the patients are good, the worker is not paid for the time he can't work, and the family whose definite and hospital expenses are covered in the fatal occupational accidents It is seen that the business murders that make money as ” have been covered up (Tuncer, 1998).

3.6.2. The Mining Accidents in Türkiye

As a result of this, mining accidents continue to occur because of the above tip transitions, especially in mines where OHS precautions are not taken or kept in very

narrow places. In the table below, the coal mine accidents experienced and recorded in the history of the Republic and the number of dead and injured workers are given[1].

Table 1: Coal mine accidents experienced and recorded in the history of the Republic

Year	Mine Site	The Number of the Worker Deaths and Injuries
2022	Bartın-Amasra	42 deaths.
2021	Giresun-Şebinkarahisar	No loss of lives.
2019	Manisa-Soma	1 death, 1 injury.
	Amasya-Yeniçeltek	No loss of lives.
2016	Siirt-Şirvan	16 deaths.
2015	Sivas-Gemerek	1 death 1 injury.
	Muğla-Fethiye	1 death.
	Zonguldak-Kdz. Ereğli	1 death, 1 injury.
	Amasya-Suluova	1 death, 2 injuries.
	Muğla-Milas	1 death.
	Ankara-Nallıhan	1 death.
2014	Manisa-Soma	301 deaths, 88 injuries.
	Kahramanmaraş-Elbistan	1 death.
	Şırnak-Kemerli	3 deaths.
	Şırnak-Dağkonak	1 death.
	Karaman-Ermenek	18 deaths.
	Bartın-Amasra	2 death, 1 injury.
	Zonguldak-Gelik	1 death.
	Elazığ-Alacakaya	1 death, 1 injury.
	Bingöl-Genç	1 death 1 injury.
2013	Zonguldak-Kozlu	1 death.
	Manisa-Soma	1 death.
2010	Balıkesir-Dursunbey	17 deaths, 30 injuries.
	Zonguldak-Karadon	30 deaths.
	Edirne-Keşan	3 deaths.
2009	Bursa-M. Kemalpaşa	19 deaths.
2004	Kastamonu-Küre	19 deaths.
2003	Karaman-Ermenek	10 deaths.
1995	Yozgat- Sorgun	38 deaths.
1992	Zonguldak-Kozlu	263 deaths.
1990	Amasya	68 deaths.
1983	Zonguldak-Armutçuk	103 deaths.

[1] Data on fatal mining accidents are not kept on a regular basis historically. The information in the table above was compiled by Wikipedia using newspaper clippings, TMMOB and TEPAV reports, and was confirmed by the thesis author by checking secondary sources. Even this situation can be evaluated as an indication that worker deaths are quickly taken for granted and forgotten in this geography.

As can be seen in the table above, 2014 was the year with the highest number of miner deaths. In 2014, a total of 329 miners lost their lives in mining accidents, 301 of these deaths were in the Soma Disaster and 18 in the Ermenek Disaster. The Zonguldak-Kozlu disaster in 1992 is the second biggest mining accident in which the most incidents occurred. It is noteworthy that despite the legislation change in 2014, fatal accidents continued, and 42 workers died in the accident in Bartın-Amasra in 2022. It also happens that children who die in illegal quarries cannot be added to this table.

3.6.2.1. Underground Coal Mining in Tuncbilek

Turkish Coal Enterprises (TKİ) is an economic State Entity with a legal personality, private in its activities and limited by its capital. It is affiliated to the Ministry of Energy and Natural Resources. The purpose of its establishment is to evaluate energy raw materials according to the following principles in order to contribute to the national economy in accordance with the general energy and fuel policy of the state; It is to operate or have the mines operated and to search for this purpose, to establish and operate the necessary industrial facilities, to evaluate the by-products and residues in the operation activities, to conduct and have the necessary studies, exploration and research for the business activities (TKİ, 2022).

Considering its past in the Zonguldak Basin, the Turkish Coal Enterprises Authority, which has an experience of almost 165 years, was established with the announcement of the TKI Institution Organization Law No. 6974 dated May 22, 1957 in the Official Gazette dated May 31, 1957 and numbered 9621. Ereğli Coal Enterprises (EKİ), Western Lignite Enterprises (GLİ) and Coal Sales Dispatch Institutions (KST), which were affiliated to the Eti Bank General Directorate with its establishment in 1957, were affiliated to TKİ (TKİ, 2022). Due to the energy crisis that started in the 70s, lignite production increased due to the increase in the number of thermal power plants, and TKİ's activities gained momentum especially from the end of the 1970s. With the "Law on Mines to be Operated by the State" dated 04.10.1978 and numbered 2172, the coal fields close to the power plant areas and suitable for this purpose, in order to ensure the need of thermal power plants and to be provided on time, to produce according to a certain plan and to avoid energy problems, it has

been accepted to be operated by the institution. For this purpose, the operation of mines by the state has become compulsory by law, and large-scale coal fields have been nationalized; The importance and function of the institution has increased (TKİ, 2022).

In 1983, hard coal production was separated from TKİ and transferred to the Turkish Hard Coal Institution, its operations in the Zonguldak basin were transferred to TTK, and TKİ focused on lignite production. 75% of the known lignite reserves of our country are in the fields belonging to TKİ. 90 percent of the 60 million tons of lignite produced is produced by TKI. 10 percent of this production is provided underground, and 90 percent is provided in open pits.

Between 2012 and 2014, coal enterprises in Kütahya Seyitömer, Muğla Yatağan and Milas, Bursa Orhaneli were privatized and separated from TKİ (JMO, 2022).

Currently, the enterprises of TKİ are organized in the form of business directorates.

Çan Lignites Operations Directorate: Coal formation in Çanakkale-Çan basin; It was identified in 1940 and operated by the private sector until it was nationalized with the law numbered 2172, which entered into force in 1979. Çan Lignite Operations Directorate has been operating since 1979 in order to meet the heating needs of the industry for energy and heating purposes. Most of its reserve contains high sulfur. Its biggest customer is the 2x160 MW Çan Thermal Power Plant, which was commissioned in 2003 (CLİ, 2022).

Western Lignite Operations Directorate: The lignite management, which is a state structure, started for the first time on 16.02.1938 with the establishment of Değirmisaz enterprise under Etibank. Later, Tunçbilek on 18.05.1939 and Soma on 23.09.1939 became operational. These three enterprises were merged on 01.01.1940 and the "Limited Western Lignite Enterprises Enterprise" affiliated to Etibank was established and it was included in the "Turkish Coal Enterprises (TKİ) Institution" in its establishment with the law numbered 6974 as of 15.09.1957. The institution's headquarters, which was originally located in Balıkesir, was transferred to Tavşanlı on 07.07.1941. Seyitömer lignite basin, located within the borders of Kütahya

Province, was put into operation as a production area on 01.06.1960 (Garp Linyit İşletmeleri, 2022).

Değirmisaz Lignite Plant was closed in 1966 when its reserves were exhausted; The Soma Region was transferred to the "Aegean Lignite Enterprise (ELİ)" established in 1978, and the Seyitömer Region was transferred to the "Seyitömer Lignite Enterprise (SLI)" established in 1990. From then on, it became the Operations Directorate. The activity was used as an institution. This target operated as the Regional Directorate until 30.04.2002 and as the Operations Directorate until the end of 31.03.2004 (Garp Linyit İşletmeleri, 2022). GLİ started its activities to respond to the coal needs of the industry, especially sugar factories, and to evaluate underground resources, and continues its activities in the same direction.

After the Armistice of Mudros, the quarries operated by the French between 1918-1922 were operated by Fail Sabri, Nuri Aziz and Yunus Nadi from 1922 to 1939. In 1939, the quarries, which were transferred to Etibank and operated, were transferred to TKİ. In 1957, GLİ operated by. On 27.07.1978 ELI. Since this date, the furnaces ELI. Coal has been produced in the lignite fields of the Turkish Coal Enterprises Institution, Western Lignite Enterprise Regional Directorate (TKİ-GLİ) in Tavşanlı-Tunçbilek since 1940, and production was increased in the 1980s due to the energy requirement (Kalaycıoğlu and Çelik, 2014). Today, this activity continues in an area of 460 km2. Production is carried out by closed and open pit method. With the November 2001 and February 2002 crises, the number of workers is around 3500 as of today, since an intensive ex officio retirement process was started from GLİ. Today, approximately 23 percent of Türkiye's energy needs are met from coal, and the share of domestic resources in lignite-based power plants is approximately 15 percent. In the Beke, Ömerler, Bozbelen, Demirbilek villages and Gürağaç Town located in the Tunçbilek lignite production basin, soil resources have become unusable due to coal production and stripping (Kalaycıoğlu and Çelik, 2014). Fertile lands and forest areas have gradually shrunk due to expropriation. Waste soil spilled from the slopes caused serious damage to the forest. While agriculture and animal husbandry in the villages came to an end, unemployment increased since people who were cut off from agricultural production were not/cannot be employed in mining operations. In addition, mining in the Tavşanlı-Tunçbilek lignite production basin

affected people socially and economically, caused health-related problems, created environmental and safety problems (wastes, water and air pollution, landslides, etc.) (Kalaycıoğlu and Çelik, 2014). In this process, renewable resources; deforestation, erosion, deterioration of soil quality, loss of biodiversity, deterioration of water flows, loss of pasture resources, reduction of wildlife diversity, etc. destroyed by the effects. People living in the mining area, through expropriation, took their settlements, agricultural lands, pastures, forests, etc. lost their livelihoods and their dependence on mines increased. In addition, the change in technology has reduced the need for workers (Kalaycıoğlu and Çelik, 2014). Within the scope of privatization policies, Park Teknik signed a contract with TKİ and its subsidiary GLİ on 14 October 2004 to extract 5 million tons of lignite coal from GLİ Tunçbilek Büyükdüz Underground Field for 10 years. The tonnage specified in the contract was completed on 8 October 2011. A 3-year additional contract was signed on October 28, 2011 for approximately 3 million tons of coal remaining in the same field. With the additional work, the contracted coal production increased to 8 million tons and the production in this area was completed in 2014 (Park Teknik, 2022).

Park Teknik signed a contract with GLİ on July 02, 2012, to extract six million tons of lignite from GLİ İğdekuzu Underground Field for a total of 12 years, including two years of preparation and 10 years of operation. Site delivery was made on 23.07.2012 and it started to prepare coal extraction and ended November 2021.

With the newly signed contract, GLİ continues its production operation in Tunçbilek İğdekuzu quarries of Private Aegean Mining Company, with workers and businesses all coming from Park Teknik.

The first generation fully organized systems were established in GLİ Ömerler field in 1997 and remained in production until 2012. The second generation fully organized system was first adopted in 2013 and distributed this number of systems in 2019. The difference between the new generation fully mechanized systems and the first generation fully mechanized systems is the capacity and size of the marching fortifications (See Appendix-7, Figure 13)

3.6.2.2. Tunçbilek Underground Mining Business Processes

In underground coal mining, the production of coal mines is called “foot”. All the working areas in the furnace are named as "panel". This panel has entrance tunnels, foot part and exit tunnels. The panels are planned and positioned according to the main fault slips, as a result of the geological survey work carried out to determine the layers formed by the faults of the coal. Production and manufacturing plans are created because of technical evaluations. The range of the road system opened in the form of tunnels to reach the panel according to these plans. “Preparers” (formerly known as “chimney man”), who are affiliated with the preparatory engineering, take part in the preparation of underground road and foot birth. After the prepared panel controls are made, it is transferred to the production chief engineer. Conquer the transport of fully mechanized system hydraulic fortifications, approximately one 28 tons, and the loading of 52 or more fortifications per foot length into place, after the production chief engineer is ready to build and use marine monorail systems to install fully mechanized fortifications on his own board (See Appendix-7, Figure 2)

In this process, other team teams, especially mechanical, electrical, support advancers, actively participate. The same teams install adjacent drum, ventilation, water aeration, belt, and chain transporters. Preparation teams continue to work in other parts according to the general mine plans in order to open new panel areas. In this way, while production starts in one place, new production areas are sorted in a coordinated manner.

Preparation teams consist of a resident group of ideally seven people, primarily the supervising mining technician or shift sergeant. These carry excavators, gunpowder, drillers and ladles. This team is responsible for drilling, blasting and mirror loading in the field of execution and installation of iron protective ties in standard operations. Another group that actively supports both the preparation and production teams within the underground work processes and division of labor are the Augers and material manufacturers. Augmenters work on the installation and maintenance of vents that draw air lines to water and hold messages on their servers, as well as in the transport of materials. This group, whose shift structure generally consists of three or four components in each shift, prefers preparatory groups as groups of at least two

people. Over the preparation chimneys, they do the attachment work of the parts of the chain conveyor. In addition to employment with the title of adjustor, those who work with the label of material manufacturers do all these jobs. The whole system consists of the most active teams to meet the urgent needs of the preparation, excavator, mechanic and electrical teams within the work organization of the augers and equipment workers. Another group that works actively underground is group mechanics. At least two mechanics from this group are constantly in the quarry. The reason for this is that it is ensured in terms of worker health and safety that employees are not left alone, and technically recruiting team members is supported during the performance of the job. However, other mechanics are often in the mechanic workshop located at the inlet of the furnace. Those in the mechanical team carry out the maintenance, repair and repair of the materials and equipment used in their service.

Electrical teams are also responsible for the health of patients when they use them similarly to mechanical teams or from all electrical systems that are above ground. In this team, groups of at least two people take part in each shift.

Conveyor actuators, on the other hand, are the operations that controls the removal of the chain conveyor (panzer) and belt systems to the planet, first, the coal coming from the mirror standing in the mines. This group of jobs is called band coach or button maker. Conveyor operators also do the maintenance and cleaning of the senders. Depending on the details of the distances of the bands and the excess of values, their size can be up to two or three people. Excavation teams, excavation masters and excavation reserve workers usually consist of six people. Basically, they scan the ceiling at the so-called engine head and tail according to the position of the fortifications and in front of the mirror where the coal is cut. The excavators are also responsible for providing the physical conditions at the production fortification point for the walls to advance by replacing the oval iron posts at the points where the walls intersect with buttresses and tunnels with rectangular trapezoidal iron posts. Protective systems against partial dents and ceiling leaks that may occur during these operations; They install or reinforce structures called "suspended ceilings" by sticking wedges between iron poles and posts or by using chemical foaming agents that have become widespread recently.

The support driver or slat driver is the operator who makes the necessary adjustments to bring the hydraulic supports, the chain conveyors (panzers) in front of and behind the support to the appropriate position on the pit pillar. coal cutting. This operator is a skilled worker, capable of reasoning in physics and mathematics, and trained to perform these operations without the need for physical strength.

The cutter drum operator is the skilled worker who manages the front covers of the hydraulic fortifications and the cutting drum with iron teeth at the front end of the front chain panzer. Generally, there are two cutter drum operators per shift. The last group involved in underground active work in underground coal mining is the group called cleaners. This group cleans the coal and rust that flow from the mirrors during the cutting or during the execution of the fortifications from the material spilled under or in front of these equipment's so that the movement of the equipment and machinery in question can continue in a healthy way. If there is no flow in any of the mirrors, this group cleans the rust on the engine head side, the conveyor lengths or the tail sides with a pick and shovel. These workers, who are active in underground coal mining, also constitute the most unskilled workers in the whole team.

Production is carried out with a three-shift system in Tunçbilek Ömerler underground mine. Ideally, a mining technician, two mechanics, two electricians, two cutter drum operators, a fortification driver, a belt operator, six excavators, two excavators and two cleaners can work for a total of 18 employees in each shift that goes down to the quarry. Apart from these, an aboveground monorail operator, a control room operator and a shift engineer usually work the night shift. The monorail operator uses vehicles that can move on a single rail laid from the ceiling, which was built into the tunnel leading into the quarry. In addition, this operator also controls the vehicles moving on the rails laid on the tunnel floor, and from time to time comes and goes inside the quarry.

The control room operator, on the other hand, constantly monitors the values sent by underground gas sensors (methane, nitrogen, carbon monoxide, etc.) on screens through various software. In addition, it controls the operation of the conveyor belts. In addition, after the Soma and Ermenek disasters, it also monitors the RFID (radio frequency identification) chips (Appendix-7, Figure 11) that communicate with radio

frequencies, which are required to be installed in all underground coal mines. These chips are present in all personnel and transmit the information of where a worker is in the quarry in the entire underground mine site, together with the worker's name, surname, and registration number, to the control room. The control room operator can also access the fixed telephones placed for in-quarry communication when necessary.

In the best manner, in underground mining, mine and quarry production planning is to be able to make a planning approaching the earth, starting from the lowest layers. In this way, in-mine water management can be managed more easily against the danger of flooding of the mine. However, since coal was produced from areas close to the surface in the GLİ Ömer underground quarry in previous years, the opening of panels at lower elevations gradually comes to the fore.

CHAPTER IV

METHODOLOGY

The occurrence of a fieldwork has been conducted by using qualitative research methods for the thesis titled as " Negotiation with Neoliberalism: The Mining Industry in Tunçbilek Underground Mine, Türkiye". The research findings are based on interviews with workers, worker representatives and managers at the mine site mentioned in the field study.

4.1. The Data Collection Tools and Their Process

The occurrence of a fieldwork has been conducted by using qualitative research methods for the thesis titled as " Negotiation with Neoliberalism: The Mining Industry in Tunçbilek Underground Mine, Türkiye". The research findings are based on interviews with workers, worker representatives and managers at the mine site mentioned in the field study.

Because of its flexible structure, qualitative research ensures the harmony of research method, approach and design on changing events and phenomena; by allowing them to be explored holistically with their original dimensions: Their association with critical and hermeneutic approaches; it has been found suitable for the purpose of this research due to reasons such as its orientation towards explaining, exploring, and understanding.

Besides, it is possible to obtain, classify and analyze quality, usable, in-depth data in the following contexts in accordance with the research content with qualitative research (Yıldırım and Şimşek, 2008: 40).

- Socio-cultural, economic, psychological, demographic, and physical characteristics of the research area,

- The events/situations that are occurred, their turning points and how all these affected the research group, without causing a disconnection between the before and the present of the period investigated in a historicity,
- Which events/situations occurred, their turning points and how all these affected the research group, without causing a disconnection between the before and the present of the period investigated in a historicity,
- What individuals think about the process in their world of meaning with interaction at the social and individual level

4.1.1. In-depth Interviews

Observation, interview, and evaluation of textual materials are the leading data collection techniques in qualitative research. In the analysis part of the study, there are evaluations obtained by observation without being used as a directly targeted method in the field, and in-depth interview technique was used to reach the main data source of the research. In addition, written material data has been evaluated as an auxiliary/constructive resource without being subjected to a direct analysis.

In-depth interview is a basic social science data acquisition technique, in which two or more people exchange information through a series of questions and answers, used to reach information that cannot be observed at first, such as the participant's feelings, thoughts, perception, attitude, experiences, comments and reactions about the researched subject (Yıldırım and Şimşek, 2008: 40).

The grand feature that distinguishes in-depth interviewing from other interview methods is that it focuses on the "how" question and prioritizes understanding, rather than questions such as "how much" or "how often". In-depth interviews are aimed to understand the dynamics of the subject by keening on with a mutually developed dialogue, not to test knowledge (Stroh, 2000). In-depth interviews are an important technique especially in understanding different perspectives and examining people's attitudes and behaviors (Kümbetoğlu, 2005). Hereby, the advantage of in-depth interviews is obvious to examine the effect of the said change on attitudes and behaviors rather than getting information from the interviewees in the interviews conducted within the scope of this research examining the effect of technological change (Yıldırım and Şimşek, 2008).

Another feature of in-depth interviews is to create an environment in which the interviewee can freely express his/her thoughts without any feeling of restriction, in a conversational atmosphere, although it is conducted within the scope of a predetermined directive. This in-depth interview technique, which could also be called as "conversation with purpose", differs from other interview techniques in that it takes place in an environment where the interviewer feels comfortable, and that the researcher listens to the interviewer in a neutral and unbiased manner without guiding the interviewer (Newing, 2011).

4.1.2. Semi-Structured Interview

Bernard structurally demonstrates four different styles of interviewing instruction (Bernard, 1995).

i) Informal Interviewing: There is not any question structure.
ii) Unstructured Interviewing: The interviewer has minimal control over, yet there is a certain planned flow in the interview.
iii) Semi structured Interviewing: An instruction is followed by.
iv) Structured Interviewing: People are asked to respond to all questions.

Questionnaire/type of interview techniques could be divided into structured, semi-structured, unstructured and focus group discussion techniques for reasons such as freedom provided to researcher-participant, number of participants, etc. (Sönmez and G. Alacapınar, 2011). Each technique has advantages and disadvantages over each other. In the research design, it was thought that the semi-structured interview technique would be more proper for the reasons listed below. Often these are related to the freedom of the researcher-participant to adapt and the experience of the researcher, shaped by the course of the study.

For semi-structured interviews, there is a fixed question form that the researcher will direct to the participant. In addition, the technique offers the researcher the opportunity to switch between questions, support with side questions or understand with new questions, depending on the developments.

Consistent with interviewing many different experts in research, the technique supplies the convenience to obtain this specialized knowledge.

The researcher has the power to close the gaps that may arise between the information obtained at the desk on technologies, mining and field, and practical/on-site knowledge.

Data maximization and breadth are achieved with the freedom afforded while producing comparable data from different participants.

Empirical studies show that open questions asked later in the interview tend to produce richer data (Ogden & Cornwell, 2010).

4.1.3. Selection of Participants

Figuring out the people who will contribute to the research is an important issue in two respects. The first is related to whether the interviews quantitatively meet the representative power to reach generalizations. Secondly, it is the content representation power of the participants. In other words, how much they surround the knowledge that is the subject of the research is related to how much they present it. Especially in quantitative studies, sample type and sample size calculations (power analysis and effect size calculations) supply clearer criteria for quantitative representation. In addition, non-probabilistic sampling (purposive sampling) methods are used in qualitative studies, sample size is not tied to strict rules, instead, the level of satisfaction of the answers we received to your research questions, namely the second item, is checked. On the other hand, there are limitations that decide the structure of the sample. Considering the techniques of supplying qualitative data, the growth of the sample increases the burden in terms of time and cost; Again, this will lead to difficulties in the analysis of the data. For this reason, the researcher should make the most efficient and purposeful use of resources by making the feasibility of the study.

4.1.4. Qualitative Sampling Strategy

Although there are researchers who try to make numerical determinations about the size of the sample in qualitative studies, the most common opinion is that the sampling will be interrupted when "regular repetitions about the researched subject occur independently of the participant composition". Concerning the qualitative sample size, Sandelowski (1995) suggests that it be large enough to allow for the

emergence of a 'new and richly textured understanding' of the phenomenon under study, but small enough not to hinder a 'deep, case-based analysis' of the qualitative data. Lincoln and Guba (1985) argue that the sample size should be handled with the criterion of the excess of information produced, and the sampling process can be terminated when more units are sampled, and new information is not revealed.

A total of 540 employees works in three shifts at Tunçbilek Ömerler Underground Mine affiliated to Turkish Coal Enterprises Garp Lignites Enterprise (GLİ), one of the mining companies working in the Tunçbilek field at the time of the fieldwork. While 507 of these employees work continuously underground, the remaining 33 employees mostly work in the above-ground facilities of the quarry. Ege Mining Enterprise (ÖEM) has a total of 369 employees. Of these, 298 are underground and 71 are aboveground workers. It was decided in the research design that it was necessary to conduct 30 or more interviews judicially. However, it was told in relation to past field experiences that this number should be limited to 30 with the recommendation of the Thesis Monitoring Committee.

4.1.5. Selection of the Interviewees

After a long time spent in one place, who is related to the subject, how much they know, representations, and other points may have such information into that. However, researchers often cannot do this due to limited time and financial resources. This situation needs the researcher entering the field from the outside to obtain the best quality data on research without sufficient time, observation, information and all the details. Thus, the researcher's knowledge, experience, recognizing the field, understanding the actor loads in the network of relations and sometimes intuitions can be effective in shaping the interviewer pattern.

Flick (1998) states that “it is their interest in the research subject rather than their power of representation that determines the choice of people to be studied”. In the research, a holistic picture should be taken to stand for all the possible diversity, richness, difference and contradiction in the universe as much as possible without worrying about generalization. In the research, purposive sampling was preferred based on the familiarity that has developed due to the experience gained in the mining industry for many years and the purpose of the research. One of the

improbable sampling methods, "Purpose-Oriented or Judgmental Sampling" has the feature to reveal the experience and ability of the researcher. On the other hand, mistakes such as limited experience, prejudices, and choosing expectations reduce the quality of the research (Yavan, 2012).

In the field, interviews were conducted in four categories:

i) Workers,

ii) Managers/employers,

iii) Union officials and

iv) They are academics.

It was decided that the workers interviewed in the worker interviews would be chosen from underground. The rationale here is that workers who personally experience technological changes are underground workers. In addition, a plan was made to meet with at least one worker included in the following working groups. Among the interviewees, two people are supervisors (mining technician). Working groups were also considered in the composition of the interviewees. We can mention 10 working groups in underground mining enterprises:

1- Preparers (*Hazırlıkçılar:* Formerly, chimney men – they open galleries)
2- Digger-fortifiers (*Kazıcı-Tahkimatçılar:* Divided into two: Excavation heads and excavation spares)
3- Mechanics teams (*Mekanik ekipleri:* mechanics: responsible for the maintenance of the system)
4- Electricians (*Elektrikçiler:* Responsible for the electrical components of the equipment used)
5- Modern fortifications masters (*Modern tahkimatçılar-şiltçiler*: With the introduction of full mechanized system; “shielders”)
6- Cutter operators (*Kesici operatörleri*: Sort of a new job in fully mechanized system)
7- Blasters (*Barutçular*)
8- Augers and equipment makers (*Ajüstörler ve malzemeciler*)
9- Banders (*Bantçılar*: defined as “buttoners” among workers)
10- Cleaners (*Temizlikçiler:* unqualified workers).

Another advantage in the interviewer composition is that there is mobility between the nine categories and therefore the interviewed workers have worked experience in other groups as well.

The biggest contribution of the manager/employer interviews to the dataset is the transformation not only of underground working and technical conditions, but also on administrative, legal, budget, planning, efficiency, etc. This is since they could evaluate over many processes. Three from GLİ, namely Operations Manager, Operations Assistant Manager and Underground Chief Engineer; and two interviews were held from ÖEM, namely the Operations Manager and the Chief Engineer.

It has been taken into consideration that to include union officials among the complementary meetings; in this context, a meeting was held with the Deputy Head of Mine-Work Tunçbilek Branch, which is affiliated to Turkish Confederation of Trade Unions in the presence of a large group of mine workers. It was learned that two of the mine workers were workplace representatives and two of them were unionized workers. Largely, an added meeting was held with a mine worker participant who is the representative of the workplace at the workplace representative office located in the mine site. The union interviews enriched the collected data, especially in understanding the differences in the dynamics of unionization in the public and private sectors.

Finally, an interview was held with an academician who works in the Mining Engineering Department of Kütahya Dumlupınar University, who works in the field, has knowledge about the mining enterprises studied and conducts projects there, focusing on the technological developments in the mining sector.

4.2. Fieldwork

4.2.1. Selection of the Field

As of the first years of the Republic in Türkiye, coal mine operation and exploration activities gained intensity, and in 1927, Amasya-Çeltek, Yozgat-Yerköy, Kütahya-Tunçbilek-Değirimsaz and Aydın-Nazilli-Girenez fields began to be actively used. With the establishment of the General Directorate of Mineral Research and Exploration (MTA) in 1935 as a step of institutionalization in this field, systematic

exploration activities gained momentum. MTA has shown 8.3 billion tons of lignite reserves due to the discovery of 117 lignite fields between 1939-1984. After the stagnant years 1984-2004, a resource increase of 10.82 billion tons was achieved with the increase in reserves in 24 new fields and 3 old fields discovered until the end of 2019. Among the discoveries made in this period, Karapınar-Ayrancı, Eskişehir-Alpu, Afyon-Dinar, Tekirdağ-Malkara, İstanbul-Silivri are coal fields with large reserves (MTA, Coal Exploration Research).

Türkiye has reserves of 20.84 billion tons, of which 2.7 percent is generally low-quality lignite and 7.3 percent is hard coal extracted from the Zonguldak basin. Reserve numerical data do not reflect the full resource potential, since only the survey and feasibility of 30 percent of the fields are conducted. As such, Türkiye holds approximately 2.1% of the world's coal resources (MTA, 2019; TKİ, 2019). As can be seen in Figure 1, coal basins spread to almost all regions.

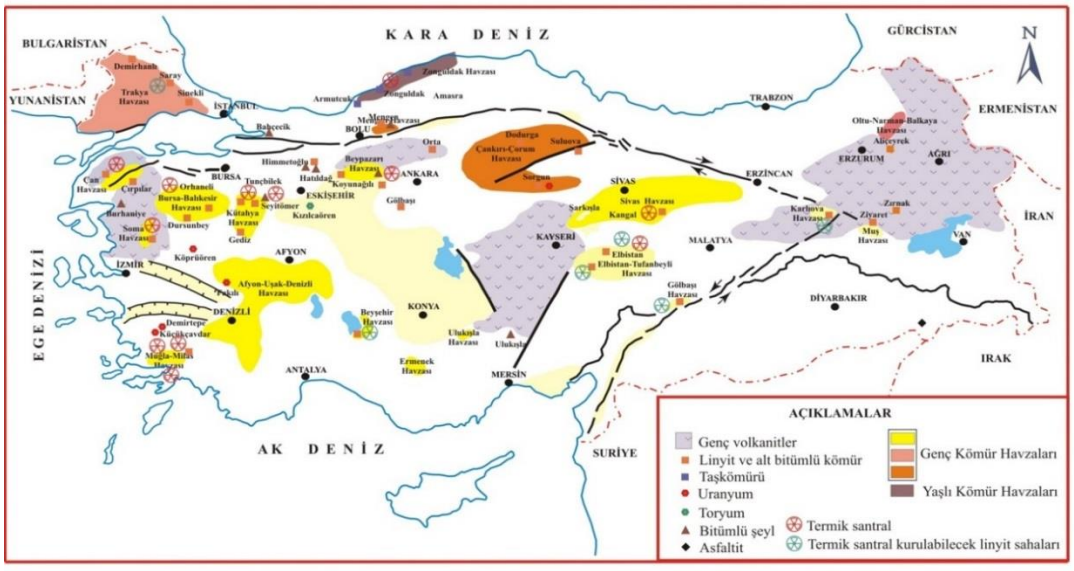

Figure 1: Coal basins in Türkiye “Auxiliary Resources”

After deciding on the study’s subject, as a sociologist who has worked in the Turkish mining industry for many years, a preliminary screening, and then a final study area determination process was started, as detailed in the title of "Site Selection", taking into account the characteristics of the sites listed below (MTA, Coal Exploration Research)

4.2.2. Selection of the Mine Field

Below is a list of important coal basins and fields in Türkiye:

Table 2: Türkiye's important coal basins and fields.

Afşin- Elbistan	**Kütahya-Tunçbilek**
Afşin — Elbistan (MTA)	Kütahya-Seyitömer
Manisa-Soma	Sivas — Kangal
Adana-Tufanbeyli	Kütahya-Gediz
Adıyaman-Gölbaşı	Tekirdağ-Çerkezköy
Bingöl — Karlıova	Tekirdağ-Malkara
Ankara-Beypazarı/Çayırhan	Tekirdağ — Saray
Afyon-Dinar-Dombayova	Amasya-Yeniçeltek
Bolu — Mengen	Yozgat — Sorgun
Muğla — Milas	Bolu — Göynük
Çankırı-Orta	Çorum-Dodurga
Çanakkale — Çan	Konya-Karapınar
İstanbul (Silivri)	Konya (Beyşehir-Seydişehir)
Eskişehir (Alpu)	Bolu (salıp. -Merkez)
Eskişehir (Koyunağılı)	Bursa (Keleş — Orhaneli)
Muş-Merkez	Balıkesir
Edirne	Ankara (Gölbaşı)
Zonguldak (Taş Kömürü)	Diğer Küçük Sahalar

After the study, the four fields in the above list; It has been determined that Manisa-Soma, Ankara-Beypazarı/Çayırhan, Zonguldak (Coal Coal) and Kütahya-Tunçbilek basins and fields are suitable for the purpose of thesis study. In this determination process, the year of establishment of the fields, the number of reserves, geological features or the amount of coal produced annually from the fields were not taken into account. However, situations such as technological stages, compliance with private-public sector comparison, underground mining, frequency of being the subject of research or the presence of a traumatic past that may affect the research results were used in the field determination in the most general sense. While the Çayırhan field, which was included in the scope of the evaluation, was operated under the responsibility of Başyurt Collective Company, it joined the Turkish Coal Enterprises in 1966, and the Directorate of Central Anatolian Enterprises Establishment was established in 1977. In 1985, the directorate was transformed into a regional directorate, and on that date, the enterprise switched to a fully mechanized system. In 1987, the thermal power plant, in which the lignite extracted from the region with a

total installed power of 300 MW, will be used, was put into operation. In the 2000s, the operation of the mine site and thermal power plant was transferred to the private sector within the scope of *Build Operate Transfer Law No. 3096*. Today, production is carried out with fully mechanized techniques, which are highly efficient, with reversible displacement (Sığırcı, Taşkın, & Yüksel, 2017). However, the Çayırhan field was not found suitable for a private-public comparative study, since there is only a mine used by the private sector in the field (PARK TERMİK INC., Çayırhan Lignite Plant).

The Soma-Eynez mine site is an important coal field, both in terms of quality and number of resources, which has just entered the fully mechanized system. There are many companies that conduct open and underground coal mining activities in the license area of the Turkish Coal Enterprise (TKİ). Average vein thickness varies between 20 meters and 60 meters. The thickness increases as expected from the edge of the vein to the middle. The upper part of the vein is made of durable marl and the lower part is a clayey structure with partial water interaction, and therefore, the first slice is produced in a technique that opens from the ceiling and expands towards the bottom (Ünver et al., 2017). Studies on the adaptation of fully mechanized structures to the production structure in question are ongoing. Although the site offers a rich base for mining, Soma Coal Enterprises Inc. Due to the increase in field sensitivity as a result of the most fatal accident in the history of the Republic, the contamination of the field in terms of social relations, and the increase in research fatigue and response burden due to the intense interest/work of researchers after the accident, the study areas removed from.

Zonguldak field, like Ömerli/Tunçbilek, is still an area where the weight of the public is felt. However, it does not meet the requirement of the classical, semi-mechanized and fully mechanized technological phases to be included in the production processes, which is the expectation of the study. Today, classical, and semi-mechanized systems are used in Zonguldak fields. The most important reason for this is that fully mechanized systems do not fit the geomorphological structure of the beds in the Zonguldak basin, which presents a vertical section. Güney (1967) on this subject *"contrast with the features such as the bent-fractured geological formation, land depressions, the different thicknesses of the coal seams in the 0- and*

90-degree beds, and the others in the production gaps, where controlled caving and pneumatic rambles are made with classical long pier and hydraulic ramble with rotation." states that it is suitable for its methods. The focus was shifted to the Tavşanlı / Tunçbilek – Ömerli area, as the 3 areas mentioned, depending on the content of the study, did not meet the needs. The field in question is a basin where coal has been produced for 80 years and open and closed pit methods are used. The vein floor and ceiling stone are marl and can show high compressive strength. In the galleries with lignite veins varying between 5 and 11 meters in average, a back-cavity-turned-turned-leg system (steel wrap + hydraulic pole fortification) and a fully mechanized collapsed-long-pier system are applied (Uygun et al., 2007; Ermişoğlu et al.).

As a result of the preliminary examination, it was decided to choose Tunçbilek as the study area due to the following criteria:

The existence/living of Classical Mining, Semi-mechanized System and Structured System infrastructures in Tunçbilek, which is to be considered as one of the most basic parameters of this research on "The Effect of Technological Change in the Mining Business on the Mining Business", and at the same time, the basin is a business that experiences these three different periodic technologies. power and, accordingly, work memory, allowing comparative study of both a SEE enterprise and a private enterprise in the same basin, the wilderness of the site in terms of social studies when compared to other mine sites, except for the study by Kalaycıoğlu and Çelik (2014) focusing on "The Effects of Privatization on Mining, Labor and Tunçbilek" in the region.

4.2.3. Selection of the Mining Companies

In Ömerler/Tunçbilek, Garp Lignite Enterprises (GLİ), which is a State Economic Enterprise, and Ege Mining (ÖEM), which is a royalty enterprise, were found as research areas.

The reason for choosing both public and private enterprises is the opportunity to make comparisons between the two enterprises in the following topics:

1-Unionization

2-Processes controlled by the job

3-Efficiency

4-Differentiation in values (solidarity, respect, etc.)

5) The meaning of work

4.3. Pilot Study

After figuring out the field location and the enterprises where the research will be conducted, it was decided to conduct a pilot study in the context of "preliminary exploration". The pilot study was conducted on 19-21 July 2020 both to facilitate the entrance to the field and to understand how much the data obtained from the desk study overlaps with the field reality. In Tavşanlı, interviews were held with two workers and business representatives. Before the pilot study, the focus of the thesis was decided as "The effect of technological change on the transfer of knowledge between generations". However, the focus of the research was determined as "technological change" rather than "generation", as the 2014 Soma and the Ermenek disaster experienced right after it was a milestone in mining and therefore the "generation" parameter lost its effect relatively. Although the conceptualization of “generation” was preserved as one of the problematics of the thesis, after the pilot study, it was decided that the main axis would be “technological change”. Another important aspect of the pilot study was that it was the first step in field entry. During the pilot study, the first contact with the operating authorities was also proved.

4.4. Conduction of the Fieldwork

4.4.1. The Preparation of the Interview Guideline

After the pilot study, a semi-structured interview guideline was created to be used in field interviews. The feature that makes the directive different from the “questionnaire” is that it was prepared following the semi-structured interview style, the topics included in the interview were included in a thematic order, and the questions were mostly included in the directive as “reminder questions”.

Three basic references were used in the formation of the directive questions: The first one is the problematics that were figured out by the literature review and focused especially on the impact of technological developments on mining. Apart from this, the experience of the thesis author in the sector and the first-hand observations of the effect of technological change on mining were also influential in the formation of the directive questions. Observations obtained in the pilot study and exploratory interviews with business managers and workers were also evaluated, and the directive questions created with the literature review and the observations of the thesis author were completed after the input and approval of the Thesis Monitoring Committee. A total of eight question set headings were used in the directive:

1) Demographic information about the interviewer

2) Interviewer's work history

3) Definition, content, responsibilities of the interviewer for what he did

4) The process of gaining professional skills

5) Changes in Occupational Health and Safety (OHS)

6) Unionization

7) Work ethic and work value

8) Control and surveillance

The first three question set titles aim to get to know the interviewer. The title of the fourth question set and therefore it aims to get to know the interviewer and on the other hand, to understand the relationship with "technological change", which is the main parameter of the research. Other headings are question set headings that include questions that deepen the interview.

While preparing the interview form, the following principles were considered (Yıldırım and Şimşek, 2008):

- Writing easily understandable questions,
- Preparing focus questions,

- Asking open-ended questions,
- Avoidance of redirection, preparing multidimensional questions,
- Preparation of alternative questions and probes,
- Creating diverse types of questions,
- Arrangement of questions in a logical way.

4.4.2. Preparation and Mobilization to The Field

Following the creation and approval of the question guide, an "informative content" approved by the METU Ethic Committee was prepared before going out on the field *(*For the Ethic Approval form, see Appendix 4). The prepared informative content was given to all interviewees during the field research in printed form. Following the preparation of the directive and the approval of the ethic committee, a field study was conducted between 6 March and 18 March 2022. Entry to the field was quite easy. In addition to the fact that a pilot study was conducted before and therefore the business authorities were aware of the content of the research, the professional relationships of the thesis author due to his experience in the mining industry were also a factor that helped entry into the field. The third factor that eases entry into the field is the prestige created by a doctoral study at METU. After the pilot study, it was figured out that the royalty business has changed. During the pilot study, the transfer of the royalty operation ran by the PARK Teknik Company to ÖEM as of November 2021 did not cause any problems in terms of research. In fact, although the royalty firm has changed, there has been no significant change in terms of the researcher since the majority of the staff, including the operating manager, remained the same. Interviews were conducted with workers working in three different shifts in a room in the maintenance and administration building at the mine entrances. Due to the lack of an environment that provides similar conditions in the ÖEM, the interviews with the workers working in the ÖEM were held in a private environment in the lobby of a hotel in the center of Tavşanlı.

4.4.3. The Features of the Interviewees

As mentioned above, it is designed to interview a total of 30 miners. With the progress of the interviews, it was seen that a saturation point was reached after 25 interviews. In this direction, considering the balance in the composition, interviews were conducted with 33 workers, 23 of them in GLİ and 10 of them in SEE.

Negotiations started on March 8, 2022, and ended on March 17, 2022. In this time limit, on March 11, 2022, the GLİ Ömerler Underground Quarry was descended with a shift engineer, and the galleries, work legs, all machines used in the production process, security and control systems were examined in detail and visual records were taken. The youngest of the interviewees, who worked in different shifts and different duties, is 26 years old and the oldest is 60 years old. The average age of the interviewed miners is 37.87. The shortest interview lasted 55 minutes and the longest interview took 2 hours and 43 minutes. The following table holds basic information about the interviewees and interviews:

Table 3: Interviewers and basic information about interviews.

Interview Number	Operation	Interview Date	Age	Specialty/Degree	Length of Interview Phone Records	Length of Interview Gadget Records
1	GLİ	8.03.2022	26	Fitter	01:15:20	01:18:07
2	GLİ	8.03.2022	51	Quartermaster	02:43:16	02:44:23
3	GLİ	8.03.2022	38	Mechanics/ Maintenance and Repair	02:36:16	01:36:29
4	GLİ	8.03.2022	35	Fortification	01:41:12	01:41:28
5	GLİ	8.03.2022	38	Drum Cutter	01:20:54	01:21:05
6	GLİ	9.03.2022	37	Electrician	01:54:22	01:54:43
7	GLİ	9.03.2022	42	Acquisition of Excavation	01:46:55	01:46:05
8	GLİ	9.03.2022	35	Acquisition of Excavation	01:33:21	01:33:21
9	GLİ	10.03.2022	45	Blaster	02:19:45	02:17:33
10	GLİ	10.03.2022	40	Digger Fortifier	01:14:10	01:14:19
11	GLİ	10.03.2022	43	Kulikar Operator	01:08:36	01:22:08
12	GLİ	10.03.2022	50	Mechanics/ Maintenance and Repair	01:19:18	01:17:46
13	GLİ	10.03.2022	30	Fortificiation	02:09:41	Absent
14	GLİ	11.03.2022	33	Acquisition of Excavation	01:28:24	01:27:54
15	GLİ	11.03.2022	32	Bander/Buttoner	01:42:49	01:42:10
16	GLİ	11.03.2022	47	Acquisition of Excavation	01:28:04	Absent
17	GLİ	11.03.2022	60	Blaster	02:12:57	Absent
18	GLİ	12.03.2022	38	Mechanics (Maintenance)	01:41:49	01:41:32
19	GLİ	12.03.2022	34	Fortification	00:55:46	00:55:15
20	GLİ	12.03.2022	36	Cutter operator	01:37:27	00:13:22
21	GLİ	12.03.2022	36	Electrician (Maintenance)	01:30:08	Absent
22	GLİ	12.03.2022	28	Digger fortifier	01:28:41	Absent
23	GLİ	12.03.2022	42	Acquisition of Excavation	01:54:06	Absent
24	ÖEM	14.03.2022	37	Blaster	01:36:02	01:35:18
25	ÖEM	14.03.2022	33	Bander/buttoner	01:29:04	Absent
26	ÖEM	14.03.2022	37	Preparer	01:47:50	01:47:27

27	ÖEM	14.03.2022	38	Fortification	02:39:02	Absent
28	ÖEM	15.03.2022	30	Digger master	01:26:15	01:25:37
29	ÖEM	15.03.2022	31	Preparer master	01:29:41	Absent
30	ÖEM	15.03.2022	34	Electrician /Maintenance and Repair	01:39:32	01:38:17
31	ÖEM	15.03.2022	38	Electrician /Maintenance and Repair	01:20:28	Absent
32	ÖEM	15.03.2022	38	Mechanics/ Maintenance and Repair	01:41:45	01:40:31
33	ÖEM	15.03.2022	38	Mechanics/ Maintenance and Repair	02:21:17	Absent

Eight representatives/managers/unionists/academicians were interviewed, except for the mine workers, and the sampling was closed with a total of 41 interviews. The interviews conducted outside of the mine workers are as follows:

Table 4: Academician interviews with employers and union representatives

	Interview Site	Interview Date	Specialty-Degree
1	Turkish Coal Enterprises Authority - Garp Lignites Operation Directorate	7.03.2022	Garp Lignites Operation Directorate- Operating Manager
2	Turkish Coal Enterprises Authority - Garp Lignites Operation Directorate Ömerler Underground Mine	8.03.2022	Garp Lignites Operation Directorate - Ömerler Underground Mine Principal Engineer
3	Ömerler Underground Mine Work Union Representative	9.03.2022	Garp Lignites Operation Directorate - Ömerler Underground Mine Union Steward
4	EGE Coal Management Directory Association	14.03.2022	Ege Coal Management Field Administrator
5	EGE Coal Management Management Association	15.03.2022	Ege Coal Management Principal Engineer
6	Tunçbilek Mining Trade Union	16.03.2022	Tunçbilek Mining Trade Union Branch Secretary
7	Turkish Coal Enterprises Authority - Garp Lignites Operation Directorate	17.03.2022	Garp Lignites Operation Directorate - Deputy Business Manager
8	Dumlupınar University/ Department of Mine	17.03.2022	Engineering Faculty Mining Department Prof.Dr.

4.4.4. Recording of Interviews

All interviews were recorded as audio files in digital format after obtaining the consent of the interviewer. The interviews took longer than expected, in that sense.

The reason for this was seen as the willingness of the interviewees and the intensity of the experiences to be conveyed.

4.5. Ethic

In addition to giving "informative content" to the interviewers, detailed information about the purpose and content of the research was given orally before the interviews. It has also been informed that personal information will be kept confidential within the scope of the Law on the Protection of Personal Data (KVKK), and that distinctive personal characteristics will not be reflected. Before the audio recording of the interviews, permission of the interviewees was obtained.

4.6. Limitations and Difficulties

No limiting factors were faced to of the study. The people working in the sector ensure that the negotiation is both pre-partitioned and the scope of the negotiations is quite high, as the results of sharing and speaking of the metal works interviewed are very clear actions and the intensity of gains and their motivation are very high, and even they are very pleased to be a part of such an outcome. Before the fieldwork, it was not expected that the interviewees would be so invited and initiative-taking for the interview. It was even expected that there would be some reservations about accepting the meeting. The persistence of the expectation is that the interviewees' willingness to speak and their motivation are quite high. The biggest difficulty of the research is that the atmosphere of the interview becomes emotional during some meetings. Particularly in the sections where cooperation and solidarity within the mines were discussed, the images in which he conveyed the common accident cases that took place in the rescue teams in the Soma disaster and the experiences of rescue from under the rubble shaped the interview environment emotionally. The researcher helps the interviewer to relax in this regard by empathizing with the interviewer without hindering the interview regime. A secondary challenge faced by the researcher personally was the risk that the thesis author was the manager of some of the topics conveyed by the interviewers and therefore influencing the interviewers and interviewees. Being aware of this risk, the author opened the thesis by intervening with the interviewees and listening to the interviewees' statements as if they knew nothing about the subject.

4.7. The Analysis of the Interviewees

Interview recordings were listened to one by one, transcriptions were prepared, transcriptions were reviewed and subjected to descriptive analysis under thematic headings. The findings and analysis are enriched with verbatim quotations (verbatim) from the statements and emphases of the miners and key people interviewed. In these quotations, the expressions used by the interviewees, pauses during the speech, repetitions, and so on… It is aimed to convey the emotional state and thought process behind it. In this way, the restrictiveness of the written language has been tried to be reduced to some extent.

CHAPTER V

LABOR PROCESS: RECRUITMENT, KNOWLEDGE AND SKILLS

In this section, it is being asked to the workers that what it means to be an underground coal miner from the eyes of the workers, how they got the job, the skills they had and what the job meant to them.

Mining, especially underground mining, has historically been one of the most difficult lines of work. Although mechanization in production techniques and some technological developments have been recorded in the last fifty years, the environmental and health effects of working conditions still require serious physical strength and cause workers' health to be adversely affected. An interviewee explains how he internalized the difficult conditions and how he adapted to these difficult conditions despite these adversities:

> *"In truth, you ought to work, in any sort of condition. It is more than a job, what you see it. It is your job now. When you work continuously in the underground, it is trouble to go back to the surface. It is challenging. Because the environment of it is like that: Outside is so cold, it is harsh to work there; but in the underground, it is more different in comparison, heat is different. I wear an undershirt while working there, with summer dresses, or maybe a sweatshirt. Yet, in the outside, even coat is not enough to warm. The environment is different, communication is different. Everyone cannot be a miner, and every miner cannot work in an overground. (G27-Fortification Master)*

In addition, the meaning of underground mining also provides a relative prestige and respect among surface miners and sections of society that value labor. For this reason, in almost all visual representations of craftsmanship around the world, the faces of underground coal miners covered in coal black are commonly presented together with underground miner's helmets with lanterns on them.

5.1. Recruitment Processes in Tunçbilek Mine Basin

In Tunçbilek underground coal mines, workers are recruited from the labor market through two main employer companies. As mentioned above, these are the publicly affiliated GLİ and the Ege Mining company, which produces on behalf of GLİ.

An important fact to note when looking at recruitment processes is that some of the assumptions of the neoliberal labor regime have not yet fully permeated the Tunçbilek mining basin in particular and underground mining in general. The traditional separation of home and work, for example, as Gregg (2011) and Kalleberg (2009) point out, has been eroded by the neoliberal labor regime. The most fundamental reason for this is, obviously, the "spatial constancy" of the mine. That is to say, it is already physically impossible for the underground miner to "bring his work home". On the other hand, some other traditional boundaries eroded by neoliberalism have also persisted in underground coal mining. One of these is related to employment processes. It was found that recruitment processes still partially preserve their traditional forms.

Garp Lignite Enterprises supplies its own workers from three main sources: These are respectively; Expropriation is selected among those who come with Public Personnel Selection Exam, relatives of Gazi-Martyrs and those who have excelled in military service. It is the expropriation group formed by the owners of the land and houses, which were initially within the mining license area and operation and subsequently acquired by expropriation. Local people who fall into this group are given the opportunity to work in surface and underground coal mines, one person from each household. It is seen that the workers in the first group define their relationship with the mine on a socio-spatial scale and establish a relationship with the mine even before they start working as a worker in the mine:

> *"Mine is our lives, completely. Since the first time our eyes opened, we saw coal, when the time came and we closed it, it would be coal, again. We are different from the ones who were born in Tavşanlı, we were not born in a city, we were born in the center of the mine. For instance, me; I have been with coal since I was 13-14 years old. Coal is our lives, in that sense (G7-Excavation).*

In this context, it is also noteworthy that neoliberalism, which erodes the concepts of "work and time" and even deforms the content of these concepts, spreading work to every moment and space of life, has partially lost its influence in underground coal mining in recruitment processes. The preference of the local people living in the vicinity in the recruitment processes of the mines shows that the place still exists as a factor. Undoubtedly, one of the factors to be taken into account in this case is also related to the financial and social impact of the mine on the "place" where it is opened. Indeed, as will be detailed in the excerpts below, local people whose land was affected were given priority in recruitment. This points to a concession that neoliberalism had to make in the specific case of our research population, and which came up in the negotiations.

Another point to be noted here is that, as Çelik (2021) points out in his discussion of the overlap of investments in the regions where mining activities take place with the patterns of proletarianization in these regions, the labor force employed due to the spatial location of the mine is selected from the people spatially closest to the mine and these people are of village origin. When we look at the employment capacity of the region where the quarry was opened, it can be thought that the "readiness" position does not have conditions suitable for industrial production. In fact, as Perreault (2006) points out, local people in this region may come into conflict with the mining company over issues such as land rights, cultural heritage and public health due to mining activities. In such cases, meeting the need for employment in mining operations locally will create the potential to prevent such conflicts. At this point, it is an important data point that the employed workers are not very familiar with industrial forms of work, and the opening of the quarry both reproduces the space and shapes it as a "social product" by enabling social change and transformation.

It can be thought that this relationship summarized above has other functions in terms of mining operation. It is aimed to reduce the negative economic and social effects of unemployment and physical displacement created because of mining activities, to legitimize mining activities relatively in the eyes of the society, and to narrow the negative net number of employees in local employment. Cowell (2011) criticizes the use of economic benefits to dampen/overcome possible social reactions

for not knowing the dynamics of social acceptance. Aitken (2010) states that procedural justice creates more positive results for local communities than justice in the economic (or output) dimension and focusing on economic benefits without understanding the social processes may produce negative results that will be perceived as bribery.

The recruitment process is relatively easy for workers employed from households whose land has been expropriated:

> *"I considered it as a destiny. Yet, it was totally different from what I imagine the mining job. There was an expropriation in our home. Actually, there was a matter of priority, it was my brother. Yet, my brother did not want it. I returned from the army, there was a year of mine as spare time, thus, my father advised me to go and work in the mine. It is destiny. On the other hand, it is another expropriation for us, mine. As I said, it is destiny. I am a secondary class graduate. Then, this situation occurred. I applied, and then attended the interview. Then, I started. (G15- Conveyor Operator).*

However, not everyone who could get a job from expropriation starts directly. Because of the decrease in the need for labor force with the technological development, the high number of applications made to the limited number of positions is taken under control with interviews and physical work tests, making the selection process more complicated. Spearing (2019) states that the new technological environment in the mining industry will require lifelong learning. He mentions that besides the transformation of schools providing education in this field, some of the workforce will need to increase their skills and be supported by employers.

As Sayan and Çelik (2012) emphasized, the employment structure of public institutions and organizations that provide public services has changed in line with market principles in line with the objectives of adapting the state organization to the requirements of global capitalism.

However, as the quotations and explanations above demonstrate, the neoliberal employment regime has not fully penetrated underground mines in this context. In an employment regime where traditional recruitment processes can still continue in underground mines, privatization and subcontracting processes also affect this traditional employment structure. As Kalleberg (2009) explains, along with

privatization and subcontracting, dynamics of neoliberal deregulation and flexible labor market creation have also emerged.

The establishment of labor relations that will enable the commercialization of public services, including privatizations, has been achieved through subcontracting and contractual employment. However, the measurement-selection criteria have been made more difficult by the gradual decrease in public investments and employment due to neoliberal policies and the decrease in the allocated staff. It should be noted that some of the interviewed workers define this situation as "favor", on the other hand, it must be noted that the process has produced a mental structure for the latent function with the ideological tools of the process, and they have moved away from questions such as questioning macroeconomic policies, demands for fundamental rights, and so on:

> *"I came from real estate. Here our fields were expropriated by the GLİ. We were given priority from there, we had an interview from there, we were lucky, we started." (G7-Excavation and Export)*

> *"Well, I was hired when it was in expropriation, I got a job, I mean, directly. The state purchases and determines the purchase. ... they give us the right to have a direct interview, like 100 points, for example, directly from Public Personnel Selection Examination. If you are successful in the interview, then you get the job. We were not literate; it was a must. For individually, I have to it, this job was better for me, because the salary is better, for now." (G1-Auger)"*

The second source of labor is KPSS group workers who meet the criteria required by the institution according to the results of the Public Personnel Selection Examination (KPSS). This examination was shaped by the Council of Ministers Decision dated 18/3/2002 and numbered 2002/3975, for the first time in 2002, to provide successful and high-quality personnel with fairness and transparency from the basic tests in the recruitment of personnel to public institutions and organizations. Those who enter the sector with this method must be high school graduates and get at least 70 out of 100 in the exam. As stated by the worker quoted below, candidates who meet these conditions and have made an application are started to work on the condition that they pass the interview, technical and physical tests conducted by the institution.

> *"I had 70 points on the Public Personnel Selection Examination. There was a recruitment of workers here. I applied here in 2002, but I could not win. I still*

had 70 points back then. We can't get to 70 anyway. It doesn't happen after a year. At that time, my child was born, so I couldn't go to class. Then I applied here. Then I got the right to enter the interviews. Then I entered the interviews and won." (G3- Mechanic Master)

The third type of workforce resource of GLİ consists of relatives of martyrs, veterans and those who have excelled in the military. To regulate employment procedures and principles within the framework of the Regulation on Employment to Public Institutions and Organizations, which was prepared within the scope of the Appendix-1 article of the Anti-Terrorism Law dated 12/4/1991 and numbered 3713. As stated by Gündüz and Buğdaycı (2021:209), those who fall within the scope of this law are exempted from the requirement of obtaining sufficient points from the Public Personnel Selection Examination. In addition, they must meet the qualifications and conditions indicated in the legislation regarding the qualifications of the staff to be applied for, and they must go through the entry processes that the institution applies to other candidates.

"I also had a certificate of superior achievement from military service. My retirement age is 58-60. God gives health, endurance to everyone, God willing. I thought that I have such an opportunity, let's apply. I applied in 2015, luckily, I got here. It was the importance of a certificate of outstanding achievement in the military. They prioritize that." (G16-Excavator)

In the selection of underground miners working in the private sector, labor is generally obtained from two sources, unlike the public sector. They are chosen from among the workers who have any previous underground mining experience or who are successful in the interviews and physical tests made with the suggestion of some local political figures or the union. In addition to this, worker candidates residing in the mine site or in the nearby region can also become mine workers through similar networks.

"I applied for the job. There was a sergeant working there. Also, my brother-in-law has a grocery store. He was his neighbor. He said, 'We're hiring workers. If your in-law is also available, let him come and apply. So, I applied. They said, 'Draw something up, and start', that's how I started." (G29-Preparation-Chimney)

However, there was only one private company actively working in Tunçbilek underground coal mines at the time of the study. The company, which is affiliated to Ciner Group, was operating under the trade name of Park Technics. The company,

which has been operating in the region for many years, did not participate in the royalty renewal process in line with its decision to gradually exit underground mining. In this direction, Ege Mining signed a royalty contract with the company GLİ and obtained the operation and production license of the quarries.

The production observed during the fieldwork is that the new company is carried out entirely by Park Technics-based staff and workers. For this reason, almost all of the managers, engineers and workers previously employed at Park Technics continued to work with the new company:

> *İzmir Pit Coals. Right now, there is a lot of difference between when Park Technics moved from its first opening to this new order. Everyone is experienced there. İzmir Pit Coals said that "I want to work with experienced men." Because everyone was experienced, there was not any man who did not know the job, everyone knew the job. For example, if work accidents occur 10 times a month automatically, it happens once a month now." (G30-Electrician)*

While this situation is very advantageous for the new company, the consolidation of qualified workforce and relative working relations, efficiency, and the position of the company against the union struggle, the same situation has led to a serious loss of the rights that the mine workers had previously gained through union processes over the years. These losses and the new situation will be discussed again in the following sections.

In the interviews with private company workers, the limited employment opportunities in the region are often mentioned. In addition, it was emphasized that current agriculture and livestock activities do not have a volume other than subsistence economic value due to agricultural policies, high energy/input costs, quality of lands, lack of cooperative/professional organization and infrastructure deficiencies, and drew attention to the importance of employment opportunities created by mining work:

> *"I had some friends who are working. Financially, I did not choose it in fact since we were getting less than minimum wage, then. Getting a job with insurance was our aim. You might see that there were no factories, or anything that are being organized. So, it was not planned or organized as I said. It was only business option as possible for me therefore I ought to choose it. (G-25, Bander-buttoner)*

Additionally, the job opportunities in the region forcing people to work without security is one of the important determinants of entering the mining business. Reducing the life anxiety caused by precarious work and the helplessness that people face due to these reasons make it easier to choose another job that is considered dangerous/unhealthy. However, as the quotations and explanations above demonstrate, the neoliberal employment regime has not fully penetrated underground mines in this context. In an employment regime where traditional recruitment processes can still continue in underground mines, privatization and subcontracting processes also affect this traditional employment structure. As Kalleberg (2009) explains, along with privatization and subcontracting, dynamics of neoliberal deregulation and flexible labor market creation have also emerged.

The characteristic features of neoliberal policies such as privatization, lack of control, insecurity, non-unionization, and low wages ensure that employees are willing to "death and malaria". Sometimes it is seen that workers choose the mining job as an alternative to unemployment or precarious work without adequate knowledge of the risks of the job:

> *"I chose it because of unemployment. I could not find any job. Tavşanlı was then a blind place. A village. There was a sock factory. They were already taking workers backdoor. Since we didn't have any backdoor anywhere, we had to choose the mine in the end. I was married at that time. I already needed insurance. Waitress has no future. Being a waitress after 40 age is very difficult. The living standards are as we know. At that time, they said that there was a recruitment of workers here. I went and applied. That's how it got lucky. I never knew about early retirement here until I came here. There is no miner in my family anyway. We don't have miners in our family." (G33-Mechanic)*

Another situation observed during the fieldwork is that there is no tension between the groups recruited through different sources. The reason for this is that, despite the hierarchical structure and following strict procedures regardless of the quality of underground mining; It can be thought that it has an equalizing feature within the framework of concepts such as difficulties, solidarity, sharing the danger, and that it was an intense political area until a period.

5.2. Motivational Background of Being an Underground Miner

As mentioned above in the discussions on the neoliberal definition of work by Kalleberg (2009) and Peck and Theodore (2007), the neoliberal labor market has led to a growing distinction between "good" and "bad" jobs. In this context, it is noteworthy that mining work was also defined as a "good" job by the interviewees.

The preference of Tunçbilek underground mining work by the workers is a relative advantage in terms of personnel rights, as mentioned above. Basically, having insurance and early retirement rights is considered an advantage in this socio-economic atmosphere:

> *"There was no other job then. I had started in Özdoğan, the salary was low, the hours were harsh, there was no vacation. For example, you will go to work 30 days a month. You will use the holiday whenever they give it. But in this Park Technics, you had the right to one day off a week. 8 hours, it is clear. You work in 3 shifts. This way is more appealing to me. At that time, we arrived around 15-20 people from the village. We are gathered. There was no problem of arriving home. That's why we chose it. There is also an early retirement age. If I work above ground, I will have to work until I am 70 years old. But underground, you can retire at 39." (G32-Mechanic)*

The fact that underground mine workers are considered to have worked 540 days, with 180 days of work added to their 360-day work, depending on the actual service period, enables underground mine workers to retire early. Depending on the changes in the retirement age of the miners over the years, if all the conditions are met, the retirement age, which decreased to 39 years in underground mining, has increased to 43 today. This opportunity provided by underground mining is an important source of motivation for many workers to choose to work in the underground mine:

> *"From what I heard from my elders. There was a man who retired at the age of 38, retiring early… Most of the neighbourhood was miners. All my friends were going to the mine. I said why don't I go, what's wrong with me, I should go too. That's how I stubbornly went. There is a place called Akaylar Feed Factory. My father said, "Let me get you to work there, enter as a cashier." I said, "I will not enter, never ever", I ran away from my father and went to Dursunbey. My father was serving the village. I came the day before, put it on and went to Dursunbey. I got on the train in the morning, I went, I didn't come for 2 months. My father didn't want me to be a miner. He was a truck driver at the enterprise (GLİ), there were no miners in our family. I don't have any of my uncles… My father entered, but he worked less, he quit immediately and started working on the truck. My uncles are truckers,*

already. I came out as a miner, and my brother came in after me. That's how we got in. My uncle came in after me. Look, my uncle is retired now. My father's youngest brother who was born in 1975, is now retired." (G26-Preparation-Chimney)

Within the scope of Law No. 5510, the regulation on early retirement, covering after 01/10/2008, coincides with the Soma and Ermenek disasters, and is effective in the selection of mining as a business line. It is known that after retirement, which is seen as a security step/stage, miners work in different jobs, receive salaries below the minimum wage, and deal with diseases related to working in the mine.

Another issue in the selection of underground mining is that the wages are relatively better compared to surface mining. With the bag law numbered 6552, which came into force in 2014, it was stipulated that the lowest wages of miners in underground workplaces where lignite and hard coal are extracted cannot be less than twice the minimum wage. In addition, working hours have been reduced and compulsory overtime wages have been determined as 100 percent increase.

"I didn't know anything, in fact. But as time has passed, I trust myself, my strength, my courage is trustful in that sense. Even my friends say that they were not expecting me to go down to the ground. It didn't happen either, but if it does, we have a little money, which is good for insurance or retirement. We put up with it a little bit for them anyway." (G23-Cleaner)

The relative economic advantages of underground mining are often compared to other employment opportunities:

"The salary given by the chickpea factory where I worked in 2012 was not enough. And I had my child at that time… Even then, there wasn't much difference in the money thing either. Honestly, I chose it because of the money. I preferred the underground for 300-400 Turkish liras. Then we started, when 301 people died in Soma, our salaries improved. May their place be heaven. After that, we stayed in the mine. I chose the mine because of the economy." (G28-Excavator)

As the quote above illustrates, in the process of choosing a mining job that offers a "good" salary in a precarious work environment, the life-threatening dangers of the work may be ignored. Quinlan (2014) and Lippel (2004) argue that the drive to reduce costs and maximize profits in the neoliberal business regime exacerbates workplace hazards. However, despite the increasing number of accidents, injuries

and occupational diseases in the neoliberal labor regime, underground coal mining work is still preferred due to its financial returns.

On the other hand, there is always a demand for underground works despite all the negativities due to the imposition of economic conditions.

> *"I prefer above ground for health reasons. I am 29 now, but those who see me from the outside say that I look around 30-35. I don't know what you think, but these are the experiences I had. I prefer above ground in terms of health, but I prefer underground in terms of early retirement. But of course, the underground isn't easy either. Everyone wants to work above ground. Like I said, when I went underground, it was hard at first. But right now, I prefer underground because underground seems above ground to me." (G28-Excavator)*

In terms of being a miner in underground mining, public employment remains a desirable form of work in general. Many advantages such as bonuses, salary policy, security, working conditions and holidays make the public attractive. The part in which a participant states what it means to be a public miner in their article titled "Working life in Zonguldak mining enterprises in the Müftüoğlu and Taniş's; "21st Century Time Period, A Cross Section - One Reality" is also important. In Case Study-2, the participant states the following:

> *"He is lucky in a way that he saved himself, his life. At least there is a holiday, there is a bonus. Had no choice, while they are on holiday for six days, we must go down to the stove on the third day of the holiday at the latest. There is neither annual leave nor working hours, we go down to the quarry face to face with death every day, but what can we do, I am married, and I have a child, I have no other job and I must work." (Müftüoğlu ve Taniş, 2010)*

However, as stated above, this situation has changed positively in terms of employee personal rights and wages, without separating public-private mining workers, relatively in favor of workers, with the legal regulation after two milestones of accidents.

> *"The ones who work in public get everything, but the private workers get nothing. There is also a difference in salary. First, there is the problem of salary. The man who works in private is often not able to get his salary. I lived it. Experienced. I have worked and lived in the private sector. I didn't get paid most of the time. I got a month; I didn't get my salary for 3 months. But not in public. No matter what day it is, I got my full salary." (G14-Excavation and Export)*

In addition to all these findings, sociological factors have an important place as Super (1957) mentioned in the factors that determine the choice of profession. In addition to fulfilling a facilitating function depending on the transfer of this culture and accumulation from the point of view of the individual, the pressure, expectations, and interaction with these structures at every level can be effective in the choice of profession. As Aykaç also stated (2021), SOEs dramatically change not only the economic structure of the region where they are established, but also the social and cultural development. This social impact of SOEs also has the ability to determine the employment preferences and motivations of the community in that region.

The contact established with many underground miners in the study area from an early age shows that this type of workmanship is assimilated/adopted among some of the participants.

> *"My situation is very different. I was in elementary school, like, seven years old, my father was working in government then, in the underground. That's when I went, it seemed like a different environment to me. It has fascinated me ever since. After I came from the military, I heard that there is a recruitment here. I thought I'd give it a try, so I started. If it doesn't work for a year or so, I said I'd quit, I couldn't. That's how it continues now." (G29-Preparation-Chimney)*

As can be seen from the worker voicing the above quote, SOE affects the employment motivation of the worker not only as a field of employment but also with its "environment". On the other hand, with neoliberalism and the privatization of SOEs, the social and cultural role model effect of SOEs is gradually fading. The aforementioned social and cultural climate, established together with SOEs, is seriously eroded in the neoliberal negotiation process.

5.3. Labor Processes and Division of Work of Underground Miners

In this section, the groups that make up the underground mining work will be examined by focusing on understanding the work processes and division of labor in mining activities, the processes of acquiring professional skills, parent-child relations and working styles.

As Erdut (1998) and Uyanık (2003) point out, the new labor regime of neoliberalism has been structurally influenced by the development of new production techniques

and information technologies. This impact has brought about quantitative and qualitative transformations in the division of labor.

It can be said that underground mining is separated from classical mining and divided into sub-tasks that require separate expertise. Technological infrastructure has an important role in shaping these groups. First of all, the new type of knowledge and harmony imposed by the use/design systematic of the equipment are important in this separation. The other is a more managerial issue and embezzlement vs. Desiring to establish audits with subjects necessitates job descriptions. However, the concept of division of labor is a controversial area. While being a part of the job is sometimes seen as a necessity of efficiency and expertise development affirmed by classical management theory thinkers, it can also be analyzed as a dynamic of alienation.

5.3.1. Business Department at Tunçbilek Underground Mining Site

While classifying the worker groups that go underground constantly and are involved in production, operation and maintenance processes in underground mining, the work process will be handled as described in the previous sections and will be based on job definitions and division. Therefore, the interviewees consist of workers who are constantly working actively in the mine. According to the workflow, these are the preparers-chimney men, mechanical maintenance team, electricians, fortifications, excavators, cutter operators, blasters, augers, banders and cleaners working in mine preparation activities. In addition to these groups, OHS specialists, engineers, and shift sergeants (technicians) occasionally land in the mine.

5.3.1.1. Work Definitions in Tunçbilek Underground Mine

The Preparers (*Bacacılar/hazırlıkçılar*)**:** The preparers are the team that opens all tunnels in the quarry and prepares the foundation for the panels. Chimney men perform their work with a specially designed team to open a tunnel. This team also includes blasters/hole maker, augmenter, mechanical and electrical workers. An interviewed preparation-chimney master describes the work processes and the division of labor with other worker groups and the framework of his work in detail as follows:

“The chimney master works to prepare the gallery for production. They are drilling for a certain period or above ground; they give me stopes according to those drillings. According to that quota, I work in the chimney cap. There are steel ties, we throw them away. You throw one meter, you throw 50 cm, you throw 75 cm, but depending on the condition of the fault. If the place where you need to work is rough, you throw it up to 50 cm. This is the case with Park Technics I experienced. Our work falls to 75 cm, 50 cm. One meter now. One meter is the length of our brushes on the chimney cap I worked on yesterday. They are also steel brushes. One meter. We throw it according to its situation. They give stopes, we throw them accordingly. The measurers come, they say, 'You go with 10 slopes.' I throw 10 stopes, every day. With a -10-degree incline. If they say plus 10, you throw it like this, if they say minus 10, you throw it like this. I threw it accordingly. When you reach the end, they say, "Okay, the chimney is finished". I'm opening a chimney here. After that, they lower it 80 meters. In general, the length of our feet is 80 meters, so we open another chimney 80 meters below. I made a U-shaped chimney; my job is finished. I come out of the chimney; the man of production comes. I have five spares, I also have a shovel operator, six of us go to a chimney. Now we're making shots with blasting. There is no dossier. We opened the main galleries. Dosko is gone from us. We detonate it, it grabs the scoop, and we fortify it. Already the width of a corridor is 3.50, floor-to-ceiling 4.30. Sure, the scoop isn't a very big scoop either, there are smaller scoops. It's the same as the forklift, just with a bucket attached to it. These are with pallets, with iron pallets. He is an equipment man; he is also a blaster. I also have a driver's license, but I'm not doing that job. Blaster is getting separated. He becomes a digger, that is, an operator. I also have a hole-punch, I help the hole-punch. Six men under my command there is. They say to me in the plot, 'Work with these men, do that' by giving me directions. I go, I do those things, I come back in the evening, one hour before the end of the shift, I call my supervisor, 'My manager, I did these things, these things remained. What will the shift do?' I asked the shift supervisor, 'I left it here, let them continue beyond that'." (G26-Chimney Master)

Recently, the use of automatic tunnel boring machines (called Dosko) has started to be seen as a technological development in the opening of some panels. Although there is no such device in GLİ's Ömerler Underground Facility, the preparation processes of some panels were also given to subcontractors in parallel with the privatization policies.

As in the example of Peru given above by Bebbington and Bury (2009), the impact of neoliberal cost-cutting measures and the automation process in the mine on the work ethic and labor relations among mine workers is renationalized.

Similar to the Peruvian example, the use of the "dosko" was ensured in Tunçbilek, but according to the information conveyed by the union officials, the device in

question remained under the dent due to the technical and engineering difficulties experienced in the tunnel built by the machine. It is important to evaluate the parameters of the rock to be excavated and the parameters of the excavator used with correct engineering calculations. The natural conditions specific to mining produce patterns that cannot provide solutions with a fixed technological infrastructure, and in this respect, underground mining is the sector where the limits of technology are most clearly felt.

On the other hand, subcontracting the works in the mine preparation stage leads to low quality work in relation to profit maximization and the lack of control resulting from the political affiliation of the subcontractors.

> *"For example, this private subcontractor went over coal while the first galleries were being built. Here's the thing. The primary objective of the private sector is profit. First, he thinks about his profit. How can I make more profit with less cost with less workers? It is difficult to go out of stone in underground mining. But since coal is lighter and softer, it is easier to go with coal. You make more progress. This is how it went. As I said A5, we finished the A5 quarry, we prepared it, then we moved on to the A6. We built this A6 gallery ourselves with the help of the public. Why prudent teacher? Our own men prepared the place. This side was made by a private company, they did it blindly." (Union Representative)*

Excavator-fortifiers, while they were a very important group in classical mining, they became one of the work groups whose structure changed with the transition to the new fully mechanized system. First of all, with the commissioning of hydraulic fortifications, the number of workers working in this group has decreased significantly. Thus, while their number was twenty people in a shift before, their number is limited to six people in a shift at the present stage.

> *"We have marching fortifications below. In front of our walking fortifications, there are ties that we call the curved ligament, which must first be driven into the chimney. You know, it's called a curved, round tie to take the load a bit. They also know that when the chimney is driven, it is the chimney between the hearth at first. Walking all around the main road, in the gallery road… It has been always conducted in that way. Since they are not suitable for our walking fortifications, normal straight TH tie is used for them. In other words, we cancel the round tie, or it dents, presses, collapses. We take them, flat TH instead… Because the walking fortifications, on top of it, the TH can be flatter, the fortifications should take the load on itself. In other words, on the main road and on the band tours… We repair them. The day comes, you throw away the rust, the day comes, you pull the material, the day comes, you connect the bolt, the day comes, but when I take that load, I*

call it a common TH tie, that is, a 6-meter piece of tie iron, six people subject it to and lift it. He takes it on his back, he takes his safety, it takes his time, he makes his wedge, his part. So, if you are such a team, you cannot say that this job is mine. Because anyone in the front shakes the pickaxe, can get tired, when he got tired, you need to change it. Change of the six people is matters." (G22-Excavation & Fortification)

Mechanical teams are actively working in both the preparation and production phases of underground mining works. With the prevalence of technological infrastructures, the skills and workloads of mechanical teams have increased. The probability of failure of mechanical/mechatronic systems operating continuously over a three-shift system underground increases due to reasons such as wear and overload. For this reason, team solidarity and cooperation have been conveyed as an integral part of the working processes:

"I am a mechanical maintainer. Mechanically, I do everything underground. I'm getting all the work. Things I'm curious about my job, generally. Our job is production. Our coal shipment is made by our tape. There are bands at certain meters. These tapes have attachments, and we call them fasteners. These are, for example, expansion. These are replaced. Their maintenance, replacement of their rollers, transmissions, replacement of drums... Instead of detecting faults and intervening in a timely manner and stopping the system, stopping this work for a short time and returning to production; this is our only goal. We are always underground, I constantly check and if there is something to be done from here, I do it immediately, but if it is a long job, for example, we tell my shift manager and do it within a certain time and start production. If there is a malfunction, we do the malfunction, if not, we do the maintenance. So, the job isn't over. There is no such thing as I did the maintenance and it's over. Our underground work never ends. It doesn't end. I'm switching to another job. We are preparing. One side is production, and one side is preparation underground. Preparation: that is, the tools are going, coal will be collected in the future, coal will be taken. Its preparation. From the front, the conveyor goes up to a certain meter. When the power of the conveyor is not enough, we disassemble this conveyor and set up a belt again, according to the possibilities we have. Belt, and then, conveyor, we continue in this way. Me, and my friends, we do it as a team. You can't do anything alone underground. For example, as a repair, maintenance person, for example, whoever is idle then comes as a backup. It was in vain, therefore. That's how we work together." (G32- Mechanic)

Like mechanical teams, **Electricians** monitor processes for the efficient operation of technological devices in all underground activities and aboveground facilities to ensure continuity of production and smooth operation of the system. An interviewed

electrician described in detail how electricians are active in all work processes of the underground mine site:

> *"Electrical repair and maintenance are based on electricity. We take care of all kinds of electrical faults in installation and dismantling. Communication systems, telephone. Motors, pumps. We look at everything that may be related to electricity. Depending on the situation, I'm either downstairs or upstairs. Because we have vents, pumps, drillings, ventilators, compressors. Wherever the foreman or shift engineer directs us, according to the conditions of the job. There is a voltage range from five volts to 6300 volts. We do all kinds of things related to electricity. Anything you can think of. We have a cutting machine working below. There is the communication of the mechanized system. There are motors running. I take care of everything. We have a foreman. He gets it from the electrical engineer. Depending on the work remaining in the shift, the work changes according to the operation of the mine below. There are short circuits, I don't know; damage to a line, repairing the cable during the shift or during work... That kind of work. There is a hierarchy here. Like seniority. Of course, there are times when we manage when there is no foreman. I mean, we work with at least two people." (G21-Electrician)*

As can be seen from the quote above, electrical work is seen as an important item in terms of Occupational Health and Safety risks in underground coal mines. For this reason, at least two electricians work together against occupational safety risks that may occur in the underground working area. In this way, a preventive measure is taken.

Modern fortification masters (*şiltçiler*) have undergone a qualitative transformation, especially with the introduction of fully mechanized and semi-mechanized systems. In the past, there were no longer any classical methods of support systems, and with the use of hydraulic systems, the support men who acted together with the excavators have turned into operators who use these machines. A modern fortification describes his job description, which has been redefined with the transition to mechanized and semi-mechanized systems, emphasizing the importance of sub-superior relations:

> *"I am a mattress driver, which is called an escalator. One of the main things of the mechanized system is the mattresses. There are seven-meter-tall machines inside the foot that both protect the ceiling and provide us with something for cutting. We are currently on the A2 leg, there are 65 of them in what we call the A2 leg. I am taking care of their execution system right now. I am the operator who uses them. At the beginning of the shift, the sergeant gives the order; today these mattresses will be walked or cut, or this will*

happen. Depending on the situation, if it's going to be walked, it will be walked, if it's going to be cut, it will be cut. The work is given below, but it is the sergeant who gives us the order." (G4-Shiltmaker)

Cutter operators (*kesici operatörleri*) are skilled workers who are newcomers to underground mining with a fully mechanized system. To increase production efficiency, cutter operators need to work in full harmony and coordination with other teams, especially with the support executor, excavation progress, banders and cleaners. As an example of mechanized mining practice, cutter operators' adaptation to the new job description and their reasoning about the use of technological equipment are exemplified below:

"I use a German brand Eickhoff cutter-loader machine, it's a drum. There is a cutter machine in front, it makes the front progress, the back is the support. We cut and load it onto the panzer. It has two heads, two drums, they cut, you cut and advance at a height of 3.80 as floor and ceiling in the supports. Two drums. One drum here, one drum there. The machine is 11 meters long. That's how it works. It works at the same time. Both parallel to each other. For instance, the one goes from the top, the other goes from the bottom, they make each other's work: As soon as the cutting is finished, we move the panzer and pull the fortifications. Panzer... They call it a conveyor. Probably the name of the previous brand was panzer, so we call it panzer. Panzer is what we used to hear, so we call it a panzer. It's a double chain, tracked transporter. We load it and it loads it onto the belt. I drive the machine, the Eickhoff, by remote control. There are two supports, three supports between me and the drum, so six or seven meters. With eye contact, because sometimes he also throws material. We can't stand close to it. There is also noise in the cutting machine, and we can't stand near it because the noise is loud. We must wear protective equipment anyway, like earplugs. The technician gives us our setup, we act according to his setup." (G5-Cutter Drum Operator)

Blasters (*barutçular*) are skilled workers who are intertwined with both the preparation and production units. While more blasts (also referred to as "shots") are made in conventional production, the number of shots in the full mechanism has decreased significantly. Although today's world has made great progress in blasting technologies, the technology used underground continues with very old systems. However, there have been developments in the content of the pharmaceuticals used in blasting. In addition, blasters working in blasting are the first group of workers to be professionally certified in underground mining. The reason for this is that from the past to the present, all those working with explosives have to be certified by the police departments. In the following excerpt, while the framework of the work

performed by blasters is drawn, attention is drawn to the decrease in the number of blasts/explosions with the developing technology and the innovations in the control and supervision of the work with the developing information technology on the one hand, and the change in the content of the pharmaceutical used on the other hand:

> *"I'm in charge of explosives. By the way, I've also worked in explosives. I've done that work at the quarry, I worked as an explosive for 8-10 years in chimneys, at the feet. And now the state has changed the system in explosives, switched to Patbis [explosives information system]. The system reports the daily shots directly to the police, via the computer. I mostly do that work now. Before, the shots were on paper with signatures, we used to report monthly reports, weekly reports, we used to report them on a daily, weekly, monthly basis. But now, daily, at the end of the shift, if the shot was fired in this shift, you can enter it directly into the Patbis system at the end of the shift and see how many kilograms you fired, how many capsules you fired, and you have the same signed paper with the signatures. You have it scanned on a scanner; you report it directly to the police. In the classical system, it was a drill and blast system, now there is a cutting machine. Or where the cutter doesn't penetrate, the fortifications compress, and when they do, we use explosives to raise them. Or if there are places that don't fit, we use them there. The same system continues in blasting. There has been no new change in the explosive. The explosive is the same as it was when I first entered, the explosive is the same as it was when I saw it at school. There has been no new development in these. What happened then: The emissions of the explosive have changed a bit. The content of the explosive has changed. When we first entered, we used to be able to eat what was in this explosive anyway. But now you can't even put it in your mouth. They used to throw it with capsules and fuses. Now they have switched to the electric capsule system compared to the old mining. There has been a change in the firing systems and so on, it has improved even more. It could explode more capsules. They increased the amperage and volts." (G17-Barburettor)*

Agustors and materialmen (*Ajüstörler ve malzemeciler*) are actively involved in all branches of underground mining activities. They therefore work in close coordination with all other teams:

> *"For example, we do weather, water works, small-scale installations. It's a kind of work. We do maintenance work, if there is a breakdown, we do that. For example, if there is coal gas and air is to be connected, they want air from below, we pull air pipes to them, for example, we connect air pipes, we cut those pipes as we get closer, we connect air to them in the chimney preparation team, we connect water, we bring water with pipes, we bring air. After that, we have them breathe through van tubes, in other words, we have them connected to fans. We also remove small coal transportation from the chimney. It is what we have done. (G1-Agustor)*

Beltmen / buttoners-conveyor operators (*düğmeciler/konveyör operatörleri*) are underground mine workers responsible for the operation of belt conveyors and fully mechanized or semi-mechanized chain conveyors, both in preparatory work and in production work. In this line of work, particular attention is paid to the importance of teamwork and communication between workers:

> *"For example, this is a mine, coal is mined, there are workers. We transfer it from the conveyor at the foot to the conveyor at the stationary conveyor, and from there it goes to the belt, and from the belt to the tile through other belts. This is literally the task. Now I am at the place we call the engine head, the place where coal is transferred to the fixed conveyor. Here, I press the button, the result of the combination of the electric motor and the gearbox... I make it work. I make sure the material is transferred in a healthy way. The coal. Here, each ten mattresses... There are materials we call mattresses. There are 50 of the same mattresses, for example, every 10 mattresses there are switches, what we call switches are electrical. Through cables... There is the same one on the engine head, so we communicate with it. There is a megaphone, there is a signal, we communicate with friends in the foot. It calls out that the foot is working, you press the button. The foot is running, there are pallets, chained pallets, the foot rotates, and they throw the coal with shovels and picks. They drill holes with the machine first, dynamite is sprayed, that's how it works. Communication is the main thing... The most important thing is communication. We do this, we do that, it works, it stops. We stop it for this reason and so on. We have earplugs, we can hear more clearly with them, but we have a lot of difficulty. You know, we work in noise, that's the hardest, I have the same one in front of me. There is one in front of me where I work, too. There is a useless crowd in other words." (G25-Tape Worker)*

Cleaners (*Temizlikçiler*) are the most unskilled workers in underground mining. It was observed that they clean the coal that gets stuck with shovels in order for the mechanized systems and support systems to work smoothly, especially in the production areas of the mine. The fact that the worker we interviewed was hesitant to say that he was a cleaner until the last moment while describing his job suggests that this may be related to the fact that the job is seen as a relatively low status and low stratum job underground. As Hare (2004) points out, a striking point in the case of "cleaners" is that the status of the profession can be separated from the practice of the profession and may not be seen as an absolute necessity of the concept of work.

> *"The system here is a new mechanization, and when we entered, it was referred to as a new mechanization. In other words, what we call the old life is not something that is done with windings and support logs, we entered it, our first thing is here. It's a little better, but there are some problems because*

the machines are not ready at work due to some problems, one leg has been opened, two legs have even been opened, but they bring in certain people and employ them. They are also our masters. They entered before us, they are experienced. Well, of course, we are now in production, we are working in production. The job we're doing right now is our... They call us cleaners, to be more precise. What kind of cleaners? We dig up the spilled, caved-in dirt and rust with a pick and shovel. We clean it. If there are other extra jobs, we do them." (G23-Cleaning)

The use of technology in mining has led to a diversification and numerical increase in underground work groups. In this new era, which Brzezinski defines as the "technocratic age" (as cited in Bozkurt, 1997), the introduction of new technologies has led to the formation of a new type of worker. However, the number of new job groups in underground coal mines with the developing technology of neoliberalism is limited in underground mining, and this linearity is not seen in mining, which has a traditional production pattern. At the same time, there have also been changes in workload sharing between groups. One of the most important situations is the emergence of new status situations and higher status jobs in relation to the use of technology. This is like the difference in status between a shopping mall salesperson and a cleaning staff. Although the wages are minimum wage, the positioning of the salesperson may be different.

In mining, with the 2014 regulation, there is no difference between the salaries of underground workers. However, there are jobs that are perceived as superior according to the sophisticated technical features of the equipment used.

With the Soma accident, the technological transformation, the implementation of personnel monitoring and tracking systems and OHS rules underground, and the importance of training and certification in professional skills have led to some transformations in the types and culture of labor. In this process of transformation, there are continuities and discontinuities in job descriptions and worker culture. As discussed above, there are 10 labor groups in underground coal mining based on the division of labor.

As Koçak and Uygun (2011) indicate, the transformation of the employment structure from manual labor to mental labor brought about by technological developments has also had an impact on these groups of workers. In response to this

effect, it is possible to say that worker groups have three different typological characteristics in reference to the historical continuity of the job definition:

- Groups of workers with traditional continuity,
- Worker groups in which there is a transformation in the way the work is done with technical changes, but there is continuity in the job description,
- New groups of workers (previously undefined, non-existent jobs).

5.3.1.2. Type 1: Workers with Traditional Continuity

In the first type, which includes blasters and cleaners, it is observed that the traditional division of labor continues. While the job descriptions and duties of cleaners, which can be defined as unskilled work, continue in the same way, the only change in the scope of work of blasters, a job group for which certification was made compulsory even before the Soma milestone in underground mining, is the quality of the pharmaceuticals used in blasting. Pharmaceuticals that do not harm human health have started to be used. However, a blasting technology that is far behind today's technologies is still in use. In addition to the change in the content of the explosive material used, the development of information technology has enabled the rapid transfer of blasting data to the security forces. Apart from this, no other change can be mentioned.

5.3.1.3. Type 2: Workers in Transition and Continuity

The second type is the work that is continuous in terms of job description, with technical changes in the work content. Workers that can be defined in this category are preparers, excavation heads, and excavation spares, mechanics, electricians, augers, equipment makers, and banders. Even though technological changes have made progress in the fields of gallery driving and gallery opening, it has been observed that some sub-jobs have been outsourced to private subcontractors from time to time in the implementation of this technology in GLİ (public). Therefore, with the introduction of tunnel boring machines in public enterprises, a transformation was observed in the work content of **the preparators and chimney men** in public enterprises, whereas a continuity that is exempt from transformation can be mentioned for the workers working in private enterprises. With the

introduction of tunnel boring machines, the most important transformation is the outsourcing of operators and maintenance and repair personnel. With the introduction of hydraulic supports, we can also speak of a rupture and transformation in the **digger-fortifiers** sector, which is known to have a high OHS risk. The biggest impact of this technological rupture and transformation is the decline in the employment of workers in this line of work. In the case of mechanics, the increased use of mechanical devices in underground mining has led to an increase in their workload. The change and transformation in this work group is quantitative rather than qualitative. There is a continuity in the job descriptions and functions of electricians and banders-buttoners (switchmen and conveyor operators), which have also been transformed by the increase in mechanical devices. There has been no qualitative change in the job descriptions and content of the work of the **augers and equipment makers**, except for the advancement of ventilation technologies.

5.3.1.4. Tip 3: New Worker Groups

The third category is the "new" jobs defined by the mechanization process in underground mining. Within this group, we can **identify modern fortification masters** and **cutter operators.**

Table 5: Typology of workers

Typology of Workers	**Groups of Workers**
Type 1: Traditional Continuity	• Cleaners • Blasters
Type 2: Transformation and continuity together	• Preparers • Digger-fortifiers • Mechanic teams • Electricians • Augers and Equipment makers • Banders/buttoners
Type 3: New Workers	• Modern fortifications masters/Shielders • Cutter operators

5.3.2. Subordinate Superior Relationship

Taylor's (2004) concept of "scientific management" necessitated the emergence of a class of foremen who controlled the workers. This practice, which is based on the assumption that workers will not choose to follow instructions if they are not kept under control, is also found in underground mines, and therefore he argued for the need for foremen to control workers. It is thought that the working system and rules of underground mining are organized with a hierarchical arrangement like the military working system. In the underground mines of GLİ, military regulations and forced labor practices were applied for many years in the past, and some job titles such as "shift sergeant" continue to be used today due to this situation. Another reason for this can be considered as preventing employees from taking initiative and being active in decision-making processes underground with a strict hierarchy due to the high danger and risks of the work carried out in harsh working conditions where the struggle against nature is essential. It is seen that this situation has been taken for granted by the employees:

> *"The sergeant I'm instructed by. If there's anything I lack, I'll tell my sergeant again. We don't have a team. If we go to the pump, there is another friend with me, we take care of the pumps together. We don't work as one person, but as a team. To avoid any accidents or trouble. Or maybe he knows what I don't know, and we do it in cooperation. Some pumps make air. We take that air out together. Whether it's filling the water or not. One person cannot lift it, sometimes it is heavy. We lift it together or we pull it up together. So, we do it with two people." (G16-Digger)*

The control function of the foreman, or "sergeant" as it is called in our research field, is vital, as Laurence (2011) points out, especially in confined space environments where safety and productivity take place under challenging conditions, such as underground mines, where working conditions are harsh, and the work is inherently isolated.

Although, after the Soma and Ermenek disasters, workers have been granted the right not to perform risky work, if necessary, precautions have not been taken, and the right to disobey instructions, and even if a ground has been created for the transfer of problems experienced through union representation in OHS committees, the mechanisms for the participation of these initiative areas in production and management have not yet been established.

"In terms of working life, job security is more in the public sector. The public does not put you at risk, the supervisor here does not put you at risk. If you say, 'I don't have a position, I can't do that', they don't put pressure on you. Working life in the public sector is a bit more orderly. There is no slavery system in the public sector, which means it is comfortable, there is job security." (G7-Excavation)

5.3.3. Gender Issues in Underground Mining

As it is known, Article 72 of the Labor Law No. 4857 prohibits the employment of men and women of any age under the age of eighteen in mines and in underground or underwater work such as cable laying, sewerage, and tunnel construction. Therefore, the employment rate of women in the mining sector remains very low compared to many other sectors. However, women can be employed, albeit limited, in open pit mining and in some administrative-service branches. Due to the legislation stipulating that women cannot work in underground mines, this issue concerning gender relations has a categorical position that cannot yet be explained by patriarchal patterns. Although the topic of "gender" was not included in the scope of the research due to the legislation restricting women's labor in underground mines, the issue of women's labor and their participation in underground mining was occasionally mentioned in the course of the interviews. Remarkably, as discussed below, although the interviewees referenced conservative and religious perceptions, especially when defining the "meaning of work", they were also quite positive about the participation of women's labor in underground mining. While the difficulty of women's participation in jobs that still require muscle power was expressed, the view was expressed that women can also take part in some jobs that have become mechanized with technological innovations:

"Women could work in underground mines, yes. They could work on buttons. They could work underground in belt maintenance. I mean, maybe the mirror work would be difficult, but they could work in other departments. But there are things that require strength. He can't lift the mattress. When the pistons fail, you need to be able to lift it with manpower, I mean really lift it. So, what happens? You do it with machine power. You can do in 1 hour what you would do in 15 minutes. But they can do it. So, there is no occupation that women cannot do. I mean, there is no profession that I can say they can't do. I picture it in my mind. I wonder if they can do this profession too. They can. Women can do everything. As long as they are given the opportunity." (G33-Mechanic)

In addition to positive views that women can work in mechanized jobs in underground mining, there were also views that women may be more capable, especially in technical jobs:

> *"But they can do technical work. For instance, we have a friend at the computer, I believe that a female employee can do it much better than him. We have a friend working at the computer, for instance, I think a woman can do it much better than him. I think they are more careful. (G31-Electrician)"*

5.3.4. Work Styles and Working Hours: Shift Work System

Working hours at the Tunçbilek underground coal mines are applied over three shifts in groups of eight hours per shift. These are; daytime 08:00-16:00, evening 16:00-24:00 and night shift 24:00-08:00. The change of shift groups used to take place every two weeks, but after the Soma and Ermenek accidents, it has been implemented on a weekly basis. It is important to emphasize here that the shift system is not compatible with neoliberalism's maxims of deregulation and deregulation. Neoliberalism's definition of work excludes the shift system mechanism and imposes a flexible and unregulated work cycle on the workforce. In a sense, as Bourdieu (1998) points out, it creates a contradiction (ambivalence) with the neoliberal work regime in which the boundaries between work and private life are blurred and employees are always available, and this contradiction strengthens the hand of employees in negotiating with neoliberalism.

In the interviews, it was observed that workers preferred some shifts over others:

> *"I personally don't prefer the shift system at all, especially underground. In underground work, especially the tramp shift [24:00 - 08:00 shift] is very tough. When we first started working, we were on daytime for two months, so if I compare it to the situation when we were on daytime, the shift system is more difficult. Underground is a sector that does not accept absent-mindedness. For example, there are times when you can't sleep. Of course, they actually warn us, 'Don't come to work when you can't sleep', but that's not always practicable. Now we come back once a week, but back then we came back once every two weeks. Permission is in any case limited." (G4-Shiltmaker)"*

For many years, the evening shift has been called the "pasha" shift among mine workers. The workers we interviewed explained the reason for this by referring to parameters that can be considered "comfort" for underground mine workers, such as the ability to sleep in one's bed at night, have breakfast with one's children in the

morning, and take care of other work in the time it takes to get back to work. They stated that the shift was nicknamed "pasha" because it made this comfort possible:

> *"I have only worked in shifts for one month in my 10 years of mining work, and that was like in this way: When I first got the job, we had a chief engineer, our chief engineer said, 'Let him see the shift, let him see the bum shift, the pasha shift, let him go there.' He gave instructions like that. So I went to the bum shift, pasha shift for about a month, and then we went back to daytime." (G6-Electrician)*

The night shift has long been described by workers as the "bum shift". The questions we asked to understand the reason for this were answered by workers complaining about the lack of sleep at night, the inability to spend time with relatives, spouses and friends, and the inability to spend time with their families and children when they leave work the next day, as well as the inability to follow up on other work. It is understood that the label "vagabond" was developed to emphasize "not taking responsibility" or "loneliness" in relation to time management.

Working without sleep or in a way that leads to sleep disturbance is a common disorder among workers. As it is known, in the definition of a healthy/quality sleep, night sleep is considered biologically mandatory and 7.5-8 hours of sleep, not less than 4 hours and not longer than 9 hours, is considered ideal for adults. In cases where it is not realized, it is known that motor skills weaken, psychological-attention-movement-respiratory and other disorders occur (Algın et al., 2016). It is understood that the interviewed workers are also aware of these disorders:

> *"Shift work is more exhausting. For instance, the night shift. If you say to me, don't do any work, just leave that house, and come back. Believe me, my feet do not want to return here. God created the night for rest, for relaxation. So, whoever came up with this shift system..." (G7-Excavation)*

In the mining sector, although it is considered within the scope of productivity, profitability motivation is among the important reasons for production strain. In the study conducted by Yelboğa (2018) in Murgul Copper Mine, it was concluded that sleep deprivation and the shift system psychologically affect workers' lives, increase the risk of work accidents, and shape their daily lives between home and work in a way that does not enable them to do anything else.

"It's very difficult for the body to get used to it. There is also a lot of tiredness on the night shift. I switched directly from the pasha shift to day shift, and I had a very difficult time. We often come to work without sleep. Because we normally go to bed at 2:00 am and get up at 10:00-11:00 am. When we do something suddenly, we have to get up at 06:00 in the morning. So, we had a hard time for a few days. For example, most of the absences happen during the transition to the day shift." (GI5-Cutting Drum Operator)

5.3.5. Vocational Skill Acquisition Process

As elaborated above in the mining section, especially with the integration of new technologies, underground mining is an industry that requires technical knowledge and skills, and therefore skilled workers. As Foucault (2008) emphasizes, in the neoliberal labor regime, it is the responsibility of workers to increase their knowledge, skills and qualifications. In the neoliberal labor regime, where employees are responsible for marketing their own brands and increasing their human capital, the process of acquiring professional knowledge and skills is the individual responsibility of the employee. On the other hand, in underground mining, the social nature of this responsibility is still partially preserved, and the experience gained by each individual in the process turns into a human capital that develops within the team as a whole. Thus, it becomes ambivalent with the neoliberal work ethic.

It has been noticed that the process by which underground mine workers acquire their professional skills has diversified from the classical mining structure. Formerly, the system in which experienced workers passed on their experiences to newcomers had a significant weight and was the most important method for acquiring basic skills. It is also worth noting that this method has evolved into a function that connects practical knowledge/reality with theoretical knowledge. Currently, it has been learned that workers acquire skills through vocational courses, courses offered by companies or enterprises themselves, on-the-job training, and finally through trainings provided by manufacturers for the use of new technological devices that have started to be used underground:

"Mechanized digger operator. It used to be a cutting machine operator, but after we signed the ILO, the professions underground was reshaped. I also went to a workshop on this. There is a vocational qualification institution in Ankara. They called me as a cutting machine operator in the workshop they organized. There, we worked in such workshops for two years on the duties and authorizations of the titles, we saw how the operator should be. Then we

became excavation operators again. They generalized it." (G20-Cutter Operator)

Almost all workers in the field study reported that the most common way to learn vocational skills is through experienced workers showing new workers how to do the job on the job and sharing off the job in the ward, changing rooms or social activities outside of work:

> *"Experience... The biggest thing to gain in this mining business is experience. I will talk about the new workers. Our work is very heavy and very dangerous. Especially with us, a new worker is assigned to an experienced person, or they are assigned to experienced people so that they don't get into any work accident or touch anything they don't know. For example, our pressure in the supports is 300 bar. That is a pressure that can easily cut a person in half when held, a very high pressure. The smallest pin that he will remove there, God forbid, can cause his death. If not for you, it could be for the person next to you. That's why we especially advise our new friends if they are newcomers. We always give a person with him who knows. The biggest thing is experience, experience is what they can gain. We especially make sure that they don't touch anything they don't know. In other words, everyone here is already coming to their own department by coming to the workplace. They come by estimating the work they will do. So, the biggest thing they can gain here is experience." (G18-Mechanic)*

Employees also develop their skills through the manufacturers and distributors of the tools, equipment and tools used in the mine. In the process of purchasing or renting such equipment, the training of the personnel who will use them is usually included in the contract of the companies providing the machinery or services in question, with a timeframe defined.

Sennett's (1998) point that workers are under pressure to constantly improve themselves and acquire skills is also valid in underground mining. However, the limits imposed by nature in mining impose limitations on this race to acquire skills, which in turn can become a tool for negotiation between workers and the neoliberal labor regime.

Indeed, the pressure that Sennett mentions in educational processes aimed at acquiring knowledge and skills is felt less intensely by underground mine workers.

It is understood from the narratives of the workers that they enjoy the trainings provided by experts from foreign companies and that this process has become a positive memory in their minds:

> *"We were trained. Also, if I remember correctly, the system was renewed in 2014, new fortifications were introduced, and we were trained then. I mean, as there were new fortifications. The Chinese came, they gave it to us. Since we bought the products from the Chinese, they came, and they had an English translator with them. They were explaining, and the translator was translating from English to Turkish and explaining it to us. That's how we received training, for a short period of time. But the Chinese worked with us for 6 months. I mean, let's say we learned by seeing it ourselves." (G4-Shiltmaker)*

> *"For example, I entered as a digger. By the way, Slovaks are working, we are working with a foreign company. They don't speak Turkish and I don't speak Slovak. We got on well. They taught me about Dosko. I said, 'I want a contract,' they said, 'OK, let's arrange it,' and we got the contract. In the meantime, this Kulükar came. I immediately jumped on that too. When you open the file, I have 20-30 documents. Last year I applied for the last one... It's useless for me, but they had a course, so I went and took it. I can't stand it when there's a course. If I have time, I'll attend. Backhoe loader operator, then Dosko. You know, those things for tunneling." (G11-Monoray/Kulükar Operator)*

The worker's narrative in the citation above suggests that, in a sense, underground mine workers internalize this development rather than being pressured to increase their knowledge and skills. In this regard, the intensification of pressure on workers in the neoliberal labor regime, where workers are encouraged to market themselves and continuously improve their skills, as Foucault (2008) mentions, may take a softer form in underground mining.

CHAPTER VI

MEANING OF WORK, WORK ETHIC, EFFICIENCY AND CONTROL

6.1. Meaning of the Work

Underground mine workers' basic conceptualizations of the meaning of mining work are generally blended with feelings such as labor, labor, sustenance, halal sustenance, seeing oneself as a soldier fighting on the front line for the country, and the pleasure and happiness of contributing to the national economy. Moreover, as Bond (2012) points out, the contribution of neoliberal development policies to the ecological crisis, climate change, deforestation, degradation of nature and the increase in carbon emissions, especially with global climate change, is an important topic of debate. Green and Gambhir (2019) also point out that the global transition towards the use of cleaner and renewable energy sources has been limited by these neoliberal policies. In this respect, the compatibility of the attitude of underground coal mine workers with neoliberal policies on coal mining, which directly and negatively contributes to the increase in carbon emissions, is an important issue of debate. Thus, as exemplified in the excerpts below, it is seen that the interviewed workers' perception of "coal mining" emphasizes "domestic and national wealth" rather than environmental and ecological references.

It is noteworthy that these discourses are also part of a state propaganda widely used especially in the field of energy. On the other hand, whether the discourses are viewed from the field of religion or psychology, the impression is that they are the product of a state of avoidance/well-being related to the stuckness between neoliberalism and the value judgments of the miners who make sense of their work in terms of the struggle with nature:

"Labor, more struggle, more effort." (G1-Agustor)

"It is labor, heart, sweat, morality, halal income, life. In other words, it is a great halal earning for the people who give it its due. For a person who is a believer, I'm talking about it. For a person who doesn't believe, it is a full return for their labor. If you are really dedicated and committed to that work. Because you face death at any moment. Every moment. There must be psychological pressure. So mining is hard, it is a difficult craft." (G2-Mining Technician)

"That's a very different question. Coal, how should I explain it? What is the meaning of a miner? Well, it has many meanings. Mine worker, energy, energy for the future of the country... Economy. What it means to me is that I work here for a living, that's what it means to me. If I bring something to the country, that's what it means. That's what I think. It doesn't mean much else. I mean, if I can bring something to my country, if I can be of benefit, I come here to earn my livelihood." (G3-Mechanic)

"Priceless. Either you fought at the front or you provided energy to the state here. You have earned money. That's what it is for me. (G19 - Fortification - Shilt Driver)

The widely accepted profile of mine workers in Turkish society is that of a struggling, class-conscious group of workers who seek their rights and actively participate in labor protests. However, this perception was found to be overshadowed by other important meanings of work for mine workers in the fieldwork. The fear and anxiety felt in every shift between life and death triggers the religious aspects of the workers to come to the forefront, and thus, it has been observed that they try to cope with the traumas caused by possible death or disability by taking refuge in God and thankfulness as a coping strategy. At the same time, the religious-conservative discourse instrumentalized by the government, which is the bearer of neoliberal policies, should not be forgotten. It was frequently felt in the interviews that religious references have a very strong place in the discourses of the miners:

"For me, a mine worker means going to the grave alive, it is what it is for my children, for their livelihood. Every time we enter, there is an Ayat al-Kursi on everyone's lips. A verse of the Qur'an, a dua. That's how everyone usually enters. Because when you go in there, it is very unlikely that you will come out. We always get out, thank God, but a construction worker outside can work blindly, for example. He can see the dangers. For example, our top is closed, and our bottom is closed. In case of an explosion, the flame comes directly to you. For example, I had many work accidents while working on a cutting machine. Just as I was starting the machine, I hit a hard stone... A piece of stone hit my eye and I had to take a report for 10 days. I was at risk of losing my eye." (G20-Cutter Operator)

Some workers define mining work by making comparisons with other types of work. They stated that underground mining provides a freer working environment than any other work performed above ground. This uniqueness may suggest that the meaning of work is different from the meanings fed by neoliberal work culture. An underground mine worker emphasizes the uniqueness of his work and states that he works in an area of freedom away from the effect of alienation in the following sentences:

> *"Mining work is difficult at one point and enjoyable at another. Indeed, when you look at other jobs, our job is enjoyable rather than difficult. My friends say, I have never seen the working environment, the factory. We talk like this, I say, 'What are you doing?' He says, 'This is what passes through the belt, we take this and put it here. It's eight hours; take it, put it there, take it, put it there. It's not like that with us. After all, it's a working environment for six people. We do the planning of the work ourselves, we do the work ourselves, we determine the time we eat, depending on the work situation. It's not like that in the factory. The man says, 'You will eat at 12.00'. There is such a standard. Since we are a bit more out of the standard, our work is a bit more enjoyable. We can act according to our own planning. It is a bit more enjoyable." (G29-Preparation)*

In the process, miners' desire to embrace their identity and work as miners and pursue employment opportunities in other lines of work diminishes or disappears, while their attachment and belonging to their current job increases. An underground mine worker explains that he internalizes this loyalty and belonging through "habits":

> *"We really like mining anyway, I mean, we got used to it and the love has grown. At first, I thought that if I retired, I would leave immediately, I wouldn't look at this place; but as the days get closer, you get used to the environment, you get used to things... Now it is more difficult to work outside. For example, I used to go to the village to help my father, it's more difficult to work under the sun. We are used to being down like a mole." (G5-Cutter Drum Operator)*

6.2. Work Ethic and Values

As Fleming (2014) argues, the neoliberal business regime encourages competition and entrepreneurial behavior. This, in turn, involves the transformation of organizational structures and cultures in a restructured labor market as noted by Harvey (2005) and Sennett (1998), which is in line with Boltanski and Chiapello's (2005) views on the impact on power relations, employee autonomy and the overall quality of working life. One of the most important effects of this cultural

transformation can be felt in the changing work ethic and work values of employees. Nevertheless, the impact of this change and transformation caused by neoliberalism on underground coal miners seems to be limited. According to Sennett (1998), neoliberalism is characterized by its emphasis on competition, efficiency, and flexibility in the workplace, often at the expense of other values such as stability, employee welfare and social cohesion, while in underground coal mining this is one of the areas where neoliberalism has made concessions, and in underground coal mining workers are seen to work in teams rather than as atomized individuals. Kalleberg's (2009) assertion that job security and long-term loyalty have become quaint relics of a bygone era has the potential to be valid in many labor contexts, whereas in the relatively underground, the necessity of tradition and teamwork acts as a barrier to this transformation and change.

Srnicek (2017) demonstrates that with the aforementioned neoliberal transformation, workers' job security is uncertain despite the constant need to prove their skills and experience. Yet, contrary to Srnicek's argument, skills, and experience, which are necessary for the construction of values of trust, responsibility and solidarity in underground mining work, form the pillars of a highly valued work ethic underground, creating a protected space against neoliberal culture and can be uncompromising against neoliberal work culture. In particular, the view that neoliberal profit maximization, as pointed out by Bolton and Laaser (2013), has eroded the perception of morality in general, seems to be limited in terms of its impact on the perceived respect and work ethic of underground mine workers, especially among public sector workers.

In the in-depth interviews, workers were asked about their thoughts on the concepts of respect, responsibility, cooperation, perseverance, persistence, austerity, trust and honesty under the theme of work ethic and values.

The work ethic in underground mining comes to life the moment the work organization/and division of labor begins, and tasks are assigned in "orders". Miners are responsible for each other and carry out their work activities as fate partners. They try to survive in difficult, harsh, and risky working environments. Although the division of labor has changed with technological developments and the

individualistic impact of the neoliberal political spirit of the period has begun to be felt in underground mining, these extraordinarily challenging conditions make the need for work ethic and compliance with these moral codes' imperative. One worker gives the "process of getting permission" as an example where moral codes are crystallized:

> *"In the past, as I said, those workers may have been a little more oppressed, the pressures on them may have been a little more intense, but those people are more respectful both to their work and to the way they speak. When those friends came in, they would say, 'Chief, if you don't mind, I'd like to go on leave next week', whereas my friends now write the leave paper and say, 'Just sign this, chief, I'm going on leave next week'. In other words, while one of them has the perception of 'Whether you sign it or not, I'm going to go', the fact that the other one asks for permission shows that there is respect even in his approach." (G2-Mine Technician)*

Another worker attributes the fact that workers see each other as equal regardless of their position, title and seniority to common moral codes, and states that the starting point of animosity between workers is not differences in title, seniority, and similar differences, but deviations in moral codes:

> *"He should always see the other man as an equal, as a friend. I mean, I am talking individually, no one is superior to anyone here, only experience may be different, but there is no difference in rank underground. I mean everyone is a worker, everyone works here. When a new person arrives, they are told, 'You are a beginner, you do this. You're a beginner, you do this, you do that." Especially he should choose his colleagues well rather than the job. Because not everyone is the same. Some work very hard, others may be after shenanigans and shirking. Therefore, if he is a hardworking person, he/she may suffer a lot if he/she falls into such a group; if he/she is a shirking person, he/she may be ostracized if he/she falls into a hardworking group." (G4-Fortification)*

Moreover, the high potential risk of getting into difficult situations encourages workers to constantly watch each other's backs, solidarity and cooperation in underground work. The following sections attempt to explain these ethical work values through workers' accounts.

6.2.1. Respect

Based on Robert Blauner's (1964) conceptualization of "traditional respect" and "bureaucratic respect", "bureaucratic respect" in hierarchical and bureaucratic

systems differs from "traditional respect" in that it is grounded on the worker's position in the organizational hierarchy, his/her adherence to rules and regulations, and his/her ability to exercise authority over others. Among underground coal miners, both conventional and bureaucratic forms of respect can coexist.

There is a prevailing attitude among workers that defines respect as respect for the work done. This respect is about considering work important and taking it seriously. It fulfills a task that improves employees' commitment to work. Respect for each other is related to inner and work peace. A state of commitment combined with hesitation and moderation comes to the fore. Several characteristics are determinants of respect. Many characteristics such as age, personality, knowledge, work, education, honesty of coworkers can be effective in the development of respect. It is possible to say that the participants' responses to respect during the interviews were structured separately and, in a way to include these two forms of respect. A factor that gives respect to an underground mine worker, regardless of the work he does, regardless of his/her competence in his/her work, is the worker's dedication to his/her work:

> *"I mean, doing what you do, doing it exactly, respect for work. So, respect for your friends too. Five fingers don't make five, but some people have little knowledge, some do a good job, but instead of disrespecting them, for example, a person's head doesn't work very hard, he got in here through a torpedo or a person. I mean, some of them carry bags, they have the task of carrying materials, even if it is in our work, even in mechanics. Some use brain power, some use body power, that's how we do things. I don't disrespect them, at least let me put it that way." (G18-Mechanic)*

However, the unique values attributed to underground mining are also a factor in determining respect for the work:

> *"First of all, when we talk about respect, I understand respect for our work. First of all, you have to respect what you do. After that, you need to respect whoever oversees you. But if you respect your work first, the others will come one after the other. If a person has no respect for his work, don't expect anything. Don't expect anything from that person, that worker. One must first respect and love one's own work." (G19 - Fortification)*

In the following excerpt, a worker separates the work from personality patterns and defines the work itself as deserving sui generis respect:

“When we talk about respect in the workplace, I think we should respect the work, the work, the experience, not the person. I don't care about you as a person. I don't care what kind of personality you have in the current workplace. What I need to respect you for is what you can give me. If I need to respect an engineer, I don't care about his personality. I don't care if he smokes, drinks alcohol, does this or that, is good or bad. What can he give me in terms of profession, in terms of work? I don't care if the cleaner is good or bad. Does he clean the place properly? I must respect his work. Those at the top should also respect the work." (G20- Cutter Operator)

Likewise, in the G23-Excavation interview, respect was conceptualized as a whole, and it was mentioned that it does not matter what is in front of one to show respect if it is in one's nature:

“If he has respect for work, he will respect you. Now what I want to tell you is this: These four people have given us work, if three of us work and he doesn't, if you throw fifty shovels and he throws fifteen shovels, that man has neither respect for work nor respect for work. Do you understand? But I mean, this man is three men, four of us are here, we will finish the work, he is trying to do the work. If you say, "I have to work in the same way," this man already has respect for you and his work. I understand respect for work here." (G23- Excavation Excavation)

In conceptually, besides what respect means to workers, the questions of what respect means between worker groups, management, unions, and other actors in the Tunçbilek mines, which will be subjected to different breakdowns, and whether there is a difference between past and present, and if so, what the difference is associated with, gain importance. As emphasized, underground mining, whether it is carried out by conventional or fully mechanized methods, has a structure of strict hierarchical organization with strict procedures. For this reason, the understanding that respect is necessary for the order and functioning of the work is the dominant idea in the work environment and execution of the work. In addition, the issue of merit in mining is clear, if you are experienced in the work, if you know the mine, you are followed and respected, as summarized in the following statements:

“When I think of respect at work, I first hear respect for masters, respect for supervisors, respect for elders. (G3-Electrician)

"In the workplace - and it is the same there - nothing happens without respect. Your shift supervisor may be younger than you, but your shift supervisor has been educated, after all, he came to be your supervisor. You must show respect. If you cannot show respect, you cannot practice that profession. My assistant must respect me. If he doesn't show respect, you will

show your reaction, if not in one, then in another. When you show your reaction, if you don't get along, if you don't get along with each other, you won't be able to work there. Many people came and went, but they couldn't hold on. Those who were disrespectful to their supervisors, masters, or substitutes, those who did injustice could not hold on. The bosses don't come and check my work every day. I have a shift supervisor, there are three shift supervisors or production managers who are responsible for the coal. They follow my work. If I can't do the work they give me there, it doesn't really matter if I work there. I mean, do they admire your height or your hair?" (G27-Fortification)

Emphasis was also placed on the fact that respect has been on the decline in recent years due to rising salaries and exam-based recruitment. Spoiled with money and today's common reckless personality trait being carried to work were cited among the reasons for the erosion of respect:

"What comes to mind when you think of respect? Knowing one's superior, one's elder and one's younger. There are those who are arrogant to their superiors, those who are arrogant to their elders, and those who are arrogant to their juniors. This is what respect is all about... In the past, the level of respect was a bit higher... We got pampered, I mean spoiled. We saw the money, we got spoiled." (G7-Excavation Preparation)

In a sense, the above statements also provide clues that a different reading of the neoliberal balance created by the new regulations that consider the working conditions and personal rights of underground mine workers is made through value judgments.

Another dimension is the effect of the security of public sector workers on respect. While private sector employees have the fear of being dismissed because of a misbehavior, public sector workers have overcome this fear. Therefore, it is claimed that respect tends to decrease in public labor:

"In the past, there was an experience here, there were former workers. They were better at that. It's not good or bad now, but what can I say, brother? There were a lot of people who turned up their noses because they were working for the state. There were a lot of disrespectful people. There were many people who changed after seeing the money. There were a lot of people who didn't know what is small and big. There were a lot of upstarts. Thank God, I wouldn't go near such people anyway." (G15- Belt Worker)

6.2.2. Responsibility

In underground mining, the concept of responsibility is addressed in a broad scope such as performing the defined/assumed work properly and in accordance with the rules and ensuring the safety of coworkers while working. Cooperation is considered and evaluated intertwined with responsibility.

> *“Mining is a team job, so you can't do individual work in the mine. Because it is a team job, you are also responsible for each other. This is because a mistake you make can have consequences up to the death of another friend. It may save you at that moment, but it may cause the death of another brother or sister. For example, you may have seen a crack in the ceiling. We call it a junction, the main blocks are separated, pieces that have reached the stage of falling. A wooden wedge has collapsed there, you saw that wedge there, even if you cannot intervene yourself, at least report it to the necessary security unit. You didn't report it, you neglected it, and it fell on a friend's head on the next shift. God forbid, it causes injury or death." (G13 - Fortification)*

> *"Everyone has to do the work of the unit they are attached to. You also have to keep an eye on the friend you go with, you have to take care of them too. You shouldn't leave them in a lonely place. A stone fall from above, something happens, they slip. Even walking is difficult here. Now there is shilam [charcoal mud/liquid], that's where we usually go. The ground is wet, your feet slip when you step on it, there is mud. You also have to watch the man next to you." (G12-Mechanic)*

In additional to the generalizing understanding of responsibility, an approach that defines responsibility in terms of the area of duty and the boundaries of the role at work was also observed among employees:

> *"Responsibility is everyone's responsibility where they work. For example, if I am in the mirror and I am working in the chimney, the responsibility belongs to me. Whatever the shilt driver is doing, if he is going to carry out fortifications, his responsibility belongs to him. If we have friends who go to the pump shop, the responsibility for those pumps belongs to them. We have friends we call trainers. The responsibility there belongs to him." (G14-Excavation Preparation)*

> *"I consider it as doing and finishing the given work, that's the responsibility." (G16- Excavation)*

Another determinant of the boundaries of responsibility is the definition of work by a superior in the hierarchical chain of command in the work organization. This definition of responsibility is emphasized especially by private company employees:

"We do not determine responsibility ourselves. Our supervisors, shift supervisors determine it. As a master, if I am a master, if there are five people with me right now, I am also responsible for them, we observe them there, where we work, so that nothing happens to them." (G14-Excavation Preparation)

"The man called a master is responsible for the man next to him, for the material. That's how I thought." (G28-Excavation Master)

"The responsibility lies with the master. In other words, the master is responsible for everything that happens there, whether the work is finished, not finished, finished too early, or whether the person working with him has an accident. The master is responsible for everything. Because there used to be one shift supervisor in a shift, now there is only one assistant. It is very difficult to find him everywhere. In other words, it is impossible for the person here not to have an accident when he passes by. Accidents can happen. They say this there: If he is a master, they ask the master. If he is a substitute, they ask the master again." (G33-Mechanic)

It is evaluated that there are significant differences between the perceptions of responsibility of employees working in public and private companies and that employees working in the state define their responsibilities without going beyond the jobs written in their job titles and job descriptions:

"In the private sector you are like brothers and sisters, you know how to share, you share work, everyone takes responsibility, everyone puts their hands under the stone. It's not like that here, not everyone takes responsibility. Here, the work falls on whoever has a conscience." (G9-Blaster)

"Nobody wants to take responsibility. I mean, for example, a postmaster will determine something and very few people will aspire. Because no one wants to be responsible for someone else's work. My head without salt is my head without problems." (G18-Mechanic)

"Compared to the past, workers had a little more responsibility. Two generations. By the past, we mean the two generations I have seen. There's the generation I'm working with now, and then there's the older generation that I was trained by. The way that old generation was raised, punishment, reward... Everyone was afraid of sergeants. Everyone delivered the work on the spot, the engineer could ask for an account, he could raise the wages. He would reward those who did well. He could say, 'You stand aside today, you have no work, you are loyal to your job'. But there is nothing like that in the current generation. He gives you the job, you go, you tell the sergeant, you do it and you leave." (G20-Cutter Operator)

Due to the fact that underground miners are constantly working in risky environments, it is necessary to quickly assess the potential risks that are seen and

noticed during the performance of the work and to implement corrective measures without wasting time. However, it can sometimes be seen that workers exhibit a reactive attitude and approach to recognize and eliminate these problems due to the intensity and severity of underground work, which is also related to the lack of OHS culture and awareness. This may lead to the questioning of the conscientious dimension of responsibility as a work value among workers:

> *"At the workplace, this responsibility is left to your own conscience. All of them are defined one by one in the legislation. These courses and lessons are given. As I said, these are given to us in occupational health and safety courses. For example, when the people responsible for the issue arrive, they intervene, but there are problems that are overlooked here. You have seen this problem, you say, 'If I raise this problem, it will be on my head. I can't deal with it now' and you stay in the situation. This is a situation you must deal with within yourself, and no one knows about it. Maybe you saw it at that moment, no one else saw it but you. If you postpone it just because you say, 'If I speak up about it now, it will blow up in my face, never mind', it may cause another friend to get injured." (G13- Fortification)*

6.2.3. Solidarity

As discussed above in Neoliberalism and the Capital - Labor Conflict, Jenkins (2004) and Perreault (2013) argue that neoliberalism also affects workers' skills and negotiation power as a result of weakening regulations that protect workers' rights. This results in working for lower wages and less job security. As a result of this, tensions and divisions may occur between different groups of workers. In this context, it is important to see the effect of neoliberalism on the feeling of solidarity among workers in underground coal mining.

The value of solidarity was mentioned by all participants as the most important value that highlights the uniqueness of underground mining. Without cooperation, there is no way for workers to complete a shift in the uncertain and risky conditions of underground mining. It was frequently stated that solidarity is a value embraced by all workers:

> *For example, I can't lift this by myself. But when a friend says, "Hold this for two minutes and let's lift it," the man comes and lifts it with you. No one says it is none of my business. We lift it all together, we put it somewhere. He goes about his business, and I go about mine. He has work to do, and I go to help him. Because it's hard underground without cooperation. You can't do anything on your own. There has to be someone's reinforcement, support."*

(G32-Mechanic) "Everyone has what I'm talking about now. For example, it's not the man's job, but you asked him.

"For example, in that thing inside the foot that we call a shilt, for example, my place is very good. They gave me five shillings. The guy next to me has a bad place, they gave him four because he's bad. They gave him one less, but his place is already bad, they should have given him three. If I finish five and go to sleep, it's disrespectful to that man. Because he didn't finish. But I finished my place. The man is not obliged to help him, for example. Because he has finished his place, he is already exhausted. The man doesn't wait there, he goes and takes that man by the hand. Why? So that he doesn't get a bad name. A man is given four tasks, if he does two and leaves two, he will be criticized tomorrow. Or when distributing work. Everyone pays attention to this, that is, they help each other. For example, he either throws a pole or a piece of coal. This is the simplest, most obvious cooperation. There is always cooperation. As I just said, you go to help even if you don't like it." (G25- Belt Worker)

More experienced miners report that cooperation was more intense in the old classical systems of mining than it is today. One reason for this may be that new mechanization systems have reduced the importance of manual labor. However, the existing and potential hazards of the underground continue to exist. Therefore, in these working conditions, where life and death can be between life and death at any moment, the basis for workers to be able to rely on other teammates in the most difficult situations can only be possible through cooperation. In one interview, it was pointed out that cooperation is of vital importance not during the work itself, but in the event of a work accident:

"This was much more intense in classical one. Especially in the early periods when I worked at Park Technical. After doing one's own job, if there is another colleague who is having difficulty in doing his job, when you ask him and are told, 'Yes, the area he is working in is very troublesome, he is having a lot of difficulty, it is very difficult for him to finish in this shift', you go and start working with that colleague without saying anything to him, it is to help that colleague. When there is an incident, to solve that problem until the end of the shift is to help each other. In the event of an accident, carrying that stretcher from hand to hand to get that friend out is cooperation. I see deterioration in terms of helping at work, but I can say that we are still good at holding the stretcher when it comes to human life." (G2- Shift Technician)

As the quotations above suggest, it can be seen that "mechanical solidarity" as a "primitive" form, as conceptualized by Vaught and Smith (1980), continues in the case of underground miners who are engaged in dangerous work and face a life-and-death struggle at every moment, and that the neoliberal work culture is not yet fully

effective here. The tensions and divisions between the worker groups emphasized by Jenkins and Perrault were not seen in the underground mine within this research, and therefore, it is seen that the solidarity relationship between the workers in the negotiation process with neoliberalism did not weaken, but on the contrary, it continues to exist strongly together with the original conditions of the underground.

6.2.4. Persistence

The concept of perseverance is a word that describes persevering in a job and eventually achieving success. However, almost all interviewees, when asked about the meaning of perseverance, used it as a synonym for patience instead of "patience". This pattern of thinking can be considered as a reflection of workers' strategies to protect their own existence and psychology in overcoming the difficulties experienced due to the challenges of the work:

> *"It is a job that requires patience because you witness everything here. You see the rain, you see the wetness, you see the mud, you see the accident, you can't stay here unless you are patient. There have been some who couldn't endure." (G22- Excavation Progress)*

> *"Of course, there must be patience. Because the working environment is difficult. I mean, there were friends who started together a lot but couldn't be patient and left. Winter is another problem; summer is another problem. There are always problems. There is a cave-in in the mine. I mean, in these situations, we were caught in the fire, and this happened to us when we had just started. So, there are always difficult things. Patience is really part of mining." (G21- Electrician)*

Nevertheless, it was also observed that some workers conceptually positioned perseverance and patience as conceptually distinct from each other. They evaluated these behavioral patterns together, complementing and supporting each other, and made sense of them through underground working conditions:

> *"He's determined, brother. If you lack determination and effort, you can't be a miner. You must embrace the work so much... Otherwise you can't do it. You dig here, but on the other hand, you're struggling with nature. It flows there, it comes from there and so on. You have to do it with determination and speed." (G29- Chimney Foreman)*

> *"Mining is hard work. If we are not patient here, if we are not diligent, this work will be a burden, it will be very heavy. The working hours here are normally eight hours. But there is also the time it takes to get from here to the*

workplace and from the workplace back to the surface. If we deduct that, the working hours are not eight hours in total, they are shorter. Sometimes, depending on the situation, there are cases of early dismissal. We work for about four or five hours. Of course, we can't do this job without effort or patience; it requires patience and effort." (G6- Electrictian)

6.2.5. Contentment

The meaning of the austerity approach was defined as a religious value/belief and an expression of gratitude by all participants in the study except for one person, regardless of whether they were public sector workers or private company workers:

"Too much greed is not good. We are trying to feed ourselves. Thank God, we also get money, good money. No one objects to the money, but we don't object too much to the money we are not given. Because sustaining life is important. After all, it is a source of livelihood. In this world, we work to make a living. Otherwise, it's always rebellion, always rebellion... May God give a thousand blessings. The money we get is good." (G7- Excavation)

"I swear, I am content, thank God for the salary I get." (G11- Monorail/Shuttle Operator)

"I am always grateful and thankful." (G32-Mechanic)

The fact that underground workers compare the minimum wage, which they take as a reference point for themselves, with other workers in other heavy and hazardous lines of work above ground, also supports the contentment approach. In addition, comparisons of private sector workers with the unemployed and public sector workers with the private sector and the unemployed were encountered in all interviews:

"You must be content with less, I mean, here in this region, for example, in today's conditions, of course, we say thank God to be content with this job. Why? If I don't, I'll find it harder. And where does this show up? It is obvious in the livelihood of my house. Do I have any difficulties in this job? Yes, the mine is difficult. It's a difficult region. It's hard labor, but you are patient, you are content, you say thank God outside. When you look at the people outside, you feel a little bit better. Your organization is good, your salary is good, I mean, the man outside makes a living with minimum wage, you make a living with two minimum wages here. I mean, is there anything difficult about it, there is, but they have to make do." (G22- Excavation Progress)

"Human nature is such that if you had a trillion today, you would start to envy someone richer than you. If you had no account of your possessions, you would start to envy Elon Musk. So, this is the nature of human beings. I think it is best to be grateful for your situation, knowing that this is your nature.

You will be grateful for your situation. You will look at those who live in poverty, those who live in poverty, those who struggle with illness, and you will know how to be grateful. Thank God, I can provide for my children, I am able to provide for them, I am able to educate them, I am able to put pocket money in their pockets, I do not leave them lacking in anything. We are in good health, thank God. What more can I ask from Allah? Thank God, we are self-sufficient." (G13- Fortification)

Another expression of the perception of austerity may be the social environment in which they grow up and the judgments they make about working conditions as a result of the economic difficulties and desperation they have experienced in their personal history:

"I define myself as a contented person. I don't know why we define it that way. I know how to be content. There must have been difficulties in our childhood. Maybe because my father came from farming, maybe because we learned from our father to be content with less, maybe that's where contentment comes from." (G27- Fortification)

It is also possible to consider austerity as a perspective that people accept without questioning their current situation and that is used to legitimize the life they live. Indeed, one worker points to a negative aspect of austerity and emphasizes the importance of "dreams":

"I think that austerity causes one to become blind. So, I think a little bit of greed is good. So always a little bit more, a little bit more. Because I think this increases development in people, so I always aim for a little more. And I know my limits. I know that I can't ride in a Lamborghini today with this income group; but if I can ride in an Opel today, I don't hold myself back from dreaming of a Mercedes tomorrow." (G2-Mining Technician)

6.2.5. Trust

Although the concept of trust is often defined in daily life or in other lines of work as job security, quality of work, trust in oneself, public or private company workers are mostly workers who entrust their lives to each other underground and therefore define the concept of trust only as trusting their teammates:

"We trust each other here and that's how we go underground. Why? God forbid, in the event of a cave-in or an accident, we must reach each other. For example, if I didn't trust you, I wouldn't go down. I wouldn't work. Not if I don't trust you. Everyone has to trust each other here." (G19- Fortification)

"There was a cave-in, for example, three months ago in the summer. I mean, everyone there is working hard to get it out. If this man didn't trust, would he be doing these jobs now? I mean, everyone here trusts each other. I mean, after all, it's a life. I mean, he does his best." (G23- Excavation Worker)

"Between friends. We see each other as brothers because you work in the same place. If there is an explosion, if something happens, if there is a fire, if you suffocate from the smoke, you will die together. Therefore, we see each other as brothers. My friends and I trust each other at work." (G10- Excavation Foreman)

" You must trust your brother next to you because it is dangerous and hard work. Even if he is someone you don't like, you must trust him when you go somewhere. Because if something happens to you, he is the one who will help you, there is no one else to help you. When you come in here, you have to trust someone." (G11- Monorail/Kulükar Operator)

"This trust... The most important thing is trust. If you don't trust, if you don't trust the men working around you, especially underground, if you can't trust this man, there is a danger in your work. So, you have to trust the man behind you, he's my eyes now. Or the person who will warn me. If I don't have that trust, if I don't have that trust, I can't concentrate on work in peace and comfort. I also say, 'what if?', I think about it, and if I don't have trust... When you don't trust, you don't have peace of mind and your work efficiency is not good." (G17- Blaster)

When workers are asked whether they are trustworthy employees, they generally hesitate to make a self-assessment at first, but they explain that they are trustworthy in terms of the quality of their work or ensuring the safety of their teammates:

"I swear, most of my friends trust me. I should ask my friends about it. If I say it myself now, I'll sound like a smart ass. I don't know treachery. Whoever I go with, I try to work two more hours than my friend. I am not a burden to anyone, for example in my own work. God bless them, they say it too, though. Friends also trust me. Whoever I go with, they say, 'Let's all work together'." (G10-Excavation Master)

"They trust us, thank God, we haven't had such a thing, we haven't made any mistakes or flaws. They trust us because of our work and experience. I think they also trust us because of the correspondence between us." (G19 - Fortification)

6.2.6. Honesty

The value of honesty is used in almost the same sense by both private and public sector workers. Because it is thought that if underground work is not done honestly in the quarries, workers may pay a heavy price:

“For the miner, honesty shows the importance of the work. If a person is honest, if he doesn't lie, if his word is his word, everyone trusts him, everyone relies on him. I mean, if you are honest, you may have even saved the life of a friend there. That is, if you do your job properly, which everyone knows, who does what. Underground is like... There is a brother-sister relationship underground. If you are not honest, then it is bad." (G33-Mechanic)

"Honesty means to fulfill the promise. It means doing the given work, not necessarily with our supervisor in charge, as he describes it, that is, from where to where, and informing our supervisor. This is honesty. I mean, it is not necessary for him to come and check it, when you give him that confidence, the sergeant, the person in charge of us should say, 'Alright, if you say so, it is so'." (G8-Excavation Excavation)

On the other hand, it has been observed that there are differences in the interpretation of honesty between private company workers and public workers. While public employees emphasize the state or friendship, unity of fate, private company workers emphasize the value of working for the team performance not to decrease.

"Honesty in the mine is almost the same as trust. If you are not honest, people understand you immediately. When you are not honest, no one wants to talk to you much. How can they understand if you are not honest? For example, they can tell from the work you do. You work for each other, you clean from here to there, he cleans from there to there. You're pretty much splitting the floor. When you don't finish, the chief will say, for example, help that man. When it's like this every day, it's not honest. You must finish at the same time. Everyone gets the same money among the workers." (G24-Blaster-Public)

"Let's not look at it as a miner, but as a general worker... A worker will not betray, he will not betray his friend. I know that. Betrayal means, for example, you throw a rope, you don't tighten the end of the rope. Tomorrow that tie moves, it breaks, coal falls on someone else's head, for example. First you must do your job properly. If you don't do your work well, you will think that someone will get into an accident the day after tomorrow. That work will first make you feel good. Betray your friend, for example. 10 of us go shoveling; if I put my foot on the shovel, if I stand, it would be betraying my friend. You will work with everyone, you will finish your work, you will leave; in other words, you will not betray your friend." (G10- Excavation Master - Public)

"When I think as a miner, honesty is not betraying your job. If you betray your job, no honesty means anything. Whether you pray five times a day outside, go on Hajj, or feed the poor and hungry. Because if you earn money from here without the sweat of your brow, 70 million, 80 million people have a right. It's like saying I am honest, my heart is pure, I pray five times a day, but I don't pray, but my heart is pure. If you don't deserve the salary given to you by the state here, what is the point of being honest? If you betray your job, you betray everyone." (G22- Excavation Progress-Public)

"Honesty, how can I put it, honesty is to reassure each other. You are not going to lie. Everything comes back to him. The moment you become a master; you get along with your friends. Some friends... We have all kinds of people. Not all five fingers are alike. If you ask someone to lift this glass, they'll take their time. I can bring it in half an hour, you bring it in 1.5 hours. When that happens, they ostracize you because you are cheating. They don't like cheaters. (G26- Chimney Master-Private Sector)

6.3. Control in Underground Coal Mines

While underground miners use traditional work control systems on the one hand, new control systems, which are the apparatus of the work culture imposed after the 80s, have started to gain a foothold on the production efficiency-control axis. It has been observed that technological innovations have started to be used more intensively in mining sites after the Soma and Ermenek disasters, especially in relation to the issues of control, supervision, surveillance, and related production processes not to be interrupted. The impact of these changes on labor is ambivalent. On the one hand, knowing where the workers are working underground within the scope of emergency management gives the workers the feeling that they are safe in case of a cave-in, entrapment and similar possible accidents. However, the same development also creates pressure due to excessive control/continuous surveillance in the quarries, which are a relatively free workplace away from the eyes of the workers. Indeed, Lin et al. (2011) also point out that this pressure leads workers to alienation and at the same time they have to work under tension, stress and pressure due to control and surveillance, as well as increased concerns about worker autonomy, privacy and power relations.

Panopticon, an architectural design created by Jeremy Bentham in the 1850s for prisons, asylums, schools, hospitals, and factories, was metaphorized by Foucault to describe the concept of surveillance in modern society. Non-communication and non-interaction combined with constant surveillance spontaneously created a powerful and sophisticated coercion, control and, most importantly, an internalized consciousness of this control. Today's widely used security technologies are thought to have a similar effect, creating work environments that are restless, insecure, unproductive, stressful, and where organizational relationships are weakened (Al-Rjoub et al., 2008).

6.4. Mine Control and Surveillance Processes

In underground mining, traditional methods of control and supervision of workers and work are still predominant. Approximately half an hour before the start of the shift, workers arrive at the facilities with the shuttles provided by their workplaces, get dressed in their work clothes in the area where there are lockers and baths, and go to the assembly room or assembly area with their hard hats, head torches, oxygen masks and monitoring devices. (See Appendix-7, Figure 4) The shift sergeant organizes the teams to go underground within the framework of the instructions (assembly) previously received from the shift engineer. During this organization, it is also checked who comes to work and who does not. Workers arrive at the designated work area underground as instructed and organized by the sergeant, sometimes by monorail and sometimes on foot. The arrival time to the work area varies depending on which panel and which leg of the panel will be worked on in that day. For example, the closest panel can be reached in 20 minutes by monorail, while on foot it can take more than an hour. Postmasters and postmasters, who can also be considered as shift sergeants' assistants, are also selected from among the senior workers and help the sergeant to monitor whether the instructions are carried out because of the sergeant's guidance, as well as the progress of the work.

All the main activities performed (or not performed for various reasons) during a shift are recorded in the shift logbook and transferred to the next shift by the sergeant of the current shift and the shift engineer, if any. Control and supervision of the work is done in this traditional way. The amount of coal produced can also be monitored electronically by means of weighbridges located in the area where the belt systems are located. Three of the surveillance and control mechanisms described above were observed to be used in the field we examined: CCTV cameras, biometric system, and wearable technology.

In all workplaces, "tallying", the task of keeping track of who comes to work and who does not, has gradually been replaced over the last 30 years by electronic tracking and entry systems, such as computer software such as the “personnel attendance recording system” (PARS). However, this has been introduced as a new control mechanism in the last decade in some lines of business that operate in large

areas and dispersed work zones. It was only after the Soma and Ermenek disasters that these control systems were used compulsorily in underground mines. In Ömerler underground mine, a face scanning system is used. (See Appendix 7, Figure 12) In this system, once the face of the employee is recognized, the employee stands in front of the device and passes through all terminals by scanning his/her face:

> *"At the entrance to work, as you can see over there, there is a face reading. There is one here and one across the street, where the building is. I think there are three in total here. We read faces at the entrance. I guess until 16:30, after 16:30 there is no face scanning. For example, sometimes the service runs away, something happens, you can't make it. In that case, after receiving the task from the supervisors, we write a face reading paper. 'I came to work, I couldn't make it, I couldn't have my face read because it was past a certain time', we have the shift supervisor engineer sign it and put it in the box. It's the same at the exit; sometimes we forget to have our faces read because we leave late, then we have them sign a paper like 'I've checked out' and throw it in the box or have them read our faces at the exit." (G8 - Excavation) (See Appendix 7, Figure 8)*

The personnel tracking system of Ege Mining was carried out with traditional methods during the fieldwork period. In fact, while the company was using the finger scanning system, which is no different from the face scanning system, the company decided to replace these terminals with face scanning terminals within the scope of reducing the contact surface due to the pandemic. Another reason for this decision was that the finger scanning system was considered to be very inefficient due to the frequent presence of dirt, calluses and skin surface deformations on the hands of workers leaving the shift:

> *"Our scorecards are kept by our sergeants. Before, there was fingerprinting, and face reading. They were canceled due to the pandemic. Now our sergeants are keeping them. It is manual now. Finger printing was canceled due to corona. When the end of the month comes, our scorecards are taken out by the personnel and put in front of us, so that if we have any deficiencies, we can correct them before the salaries are paid. So, you see it with your own eyes." (G30-Electrictian)*

As is well known, the Soma accident occurred during a shift change and issues such as how many personnel were affected and how many workers were underground at the time of the accident remained unanswered for a long time. The most important reason for this was considered by independent organizations to be a break in the chain of tracing carried out by traditional methods, panic, miscommunication, and

the failure of the actual emergency plans to go beyond formality. After this period, electronic monitoring systems have become widespread in mines, but they are no longer a part of emergency procedures, but have found widespread use in audit-disciplinary processes.

> *"So, we call them chips, we call them chips, but engineers call them TEK. They are always on our waist. Wherever we go, they can see them on the computer. For example, it says Ahmet is over there. Mehmet is here, in this environment. If there is the nearest megaphone or phone, they can reach it. For example, if that signal is stationary, they can send us a vibration, a signal, like get up, or if you're in a cave-in, or what happened. At work, the shift supervisor looks at who came to work and who didn't. Because if the signal is active, he counts it as an arrival and puts a cross. That's how the scorecards are kept at the moment." (G25 - Belt Worker) (See Appendix 7, Figure 11)*

Although, as Stilgoe and colleagues (2013) point out, automation and the use of new technologies have reduced the need for human labor, leading to concerns among workers about employment and occupational safety, it has also been observed that workers in the Tunçbilek underground mining basin have accepted and even welcomed these surveillance and control systems in the context of OHS due to the impact of major mining disasters.

In general, the "chips" embedded in RFID systems that can communicate with the control room using radio frequencies are the tracking tools that workers must wear when going underground. These chips are about the size of a matchbox. The title, name, surname, and registration number of the wearer of this device can be tracked in real time on the computer screens of the control room and, in some cases, on the computer screens of groups including managers such as chief engineers and field managers. There is also an emergency button on these devices. When this button is pressed, it can send a signal to the control room. When such a signal is received, the control operator is authorized to send a vibrating warning to the device of the nearest team he follows underground in real time and instruct it to come to the fixed line telephone point. The worker who receives this instruction is responsible for immediately contacting the control center from the underground landline at the nearest point and reaching the worker who sent the emergency signal in question.

6.5. Technological Trainings and Changes in Occupational Health and Safety

Mechanization processes that started in Tunçbilek underground mining in the 2000s have added new tasks to labor processes. The new type of workmanship brings with it the need to become competent in occupational skills and to specialize in the OHS risks that may be experienced in the use of new equipment.

In order to meet these needs, GLİ and ÖEM initially received the trainings provided by the manufacturer companies as described in the supply contracts, and after the installation of the equipment, they gained experience through on-the-job training by the manufacturer's experts for a certain period of time. In the following years, specialized workers and technician groups who gained experience transfer this knowledge to new workers.

Due to the Soma and Ermenek accidents, OHS training has started to be given importance in the entire mining sector, especially after 2014. In this context, both enterprises, trade unions and universities are organizing large-scale and continuous training campaigns in this field.

In a sense, OHS training can be considered as an investment in the human capital of workers. Piketty (2014) argues that in a neoliberal work culture, enterprises expect workers themselves to make these human capital investments. Therefore, workers with fewer resources may have limited access to contemporary training in an increasingly competitive environment. On the other hand, in underground mines, vocational training in the use of new technologies, especially in OHS, is the responsibility of the employer and does not take place as Piketty suggests. Workers are not primarily responsible for these trainings and hence neoliberalism's relationality with underground mining is unlike its relationality with other sectors. The mining disasters had the consequence of reducing the effect of this process of linear transfer to underground mines, and neoliberalism had to make concessions in favor of workers with some legal regulations at this point.

For the proper, efficient, and uninterrupted use of technologically new equipment, workers are intensively trained by the companies producing the technology. In addition, local experts and engineers trained by the manufacturing companies can

provide such trainings as their knowledge and experience on mechanized systems are consolidated and their competencies are increased in the process:

> *"When we first started doing this thing, of course we had a training process. We took a course if necessary. We took a course in the first week. Then we went underground. Our engineers gave the training. We had engineers who came from here, they gave the training. At number one (the name of the training hall), also here. They gave it to Tunçbilek. The process is changing. We, 190 of us, entered here in 2011. At that time, we took a course in Tunçbilek at number one for about two months. After that, we went underground, where we were also trained. We had these shafts underground; these are the legs we worked on. We did things there. When we came underground, there was already foot dismantling. We started dismantling a foot directly from there, we gained some experience in foot dismantling and installation. We learned with the old workers, the workers working here, and we learned from their experience by going to them. Later on, separate courses were opened, and the certificate was given there." (G14-Excavation)*

> *"I went to Ankara from here. I received training in Ankara for 10 days. After that, the masters here showed us training in their working environment. This is how to do this, this is how to do that, this is the risk of this job. It is riskier if you work like this. Then our supervisors provide training, annual training, that is, we already have mandatory training on occupational health and safety. Even if you always receive the same training, it always adds something to you every year. So, you cannot say you are complete. There are always shortcomings." (G3-Mechanic)*

In the free market-oriented neoliberal business regime, global competition creates pressure to cut costs and increase profits. As Hilson (2012) points out, this leads businesses to prioritize notions of productivity and efficiency over the welfare of workers, ultimately leading to an increase in accidents and injuries in the mining sector.

On the other side, the issue of occupational health and safety in underground mining is one of the most talked about and tried to be solved in all times. Although changes in technology have had a positive impact, unfortunately, the rules of OHS in underground mining have been written in blood and are still being written. One point that should be noted here is that the dual structure that neoliberalism has established on underground mining has a serious negative impact on OHS. Technological changes experienced in OHS have not yet been institutionalized. In Türkiye, it is even a case that they have not spread to smal-scale underground mines, some of which operate illegally. Projects such as MİSGEP mentioned above can be given as

examples of projects aimed at increasing the OHS capacities of small-scale enterprises. On the other hand, it is difficult to say that the OHS capacities of large-scale institutionalized enterprises are also very sufficient. As a matter of fact, recent major mining disasters have occurred in those large-scale institutionalized enterprises. However, these tragic mine disasters have in some cases acted as a catalyst for improvements in OHS practices and may have the potential to introduce new regulations, as was the case in the 2006 Sago Mine disaster in West Virginia (Channell, 2011) mentioned above. Those improvements maybe recalled as improvements in safety regulations, compensation for injured workers and better working conditions. It can be said that, the size of the disaster has direct impact on the compromise in favor of the workers for the negotiation with neoliberalism.

A similar process to the one in the Sago Mine has recently been experienced in Türkiye as well.Following the 2014 Soma and Ermenek accidents, radical changes were made in the titles of worker health and occupational safety in underground mining in the same year and new regulations were introduced to prevent accidents. A worker explains the changes in OHS practices after the 2014 Soma accidents through an example:

> *"'Here it is, this is an oxygen mask, it lasts for 30 minutes, it's just oxygen. But when I was working at Park, before the Soma incident, we had a monoxide mask, it converted the monoxide in the environment into oxygen. But there must be oxygen in the environment. There is no oxygen, what am I taking that mask to do? He says, "You take the monoxide out of the environment." But now they give the right mask, an oxygen mask. So, the Soma incident really gave people some things. It gave workers in terms of salary, it brought OHS culture. There have been some revolutions after Soma. For example, this is a revolution; really, this oxygen mask is a revolution." (G9-Blaster)*

Semi-mechanized and fully mechanized systems, which are applied in underground coal mines around the world, started to be used in our country almost 60 years after 1940, when they were first used, just as the printing press came to our country 150 years late. The walking supports that accompanies fully mechanized production technology both increase production efficiency and allow workers to work more safely.

> *"The new mechanism is very helpful. Before we were working in the classical, my back was like a map. Coal was falling, stones were falling, my back was*

always scratched. Because he was working underground at an angle, anything that fell used to land on his back. I used to go to the hot springs, the old people would say, "Who tortured you, who persecuted you?" My back would always be scratched like this. Trees used to fall; stones used to fall. Now nothing falls from the fortification. Because the fortification is big, it surrounds the whole place, nothing falls (G10-Excavation Fortification)

In addition to the use of tracking devices with RFID features within the scope of emergency management underground, it has been observed that the necessary opportunities for the use of personal protective equipment suitable for the work performed have started to be provided to the workers more widely than in the past. However, it is thought that the supervision of the correct and regular use of such equipment is insufficient:

"But I put it on the belt. ... It's a tracking device. It's very important, actually. When you go underground. For example, I'm not going underground now, is it necessary? It's not necessary. Is it an obstacle? Sometimes it is an obstacle. How? When I'm working, it gets stuck left and right. But I wear it all the time. It's become a thing with me, I've adopted it. I mean, I adopted it with the recent training. For example, we have shortcomings, for example, we don't wear knee pads or leggings. Actually, they have to be worn, they are compulsory. But what does it do? I don't wear them because they hinder me too much. But after all, we work in a metal-heavy environment here. If you trip and hit your shin, the tibia is the most sensitive area. When you wear that knee brace there, your risk of work accidents decreases. When you don't wear it, it increases." (G3-Mechanic)

In recent years, it is stated that improvements and new tools have been introduced in terms of worker health and occupational safety in underground quarries, gallery roads and production mirrors:

"Our supervisors used to tell us about occupational health and safety, 'If you fail the exam, go to the accounting office and get your account cut', 'Then you will learn this job'. I consider myself a bit experienced. At that time, I did a lot of first aid and so on for my friends. Something comes into force; they take it out. I mean, by previewing. For example, they had the escape ropes tied to the stove, they took the escape ropes out. The oxygen was cut off, the electricity went out, the generator broke down, they did something with an air machine. Every 50 meters, they connected air stations. So, it became a little more modernized. It happened a bit after the Soma incident. 301 miners were martyred in the Soma accident, and after that they gave a little more importance. I mean, in the past, these were not given importance. There were still accidents and deaths, but not so many. It changes from year to year. They renew the procedure, they renew the equipment, they say 'How can we do this if this happens? Let's take precautions', in other words, they renew it every year. (G10-Excavation Master)

Training courses on Occupational Health and Safety, which have expanded in number and scope compared to previous years, have started to be given intensively by employers. Thanks to these trainings, it is aimed to reduce 'risk hunger', a concept that describes the perception of workers that nothing will happen to them and that work accidents will not happen to them. It is worth mentioning here that, as Quinlan and Mayhew (1999) point out, in the neoliberal labor regime, OHS is the responsibility of the employees rather than the employer. However, this is not the rule in underground mining.

6.6. Production Efficiency

One of the most crucial criteria of efficiency in production is performance indicators. Espeland and Sauder (2007) point out that in the neoliberal work culture, performance is often evaluated with strict criteria and indicators and that this evaluation increases the pressure on employees. The difference in the application of these performance indicators between private and public enterprises is also an important phenomenon. The division created by neoliberalism between the employees of the two institutionalized mining enterprises in the research area, namely GLİ and ÖEM, is more evident among private company workers than public sector workers, especially in terms of productivity. However, even this apparent difference becomes ambiguous in some cases and the specific conditions of the underground can impose its own line on the issue of productivity. Production efficiency forces the desire to really push the limits of production even in private firms to be kept at a certain point due to possible accident risks. This is another area of negotiation between neoliberalism and underground mining.

Efficiency in production is an important concept for underground mine workers, and they express that they are happy when they see the rewards of their labor in tangible terms in the coal flowing on the belt:

> *"When you are producing, you feel joyful. Because producing something gives you joy. For example, I am a cutter, not a fortifier. But I like to take the coal from the fortification, the flowing coal. Because of the flow of coal, that production... For example, when the work is finished, while others are waiting on the sidelines, I volunteer to take the coal. Because I like the flow of coal, I like the production. I always ask to watch, "How many tons, what is*

the tonnage?" I guess there is also competition, competition for production." (G5-Shearing Drum Operator)

In particular, the general perspective of workers working in private enterprises was observed to be that by ensuring production efficiency, employers win and thus guarantee the payment of their own salaries. In the case of public sector workers, the importance of working efficiently is replaced by the idea that since the employer is the state, the whole public has a right to the money spent here:

"If we mine coal, this company will survive, pay our salaries, pay our friends' salaries. If there is no coal, they will still pay, but if the company wins, we win. Right now, we have two legs. In one shift we have about 800 tons, 900 tons, 700 tons. If the coal comes out, it is good for us. As I said, if the company wins, we win. We don't compete between shifts, there is no competition. But if the coal comes out, our company will survive, we will get our salaries. In other words, if we win, we win." (G28-Excavation Foreman-Private Company employee)

"As people who eat here, we would of course like to be above the quota, not below it. I mean, the institution we work for, after all, is a state institution. It doesn't matter if it is the private sector. Of course, we think that production will benefit the state. I mean, we do not want this institution to make a loss, we want it to make a profit, so that this can be repeated and continue." (G6-Electrician - Public worker)

In addition to technological investments and the introduction of new machinery, employers are also introducing bonus systems to increase production efficiency, but the geological formation and conditions of the underground can often pose serious obstacles to achieving the desired levels of production efficiency:

"There is a certain monthly quota, if you mine this much coal. This is reflected as a premium. We are told that if you mine this much coal per month, you will be paid an additional amount of money, a premium, such as 200-300 liras or 400 liras. Accordingly, people try to work hard. But this has not been happening for a long time. Because there is a bit of pressure, the fortifications are flattened due to too much pressure. Now we are trying to save them, we are trying to lift them. Maybe friends have mentioned it. There is a problem right now, we have been dealing with it for a long time. The importance of production seems to have increased a little more. Because our superiors are constantly changing, they give us directives saying, 'Do this, do that'. Of course, we try to do it accordingly, but sometimes it's not possible downstairs, it doesn't allow it. So, we make efforts accordingly." (G8-Digger)

It has been observed that there are differences in absenteeism between public and private sector workers. One of the reasons for this is that even though the physical

fatigue of mining workers has been reduced with the change in technology, there is still a problem of adaptation to the working hours in the shift that is passed on the transition days due to shift systems and absenteeism:

> *"Because we normally go to bed at 02:00 at night and get up at 10:00-11:00 at night. When we do something suddenly, we have to get up at 06:00 in the morning. So, we had a hard time for a few days. For example, most of the absences happen during the transition to the day shift." (G5- Cutting Drum Operator)*

In addition, another point of difference in production efficiency is that due to the production pressure that the private firm exerts on workers, requests for leave based on fatigue cannot be voiced as easily as in the public sector. The flexibility shown by supervisors in leave requests is considerably lower than in the public workplace where union rights are more established:

> *"When we take leave, our priority is of course the sergeants. That is, the sergeants with our supervisor. We tell the sergeant, "Brother, I have a job, or my supervisor, I have a job, I have a job today, sometimes, for example, when you have an urgent job, you can call and tell them, or you can tell your friend or close friend next to you. It gives an impression in this way. This is the self-confidence that the public sector gives. There is no situation where I hesitate. If it were private, one would inevitably hesitate. Because as I just said, he will be scolded. When he comes the next day, he will hear an attitude. That's what the private sector gives, so that's why, the comfort that the public sector gives." (G22-Excavation Progress)*

In this context, as Bishop and Green said (1995), neoliberalism's assumption that the private sector is more efficient than the public sector in terms of managing resources and providing services has made the transfer of public resources and services to the private sector the most important feature of neoliberalism. This transfer process, together with the structural adjustment policies in Türkiye, has resulted in the privatization of large public enterprises such as iron and steel enterprises, petro-chemical plants, and also mines. Thus, by emphasizing the concept of efficiency, neoliberalism has reinforced its hegemonic superiority by strengthening its hand in negotiations over both public and private company workers in the underground mining sector.

6.7. Impact of Technology on Productivity

It is a common assumption in all interviews that changes in underground coal mining technologies have led to increased productivity. From uninterrupted production and increased production to the protective feature it brings in the field of occupational health and safety, it is stated that there is an increase in productivity in the mine in many areas:

> *"Before, there were classical settings, there was always body power. That's what they tell us about. I am explaining the thing here. The man (retired workers) says that everyone works like this. They say everyone works on our fortifications. Because they say, he tells us himself, that everything we did was with body power. He says we used to dig the coal directly. We have cutting machines; we have walking supports. We don't have such places where we can fortify the top and the ceiling. That's what the old people tell us. They even said I would work now. Let me say that I think mining has progressed. Because why? Everyone has gained experience. Whether its professors coming from outside or our engineers. I think mining has improved more than it used to be. It has developed more technologically. That's why, for example, if 500 tons are mined in a shift, now 3,000 tons are mined. Technologically it has advanced. This is knowledge, skill, learning. As it grows technologically, it gets bigger and bigger. For example, other places are different. Production is different, for example. What happens? In the future, in the coming years, if we are fortunate enough to see it, maybe other different machines will come here. I mean, if a machine has a defect, could the man overcome this defect and make further development? That happens." (G19- Shilt Operator)*

The positive contribution of innovation and change in mining technologies to productivity, occupational health and safety was mentioned many times during the interviews by almost all participants. However, in addition to these contributions of technology to productivity, the fact that the workflows in the operation and production processes of the fully mechanized system are sequential processes causes the entire production process to stop in case of any incidental situation. This can lead to the loss of the flexibility provided by previous classical production systems, which enabled groups of workers to continue independent production within the flow of the work process. Garrett and his colleagues (2017) assert that neoliberalism has revised the physical design and organization of workspaces, producing new spatial forms that reinforce flexibility, competitiveness, and entrepreneurship. Open-plan offices, co-working spaces and even virtual workspaces are examples of these new spatial forms. On the other hand, the modification of these new spatial forms to underground

mining encounters spatial limitations due to the unique nature of underground mining. The unique conditions and production mode of underground mining cannot provide the workspace in question. However, more rational and productivity-enhancing methods of the working environment are a key concern of the Private Mining Company.

The emergence of these conditions' points to the fact that underground mining is a unique type of labor. Because, while on the one hand, neoliberal market production expectations are to be met with maximum efficiency, on the other hand, increasing the production efficiency by pushing the limitations of nature with technological developments shows how there is a dependent fragility even in a very ordinary situation such as the ground play of technological new systems that can be experienced underground.

> *"Mechanized is a plus for the institution I work for in terms of cost. You can do the work with 10 people in a mechanized system, whereas you can do it with 100 people on one leg in a classical system. The safety of the worker is higher because you work in a completely closed environment. No matter how underground you are, you are working under mechanized equipment with a lifting capacity of 700 tons. That's the mattress you see in the foreground. There are 65 of them in our panel, lined up, side by side. It is less risky, it causes fewer accidents, it enables faster work, it enables more production, it increases productivity; but it does not lead to mistakes. Mechanized is like the links of a chain. Classical is not like that. In the classical, you deal with the failure in the area where you have a problem, and the work can continue in the rest of the area; but not so with mechanization, that is, when one of the links of the chain is damaged, the whole system stops. If one of the supports fails, if you can't run it, you can't run the whole system, you can't operate it. This also has such a disadvantage. "(G13 - Fortification)*

The inability of underground mine workers to keep up with the production speed of the fully mechanized system from time to time leads to an increase in production pressure on the workers. For this reason, a new pattern emerges in the perception of work of underground mine workers with the replacement of production, which has been experienced differently from the workers in other lines of work that have been producing above ground for many years, with technologies that can relatively challenge nature and the limitations of the available production technology. Perhaps for the first time in their working lives, workers are confronted with the effect of alienation from work. It is almost like the fiction in Charlie Chaplin's movie "Modern

Times" is also seen in underground mines. An alienation that desensitizes workers who perform fast and piecework-based work to their surroundings and sometimes shatters the perception of the integrity of the process can occur. This situation reveals the alienating effect of Boltanski and Chiapello's (2007) neoliberal work culture that prioritizes competitive advantage and efficient production.

A worker describes this effect as follows:

> *"Having the belt and the mechanized foot made it easier for people in terms of labor. But this also happened: They want to pit us against the machine. There is a belt, it goes two meters per second, it goes round and round, sometimes I don't even notice it going; but my supervisors want me to catch up with that belt, they want me to be a machine. There is this too. Okay, there are benefits, but there are also disadvantages. I cannot keep up with the machine, I cannot be a machine. I am a human being; I also have power... But unfortunately, I hear from friends. I have friends working at Tofaş, Fiat. They measured how many seconds it takes to assemble a door; 25 seconds. In 25 seconds, you have to install the right door. 4 doors, 25 seconds, that's 100 seconds. He calculated my 8 hours and wants me to install these many doors on the car." They have made people compete with machines. The machine has made things easier; it is very good; but they want me to obey the machine." (G9-Blaster)*

This worker's account shows that the alienating effect of neoliberalism can occur not only between the worker and the commodity produced, but also between the worker and the means of production.

CHAPTER VII

DEUNIONAZIATION AND ORGANIZATION

7.1. Labor Relations and Trade Unions

The union representation in terms of labor relations in underground mining in both GLİ and ÖEM is the Mine-Working union affiliated to the Confederation of Turkish Trade Unions (Türk-İş). Other trade unions have so far failed to organize in the mining region. For this reason, since its establishment in 1958, Mine-Working has been actively involved in labor relations in the GLİ facilities. All the interviewees have definitely been a member of Mine-Working union once. Of the 805 underground mine workers in the field study population, 778 were still union members at the time of the interviews.

Within the scope of labor relations, the issues of wages, overtime, fringe benefits, union organization, the meaning of the union, the structure of the membership relations established with the union and the function of the union, and its change have been tried to be understood through the experiences of workers from the period when they started their working life to the present day.

Moody (1997) underlines the historical significance of mining unions in defending workers' rights and safety. Harvey (2005) also states that under neoliberalism, where individualism is promoted, the individual is prioritized over collective rights and workers lose collective bargaining power. Therefore, the balance between employers and workers is distorted in favor of the employer. Locke (2013) also mentions that the trade union movement in general is under a neoliberal siege and says that de-unionization is a consequence of this.

In addition, issues such as the effects of today's political climate characterized by privatization, de-unionization, precarious work, etc. on workers' working life and

relations, the structuring of the public and private sectors on this political ground, and the union's response to developments were also examined in the interviews.

> *"Since I was a child, they have been saying that the GLİ enterprise will be sold, that there will be privatization, but still nothing. I am 42 years old now. If we look at the recent price increases and monopolization in the market, it is very negative. Privatization is negative. Especially critical points should be in the hands of the state. Look at sugar factories for example. They can raise prices as they see fit. Coal is the same. Imagine that every part of coal is privatized. Right now, we have a private company working here, paying 2100-2200 liras for coal, while our state pays 1380 liras. It is the same product. The company's salary is a bit lower; we get a higher salary. The working life in the public sector is a bit better. There is no slavery system in the public sector, it is comfortable, there is job security. You feel a sense of security. For example, you can buy a car, you can buy it easily because the state is behind you. In the private sector, you don't know what you will be tomorrow, you can be thrown out tomorrow." (G7- Excavation)*

In general terms, as embodied in the G7-Excavation meeting, the most important difference between the public and private sectors is still job security. While public sector workers do not have to worry about their employment contracts and related living standards, this is replaced by uncertainty in the private sector. Under the conditions imposed by transformation, unionization is seen as an important element of belonging and trust among private company workers. At the time of the interview, the newly launched ÖEM company had just signed a "collective labor agreement" (CLA – *TİS: Toplu İş Sözleşmesi*) with the Mine-Working union. Therefore, the CLAs that workers had signed with their previous employers were invalidated. The new CLA signed by the new company with Mine-Working is radically regressive in terms of worker gains from the previous CLA.

> *"Now it's like we're back to work, we have zero everything. We have zero union rights. Right now, we have no union rights. We only have social and food allowance. Of course, we started from scratch. No one has a permit. One of the things we needed the most was a union permit. It was a must, an obligation, to have a union permit. So, there he could say to the employer. OK, you have bought this place, good luck to you. We want this and that, but you didn't give us this. You must give us this. That is the union's right. (G33-Mechanic)*

As Kayagil (2018) notes, sectoral distinctions in collective labor agreements (CLA) such as public-private and service-industry can lead to differences in wage levels, social benefits and working conditions. Consistent with this finding, the gains of the

same union for workers in the public enterprise have led to the establishment of workers' rights, which are defined in great detail through ongoing CLA renewals. Significant differences have emerged in the rights of employees of GLİ and ÖEM due to different negotiation performances of the same union.

> *"For example, the same union takes care of GLİ and takes care of us. Now, there is a huge difference between the rights it gives to GLİ and the rights it gives to us. OK, the raise is different when you get it from GPP, of course it has a stronger hand when you get it from the state, but when you get it from the company, it is whatever the company says. This is the gap. You are the company, I am the head of the union, for example, I say I want this and that, I want this and that raise, I guess my brother says that's it, if it suits him. I say to you, I want a 500 Turkish lira increase in a man's wage, for example. I say, brother, 150 liras, if it suits you. Because there is a gap. But in the same way, when he sits at the table with GLİ, he can say, "You are GLİ, I am still the union president, I will not go lower than this. But he can't say that to a plant manager, I guess there is no such imposition, because this is evident from the announced increases, it is obvious. Because while the GLİ workers receive 12000 liras, 11800 liras today, we receive 9000 liras. There is a 2800- 2900 lira difference. But we do the same work, same eight hours, same shift. We bring food, we mine the same coal, we work in the same licensed area. The licensed area of GLİ is the environment we work in. The men buy three tons or six tons of coal per year. The man sells that coal and converts it into cash. There are such differences. The same union defends it, that's where it comes to. They are also affiliated to Mine-Working and I am also affiliated to Mine-Working" (G25-Belt Worker).*

Sachs and Warner (2001) and Bebbington (2012) mention income inequality both between countries and between mining companies as one of the manifestations of neoliberalism in the mining sector. One reflection of this income inequality is the income imbalance between workers in different countries and even in different companies in the same country.

Differences between the public and private sectors such as wages, fringe benefits, social rights, leaves, physical conditions, and treatment of workers are also mentioned by the interviewees. As in the quotes from G25 - Tape Runner and G20 - Cutter Operator, the conditions of the sectors relative to each other are used as the main criterion determining the good/evil/progress/backwardness in the sector. This situation develops an understanding of being a public worker among private sector employees and being grateful among public sector employees.

In addition to the differences mentioned, another striking issue is the awareness of the benefits of public provision of services or goods to citizens as a structural objection. Providing purchase guarantees for the goods and services of enterprises transferred through privatization eliminates competitive conditions even under free market conditions. As in the case of the guarantees given to public-private partnership projects, public resources are transferred to these actors through various methods and citizens' access to these goods/services becomes expensive. When the benefits of privatization that are used to market privatization to the public are combined with the negativities experienced, it takes on a meaning that should be avoided consciously or unconsciously. The expressions used by a worker when talking about the advantages of working in a public enterprise and thus his preference for the public sector in the mine are interesting:

> *"You get bonuses, milk money, yogurt money, underground additional compensation. After that, contractual differences, clothing. In other words, the possibilities of the organization to satisfy the worker in material and moral terms are very different. In this respect, I mean the organization in general, in its general functioning. There are guesthouses, holiday villages, vacation hotels. It makes these places available to its workers. These are very good things. It does these things; it pays for all of them. As a union, he gave us the right to unionize. We have union rights. We have bathrooms, and transportation. The shuttle service picks you up from your home and brings you to the workplace. When I leave the workplace, I take a shower in the hot water, in the hot baths, I put on my clothes. He put a tea stove in the baths so that people can drink hot tea after they leave work. So that they can supply their bread, water and other things. In that respect, the institution is definitely 10 out of 10. Say that you are sick, that you are uncomfortable today, that you have this ailment, and they will send you to the hospital by ambulance. It doesn't give you a job. In that respect, there is absolutely nothing wrong with it. I mean, the work aspect is one thing, the communication with the worker, the sociability aspect is another." (G20-Cutter Operator)*

7.2. The Dynamics of Unionization

During the interviews with the workers, it was anticipated that there would be problems and hesitation in answering union-related questions due to the political environment and the established socio-cultural, managerial, and economic dominance. However, all interviewees were very open and detailed in their responses to the set of questions on union-related issues and actively participated in the in-depth interview. One reason for this is that mining is traditionally a pioneer in the

labor movement in Türkiye, and that the consciousness and awareness brought about by the tradition of struggle, albeit distorted, is a reaction to the neoliberal work culture that has increased its influence especially in the last 20 years. The other is that among all public-private sector unionization levels in Türkiye, the mining sector still seems to be more alive in quantitative-qualitative terms and experiences intense union relations. In Tunçbilek, especially for public sector workers, union membership is perceived as an obligation. As soon as they start work, all workers immediately/naturally start their union membership.

> *"Of course, I am a member of the union. If you don't want to waive your union rights, you must be a member. For seven years. Since I came here. There was no union membership in the factory I worked in before. Because we worked in the private sector, the boss would say that if you became a union member, he would terminate your employment contract. Because you are a union member, you benefit from union rights." (G3-Mechanics)*

The historical union experience and widespread participation in the mining sector seems to have created a similar tradition in terms of membership tendency in the private sector. Although the union is positioned behind its performance in the public sector, its necessity seems to be beyond dispute:

> *"I am a member of the Mine-Is Union, I used to be. We are unionized. We are unionized again, but I think our union made a contract for one year because it was just established. We didn't get bonuses, but they said we would get them next time. That's what they promised us. (G28 - Excavation Master)*

Another change in the sector brought about by IT and technological developments concerns the process of union membership and the collection of dues. In the past, union membership had to be done through a notary public, whereas in the new system, workers can join or terminate their union membership through the e-government system without leaving the workplace. A similar technological convenience was observed in the payment of union dues. In the past, dues were collected in cash by hand. With this method, all workers at the mine and union representatives would meet face-to-face at least once a month. In the new situation, however, dues are paid through automatic deductions from salaries without the need for workers to visit a union representative or branch office.

Likewise, while private sector workers pay their dues automatically from their salaries, ÖEM, which came with the takeover, decided that workers' union

membership dues would be covered by the firm. This development is considered to be a result of the fact that the development of information and service technology facilities has already differentiated the payment of union membership dues from the classical forms of union membership dues, and that the private firm can prevent such a union affiliation and even present it as a generosity and paternalistic indicator towards the workers in this sense. Even leaving aside the fact that this strategic approach developed by the TEC is presented to the workers as an achievement by the union, it is thought that the situation itself may lead to the hegemonic transfer of power to the employer in the defense of workers' rights in the following processes, in the working relations established by the workers with the employer, and the loss of potential grounds for struggle:

> *"They used to deduct it from the salary. But now that the system has been switched to this new company, they told us that they don't deduct it from us anymore, that the employer covers it. They told us that the employer covers it, so they said they don't deduct it from us. I don't go to the union unless I must. It's on our way, but we don't have much to do with it." (G24-Barutçu)*

In order to benefit from the opportunities provided by the union, workers become members as soon as they start work. However, the change of employer also has a direct impact on workers' access to union benefits and even union membership. Standing (2011) argues that the restructuring of work and organizations created by neoliberal reforms also deepens social inequalities and has the effect of worsening workers' rights and working conditions. An example of this is the situation of ÖEM workers.

In particular, new ÖEMworkers who have recently experienced a change of employer have renewed their union membership end masse in order to protect their labor rights and benefit from the CLA:

> *"There was a mass unionization. For example, I've never heard of it, I've never seen it, I've never heard anyone say that they don't want to join a union, I don't want to be unionized. Because nobody has said it, nobody will say it. Why not? Here, a certain amount of money will come to you, and they will make a business out of it. For example, right now he gave us the difference for mastership. 400 liras, for example, will be charged to me right now. If I wasn't a union member, the union would have bought me something." (G25 - Belt Worker)*

Now, the only way for workers to obtain the gains from the CLA and the union struggle is not only by becoming a union member. In 2012, an amendment to Law No. 6356 opened the way to benefit from the CLA without being a union member by paying the ironically named 'solidarity dues' to the workers' confederation organized in the line of work in question. This can be read as a new phase in the devaluation of the union. After this arrangement, workers who cannot agree with the union management or who may be afraid of an organized struggle can quickly break away from union processes. According to Soyer (2022) and Yılmaz (2021), since the issue is related to the collective labor agreement procedure, this development will weaken the power of unions in countries where collective labor agreement is the most important activity of unions. It is stated that making the benefits of collective labor agreement independent from the membership status of the party trade union will have effects that will result in the loss of the importance of trade union membership and trade union existence. In addition, paragraph 4 of Article 39 of the law, which was subject to the annulment of the Constitutional Court on 30/12/2020 with file number E.2020/57, restricted the payment of solidarity dues by non-union workers during the authorization and preparation, negotiation, and bargaining processes of the collective labor agreement. This situation was used as a weapon against the workers during the authorization processes and was used to direct the workers to the desired unions:

> *"The union is currently protecting the worker from the worker. The man goes there, says, 'My work is heavy, put me in a more comfortable place,' and the man does his job. Well, who should replace him? Let a poor man go, a man who doesn't have a voice. They send a poor man, 'You work in his place', and he works without making a sound. The union protects the worker from the worker, in other words, in my eyes, it seems to be protecting the people who run after him and wave the flag. Until five years ago, each group had different wages. The shilt driver, who did the heaviest work, i.e., fortification, was the heaviest, so there was a difference in daily wages between them. They were divided into the first group and the second group. After Soma, the groups were equalized. In other words, the person who is a firefighter, who does the most comfortable job, gets the same money, and the person who does the heaviest job gets the same money, there is no difference. Every year they promised us, they said, 'Honor's word, this time we will get this in the contract', but they haven't done anything for four years. So, we got angry, we wrote a petition, we resigned. At first it was 25 people, then it reached 200. Some of them were persuaded by family and friends to come back, but I don't know the exact number now. We must pay the dues to benefit from the CLA. But we don't pay it to the union, we pay it to Turkish-Work. We applied to the*

GLİ headquarters with a petition saying, 'I want the solidarity dues to be deducted from my salary'. Currently it is being deducted to Turkish-Work. But we don't have a union membership, only the welfare dues are deducted. (G4-Modern Fortification-Şiltçi)

7.3. Meaning of the Union

Regarding the meaning of the union, it has been observed that workers attribute different meanings to the union than its formal meaning. In both private and public sector workers, there is a group that cares about the union, a group that does not attribute a meaning to the union, and a group that attributes a value to the meaning of the union but reacts to the fact that the problems they experience are not solved. The group that cares about the union states that they have support and trust in the union and that they receive support from the union when they encounter a problem in labor relations at the workplace.

In a sense, the expectations of the workers from the union exactly coincide with that of neaoliberalism. The notion of union is not within the context of class struggle anymore in neoliberalism. But it has a "legal" function in neoliberalism, that workers who encounter individual problems in working life benefit from to solve their problems. As Friedman (1962) stated, the deterioration of the policies regulating the labor market for economic and social affairs in neoliberalism practices, and the introduction of the solidarity dues arrangement as an indicator of the deregulation effect, disconnected the workers individually from union relations.

On the other hand, workers abstract the union power from their own existence, organization and solidarity and perceive it as an "externally created" power and draw a line based on benefit and problem solving.

"For us, for example, when the union first started, there was no service, I wasn't there then, in 2005 or something like that. He got the shuttle service; he got food money when there was no food money. They got bonuses. When you work night tramp [tramp shift - night shift], the salary is a little different. He got that. The union is actually trust for us. A little more trust. If you're in trouble, although we don't have such a thing, you can tell the guys when you're in trouble. They are going to fire me or something like that." (G24-Blaster)

"I mean, you know, in terms of salary, for example, that's how he stands behind us in contracts. If something like that happens, he will still defend

your rights. If you are going to be penalized for five days, he will reduce your penalty to two days. Such situations happen. So, it is good to have a union." (G16-Excavation)

"We have our own union: Mine working. Since I have been working in this company. Both the state union and our union are the same union. The union is something that represents the worker. For example, it is a place that seeks my rights. For example, they come and tell you that we got this and that and they leave. I see it as working for the worker." (G32-Mechanic-Private)

Some workers think that the presence or absence of the union does not matter despite their membership. Those who are more committed to the union and its activities are characterized as "permanent".

"We are members of Mine-Work affiliated to Turkish-Work because of the branch we work in. We have been members for 10 years since we started working here. I don't have much work. I don't have much to do with the union unless I am called for something very important or necessary. So, we don't participate much. How should I put it, in the case of seminars, when they are out of town, they have certain permanent staff, they usually take care of that. So, we don't hear much about it. We don't have much activity. Well, there have been some events for me in the union, but I don't have much to do. I mean, I've never had a job that I can compare in the sense that I've had a job like this and it turned out like this. I don't know what to say. He says that the old days were different, as the old people used to say. The first functioning system of the union. Now it has become a bit more passive. Because of laws etc. I mean, it doesn't mean anything to me." (G21-Electrician)

Some of the unquestioning and unprincipled defense processes used by the union to protect the interests and rights of its members who do not act in accordance with work discipline in workplace relations are severely criticized by other workers who abide by work discipline and rules:

"What does the union mean to me? An institution that drowns in minutiae. An institution that drowns in minutiae instead of doing its main job and that turns a blind eye to injustice instead of fighting it. ... Rights protection. In other words, while it should prevent the injustice suffered by the worker and defend the worker's rights, by standing behind a wronged person, it also violates the rights of a person who did not make a mistake, and sets a bad example for those people by saying, "Should we also be careless like this?" Instead of standing up for a wronged person and saying, "Yes, if this person needs to be punished, let him be punished," it says, "Oh, let's not see it, let's forgive him." Of course, this is heard, "Oh, Chief, so-and-so was caught sleeping, he was caught lying down. Should we also not do business, should we also be like this; look, it doesn't work", it causes them to develop such a point of view. So, I can't say it's very positive. (G2-Mining Technician)

7.4. The Basic Function of a Trade Union

Trade union structures can also have social and political functions as democratic mass organizations in modern political life. Kenney and Zysman (2016) state that during the neoliberal de-unionization process, workers' interest in alternative labor organizations such as worker cooperatives and platform cooperatives may increase. Despite these views of Kenney and Zysman, it was observed that such a tendency did not occur among the underground miners within the scope of the study. The interviewed workers perceive the union on a more pragmatic level and give the union the role of defending their individual rights related to work, especially wages.

The main function of the union is a frequently questioned issue among workers. However, it is possible to say that the benefits it will bring to the worker during the collective labor agreement period are accepted as the most basic function. There are also problem-oriented approaches. For example, issues such as illegitimate demands, unpaid work demands, investigations/disciplinary incidents may constitute the framework of the union's activities. In addition to these practical/more concrete functions, issues such as the protection of workers' rights and solidarity also come to the fore.

> *"The main function of the union is to hold the hands of workers when they are in difficult situations. Thus, we need to be a family. What should happen is that it should be with the worker in a difficult moment. That's what I want, for him to be with me in my difficult moments. When I am sick, when I leave here with a work accident, when I open my eyes in the hospital, I want to see the unionist with me. I want to see them at my funeral, I want to see them at my wedding. Currently I see the union on the side of the employer, not on the side of the worker. In the pictures, there is a loaf of bread at the bottom, everyone shares this bread, but it is not like that." (G9-Blaster)*

Against the current political backdrop, the union is losing its influence day by day, and with the loss of influence, it is losing its power of attraction for workers. In the negotiations, it has been observed that the trade unions have not been able to articulate a demand above the conditions provided by the employer. There is no mass forcing the unions to do so. In this sense, expectations regarding the gains to be achieved by the union are limited. In addition, the conditions are evaluated under a general acceptance and have moved to a dimension where the workers are content

with what is happening, grateful for the wages/jobs provided and even empathize with the difficulties experienced by the employer.

> *"It should be to protect the workers, but that doesn't happen in the company now. It already pays 8 billion salary, two minimum wages, two days' vacation. I don't think the union can do anything different. If it does, that man (Private Company) cannot work. I don't know, it seems that way to me. We didn't push too hard about bonuses; we couldn't say why they were in the other company and not here. Because this man started from scratch, he needs to produce and earn money. We have a lot of labor here; we need to transfer it. This company (Park Technics) has also left this place, only one man (ÖEM) entered the tender." (G24-Barutçu)*

The fact that the interviewed workers attribute a functional meaning within a framework that protects their professional and even individual rights, rather than interpreting the union as a democratic mass organization, also reduces the expectations about the gains provided by the union. In fact, as can be seen from the quote above, this functionality sometimes even puts the employer in the position of justifying the worker in the union-employer negotiation. This situation can be evaluated as an important ideological gain in favor of neoliberalism within the context of neoliberal negotiation.

7.5. Change in the Perspective on Trade Unions

One of the important developments brought about by the Soma accident is related to wages. Under the relevant law, wages based on titles were abolished and all workers were paid almost the same wage, with a lower limit of at least two minimum wages. While this created general relief, it also created tensions among workers between those with more demanding jobs and those with relatively more comfortable jobs. The union was expected to arbitrate/intervene on the issue, and some workers left the union due to the lack of a solution.

> *""We have a union; we have the right to be unionized. We have made many demands from the union regarding these daily wage issues that affect labor peace, saying, "Fix these problems". The Soma accident happened in 2014. Eight years have passed since 2014, and they have not been able to solve this problem for eight years. Every contract period we get a commitment from them that they will solve this problem, but the contract period ends, and it is not solved. As a group of friends, we are not convinced that they are working in a solution-oriented manner regarding small problems like this one at the workplace. I don't know the exact number or how many people resigned. The*

union says, "No, there are few resignations"; the other side says, "No, there are many resignations". But my guess is that there are probably 100-150 people in the organization who resigned because of such things. I was unionized from the day I started work until three months ago. It's been three or four months since I resigned." (G13-Agustor-Public)

Private sector employees, on the other hand, have a narrower view of trade unions. The reason for this is that the union is content with what the employer gives and avoids a real struggle. There is a dilemma regarding the different performances of the union in the public and private sectors. Participants are aware of the problems/precarity that may arise after the union pushes the private sector. However, it is also seen that there is a resentment/insecurity created by the gap between gains.

"It should be fair. But for example, our union is the same as the state union, but our rights are different. For example, we don't get what they get. They get everything from the state, but our company doesn't get it in that way. That's why I don't do too much for the union... Now, since we are in the private sector, we get what the company gives us, for example. If you ask for 10 pieces of material, the private company may or may not give it to you. If it suits them, they make you do it or not. I have always underestimated the union in my own eyes. Even when there was no union, for example, that's how I saw the company. I never trusted the union. The union will take it or leave it. That's its problem. What are you going to say if they don't give us what we asked for? He says we presented these to the company. And he says he gave them to us. There is nothing for us. Unions don't change, but the same union has been going on for years." (G32-Mechanics-Private)

Following a strike at the mine operated by Park Teknik in late 2013, the employment contracts of approximately 500 workers were terminated. During the process, some workers perceived the activities of the employer and the union as joint and claimed that the strike was a collusion between the union and the company. It is thought that the company joined hands with the union and organized the strike in order to close the underground quarry, which was seen as problematic, and that this was used as an excuse to close the quarry. This perception reduced the trust of some circles in the union.

"Around the end of 2013. January wasn't going to close yet, there was a vote on whether to strike or not, yes or no. I voted for no strike, I was even investigated for this, the manager was called in and so on. I said, why should we say yes to the strike, why should we close the quarry, didn't we come here to work? I don't want the work to end, to close. We want to make money; we want to make a day's work. There was a strike, the workplace closed. We watch the worst news about workplaces where there is a strike, a workplace

where there is a strike will never continue, it closed down. While 500 people were working, suddenly 250 people were unemployed. Of course, the furnace was closed. At that time, they said that there was an agreement between the unionists and the company. Or they reduced the number of workers. The company wanted to close it down. It didn't want to work. They used unionists as an excuse and used us. There were rumors about us. I don't know the exact details either. I didn't do anything about the strike, I always came to work. For example, a man comes in and puts on a picket vest, I didn't do it, I always went in. Because the ones who did that, the ones who were leaders, cut off their heads in the first place. They always lost their jobs. To be honest, I never got into those balls." (G33-Mechanics)

This quote points to a phenomenon that was also mentioned above in the section on mining. Neoliberal ideology, which puts workers in a dilemma between personal, social and global well-being and their responsibilities towards their employers, also affects worker ethic. The experience of the strike narrated by the worker in the quote above summarizes the dilemma experienced by the worker as a result of this dilemma.

The decline in the power and influence of trade unions due to the post-1980 transformations is explained by experienced workers in terms of legislative pressures and the decline in their numbers. Özerkmen (2003) summarizes the restrictions in the post-1980 legislative arrangements as political and professional and states that the 1982 Constitution, the Trade Unions Law No. 2821 and the Collective Labor Contract Strike and Lockout Law No. 2822 imposed restrictions on the right to unionize, the right to collective labor agreement and the right to strike. A mine worker describes these restrictions in the following words and draws attention to the impact of technological innovations and the decline in the number of workers on the weakening of trade unions:

"Unions used to be more powerful. Now unions don't have as much power as before. In this respect, unions are not that strong. I know because I have been in it. The post-80 law and some other things changed the power of the unions. And maybe they started to look at things the way I said. I mean, let's not defend the unjust too much, but they do. Or did the laws change? The number dropped; the number of workers dropped. So, power comes with numbers. In that respect, maybe. " (G17-Blaster)

7.6. The Value and Importance of Trade Unions in Working Life

The trend of union devaluation, which has been observed with neoliberalism across the world, combines with the characteristics of peripheral countries like Türkiye and increases its severity in Tunçbilek. Although union activity in the Tunçbilek underground mines is strong in comparison with other sectors, it falls behind global examples in terms of worker gains, organizational cohesion, policy development, credibility, etc. Some of the interviewed workers conveyed the dysfunctionality of unions with the following subjective statements:

> *"No, not at all, it doesn't matter. He only has six days off a year." (G11-Monray Operator)*
>
> *"I swear I have not seen any contribution." (G8-Excavation)*
>
> *"Well, it doesn't add anything. I'm telling you what I've seen. I don't think it adds anything, maybe it does. I don't care about the union." (G15-Band Worker)*
>
> *"I can say that there is none for now. Apart from the social benefits they receive, there is nothing clear financially or spiritually at the moment." (G29-Chimney Men- Bacacı)*

Interviewees stated that the current union has lost its credibility to fight for rights because it acts within the limits of the opportunities provided by employers. Although not explicitly stated, there is an internal unease that the union puts the interests of the employer ahead of the worker. Although some of the workers argue that unions are an important organizing ground for workers as they are by definition a structure that defends workers' rights, the wrong practices in the practice of life, the mistakes and shortcomings of "unionism" in the field, or the negative images created by the people representing the union may cause workers to distance themselves from the notion of union:

> *"Unionization is a good thing. But unionization is good, but unionism is dead in Türkiye. Unionism is an unnecessary institution. Let me say this. The state thinks about the worker more than the union." (G20-Cutter Operator)*
>
> *"For example, before the contract time, he says, 'I will do this, I will do that, I will do this, I will do that,' and when the contract time comes, he says, 'The state gave me this. The state has already given it, you don't need to enter a contract; don't enter into a contract, let's take what the state has given and withdraw. There is nothing else to do. And they make us wait here for eight or*

nine months because 'I'm entering into a contract, I'm doing this, I'm doing that'. Our situation is not like that of civil servants. In civil servants, for example, the raise rates for 2022 are determined in the 9th month, 10th month of 2021. We signed a contract in 2021, we received the difference in the 9th month, the contracts continued until the 9th month." (G11-Operator)

CHAPTER VIII

MINING PROCESSES FROM THE PERSPECTIVE OF EMPLOYER MANAGERS, LABOR REPRESENTATIVES, AND INDUSTRY EXPERTS

This section focuses on the effects of technological changes in underground coal mine labor on employee profile, production efficiency, OHS practices and control and supervision issues from the perspective of employer representatives, worker representatives and academics who constitute the other wing of the fieldwork.

8.1. New Technologies and Mining Labor

The semi-mechanized and fully mechanized systems introduced in underground coal mining in Türkiye since the 2000s have initiated serious transformations in coal mining. Although this is a new development for Türkiye, Trist and Bamfort's (1951) study, in which they examined in detail both the technological analysis of the mechanization transformation in coal mining in England and its effects on the social structures of the workers, shows that similar processes began to be implemented about half a century before Türkiye.

In Türkiye, mechanized systems were first used for production under the leadership of TKİ. In the following years, some private enterprises also started to use these systems. However, many employer representatives and academics we interviewed stated that it would not be economically realistic to switch to such systems due to the geological/tectonic characteristics of most mining areas in Türkiye.

> *"In the late 90s, around 2000, fully mechanized mines started to be established. In Soma and here. Other than that, there are no mechanized pits elsewhere. In Gediz, for example, there are many coal mines. They all work with classical methods. Therefore, there has not been a rapid transition to mechanization in Türkiye. Because our coal seams are small pits. Pits where faulting etc. is intense. It is very difficult to mechanize here. It also requires huge investment costs. Therefore, except for the recent period, private*

companies have established mechanized mines in Soma. Polat Mining, Park Holding, İmbat Mining established them. Other than that, private companies did not do this work. They were taking over from the state, like in Çayırhan. Therefore, this classical mining continues in many parts of Türkiye." (University Interview)

These geological limitations/characteristics have resulted in the fact that GLİ and ÖEM mining enterprises in our research area produce different systems. While production is carried out with fully mechanized systems in the quarries of GLİ, production is carried out with semi-mechanized systems in ÖEM. According to ÖEM managers, this preference is a situation imposed on them by the field:

"These quarries are not suitable for full mechanization. This region is more suitable for semi-mechanized. I mean, if you say mechanized and semi-mechanized, semi-mechanized is definitely more efficient in almost all of this region. Underground, for example, if I talk about coal, underground is a living organism. Variations are very frequent. There is no stable functioning like a factory depending on the variables you experience. Whether it is the pressures created by the earth's crust, faults, or instantaneous faults. So, there is constant mobility. This completely depends on the tectonic structure of the site. The study area. First, we need to know the site. Accordingly, will the technology be suitable for that site or not? We need to look at that. (ÖEM-Operating Representative)

The difference between semi-mechanized and fully mechanized is that in fully mechanized the cutter and the supports are both electromechanical equipment. In semi-mechanized, at least one of them is not electro-mechanical:

"In semi-mechanized excavation, they do the excavation with a drum cutter, they do it mechanized, they do the fortification with the classical method. Therefore, since they use mechanization in excavation, drilling and blasting is eliminated. So, let's say it decreases a lot." (University Interview)

With the introduction of mechanized systems, there have also been transformations in mine workmanship. At the beginning of this transformation, some examples of craftsmanship that existed in the classical period disappeared or changed form and new forms of craftsmanship emerged.

"For example, there have been major changes in the definitions of labor due to the hydraulic support used in mechanized piers. In the past, there were various items such as master substitute, preparation worker, preparation substitute, dismantling worker. Most of these have disappeared." (University Interview)

It is believed that the use of technology over the years will lead to a change in the established/iconic image of the underground coal miner. This belief is fed by the fact that the work is far from its old weight with mechanized/technological structures. As mentioned earlier, the common image of coal miners around the world is that of the coal-black coal miner. An interviewed manager refers to this image and expresses his discomfort with the situation:

> *"There is modern mining here. Also, the profile of mining in the country has always been based on Zonguldak. He came out of the quarry; his face was black. That is not mining. It's a way of agitating the event." (GLİ-Operating Manager)*

8.2. Effects of Technological Changes in Production Techniques on Labor

Apart from fully mechanized equipment and some personal protective equipment, not all equipment used in underground mining has undergone radical design and structural changes. Therefore, an underground worker can be familiar with most of the equipment used 60 years ago. However, this changes completely when the equipment in question is fully mechanized. The qualifications of the workers using this equipment diversify and critical decision-making skills are expected during the course of the work. Although it is generally accepted that mechanization alienates the worker, in the process of using new technological equipment a worker gains limited authority in the implementation of work/production:

> *"Technology really changes people's perspective on work and labor. In other words, especially the mining sector is not a branch of engineering that is very much prone to technology. For example, underground equipment used 40 years ago can still be used. Whether in hand tools or other tools. But especially with the recent development of mechanized mining and the increasing applicability of this in our country, we have started to expect the following from the workers. Let them comment. For example, how many sensors are there on our cutting machine? For every malfunction, for every slightest malfunction, of course, the electrician or Mechanics should intervene, but some comments should also be made by the operator. That is, that operator should have a different perspective on that machine and a different perspective on the work." (GLİ-Engineer)*

As a result of transformations in technology, it has been observed that the competencies and skills of underground workers on some of the critical equipment they use differ from those of workers using previous production systems.

"In fact, when we look at the private sector, for example, in fully mechanized legs, they actually choose especially cutting machine operators and support operators from such technicians. You need to be a little bit smart on fully mechanized piers, you need to be a little bit conscious. Mechanical tools are used, and the slightest mistake you make on mechanized stands can set you back two or three shifts. It is difficult to compensate in the mechanized panel." (GLİ-Engineer)

It has been observed that the technologies used underground have destroyed some job titles and replaced them with new labor titles. Mechanization work is one of these new titles. While this type of labor concerns both the areas related to the way the work is done and the continuity of use of the equipment used.

"With the transformation, something called mechanization labor has emerged. This is what you see in the places you visit. Both gallery openings started to be made with gallery opening machines, except for drilling and blasting. With mechanization labor, for example, drilling and blasting labor has disappeared underground. It has not disappeared, but it has decreased a lot. They only do blast in certain places." (University Interview)

8.2.1. Change in the Employee Profile

As mentioned above, the criteria for the placement of workers in the public sector is to have a high school diploma, pass the KPSS exam and pass the physical-technical tests of the organization. GLİ Ömerler underground quarry did not recruit workers for about 10 years between 2000 and 2011. This situation not only resulted in a decrease in productivity in the enterprise, but also in a considerable decrease in worker capacity utilization rates due to retirements. With the start of recruitment in 2011, there was a change in the worker profile and all workers were high school graduates.

"I entered here in August 2012. In 2011 there was a recruitment. There was no hiring for a long time before 2011. These workers were recruited for the new, second type mechanized foot. There was no recruitment for a long time. When I started working here in 2012, I worked with people who had seen the old classics, but there were never more than 10 of them on each shift. So, it had dwindled. The last people retired around 2014- 2015, the last of our old masters who had seen the classics retired around 2014- 2015. You know, our worker profile is now high school graduates or university dropouts." (GLİ-Engineer)

Although the transfer of knowledge and skills from experienced workers to new workers and the use of the latest technologies are ensured in underground coal

mining, at some point, due to the unique geological/tectonic conditions of each underground mine, it continues intensively today.

> *"In mining, mine workers were generally trained through the master-substitute relationship until recently. That has changed a bit now, they are hiring industrial vocational graduates. There are graduates from mining colleges. There are technicians from both industrial vocational and mining colleges. Before, for example, the work of a mining technician was done by sergeants. It used to be done by people who grew up from labor, from the core, but now it is done by technicians. In general, mining is something learned on the spot, and so is mining engineering. Mines have their own characteristics. Even if there are different quarries, each quarry has its own special things. Therefore, in the same way, workers generally learn by seeing a little bit of the ground. In other words, you can only give things in general frameworks in training before starting work. Mining is largely learned on the spot. After that, there are definitely on-the-job training courses within themselves. (University Interview)*

Although technological machines are widely used, some managers believe that workers with a primary school education, who have worked in the fields, vineyards, and gardens, and who are handy with a pick and shovel, do more successful and productive work underground, except for a few positions that have developed with technology. As mentioned above, although it is in parallel with technological developments, there is a need for qualified workers with advanced knowledge and skills in mining, the limitations imposed by the struggle of underground mining with nature, and the fact that mining continues to preserve its traditional structure do not diminish the importance of traditional labor in the transfer of technological transformations developed with neoliberalism to the underground.

> *"In some jobs, there is still no distinction between primary school and high school, even if it is mechanized. What it will do is lower and raise the hydraulic arm, carry out the fortification, clean the shovel. But the cutting machine, that is the most important, the heart of the system. We have already specially selected the person who will use it. They are conscious, maybe even technicians. Because one machine costs 2.5 million Euros. They need to operate it without malfunctioning. So, we are selective there too. But as I said, I don't want it to be fully mechanized, and I don't necessarily want everyone to be high school graduates or industrial vocational high school graduates." (GLİ-Operating Manager)*

In terms of work ethic and value, it is stated that the characteristics of the old employees have disappeared with the new worker profile. It is evaluated that the new

workers are dominated by the characteristics of being fond of the comfort of today's world and not having enough desire to produce.

> *"I think the work ethic has dropped a lot. The way workers look at work has changed. What I see in them is that I will get paid a lot, I will not get tired, my social life will not be affected after working hours. The old ones cared more about work. Now they don't." (GLİ-Operating Manager)*

8.2.2. Production Efficiency

The biggest advantage of fully mechanized and semi-mechanized systems is that they create a safer working environment compared to conventional systems, as well as significantly increasing production capacity.

> *"In one of my sections, when I advance 80 centimeters, I get 500 to 600 tons of coal. For me, in a cut for a three-meter foot. Theoretically, I can make this cut in one hour on mechanized feet. In this cut, I produce 500 tons of coal. But we take the five-meter section in the ceiling by caving in the back. That's when I can produce 2000 tons to 3000 tons of coal from the back, which takes almost one shift. The same is the case with the classical ones. You produce more coal when you take the back coal. That's why when the mirror is working, a little less tonnage of coal is produced, but when you take the rear coal, it flows like a rose. Therefore, you can calculate exactly how much coal will be produced. But compared to the classical foot, much more is produced in the full mechanism. The classical foot is nothing compared to the full mechanism." (GLİ-Engineer)*

However, for the efficiency of these systems, not only the technology selected should be suitable for the geological characteristics of the site, but also the organization, division of labor and technical skills of the workers who will operate these systems should be improved.

> *"Underground, production capacity is important, production speed is important. I mean, you can cut and produce as fast as you want, but if you can't move the support behind at the same speed, if you can't dismantle it and install it in its new place, the cutting machine is already waiting. So, it continues at the same speed. Conversely, you can advance the support very quickly, but if you can't cut the front side, there is no point in advancing the support. The importance of my fully mechanized production system is the excavation speed. It increases production capacity." (University Interview)*

Bridge (2004) and Jenkins (2004) have argued that neoliberalism, while eroding regulations to protect workers' rights, has also led to the relaxation of environmental, labor and safety standards in order to reduce costs and maximize profits. In this

sense, there are significant differences between private and public enterprises in terms of the meanings attributed to production efficiency. In public enterprises, the priority is to produce in a way that the workplace is safe and technically does not put the next shifts at risk. The private sector, on the other hand, must care about safety, but follows the logic that more risks can be taken for more production.

> *"There can also be conflict between shifts. During production or during preparation. For example, I mined this many tons of coal, I made this much progress. These are sweet rivalries between shifts or between workers. But as I said, I will produce more because two shifts come after me. If two shifts have to deal with the malfunction that you did, there is no point." (GLİ-Engineer)*

In terms of productivity, it has been observed that the production amounts of ÖEM company are considerably higher compared to the GLİ plant thanks to its semi-mechanized systems, which are technically more suitable for the mine conditions.

> *"We are currently working on a single panel, the H panel. We are producing around 2000 tons, 2100 tons per day on average at 160 -180 meters on two legs. We are planning in a transportation system; we are having the foot conveyors replaced. With the change, our daily production will increase to 3000 tons. In other words, it will increase by 50%. Our calories are low. We extract 2000 tons of coal per day at an average of 2000 calories. Probably in a month or so from now, we will reach 2500 tons and then 3000 tons. Because we will gradually switch to foot conveyors. Our efficiency in semi-mechanized mining is very high. We are currently mining between 80 and 130 tons per team. A team mines 130 tons of coal. GLİ-Ömerler's full mechanization is like a thing compared to us. What can I say, it is like not producing at all." (ÖEM-Representative)*

Another factor affecting production efficiency in GLİ quarries is the inability to use fully mechanized systems at the desired capacity. This low-capacity utilization and related problems were mentioned by all managers of GLİ. In order to overcome these problems, the company is reported to be looking for some corrective and preventive actions.

> *"They installed a new system, a double conveyor from China. There is a mechanism through which the coal flows, it is called a conveyor, they installed a double one. For a while, there was no system to carry the capacity on the main transportation routes. They fixed that. They can't move the thing forward because of the water problem at the feet. The drum cutter cuts the mirror in an hour, but you've seen those walking fortifications at the back, the ones they call shilt. It must be very fast to push them there. Because they don't do that, the drum cutter works for an hour, but it lies down for eight hours.*

Therefore, the biggest advantage of the fully mechanized system, apart from occupational safety, is the production speed. (University Interview)

However, it can be said that the technology used, and the feasibility/calculations of the site were not done correctly. Inappropriate systems installed by spending significant amounts of money should be questioned in terms of efficient / appropriate use of public resources. In addition, the lack of control and supervision in procurement and approval processes facilitates possible non-compliance. Similar to what Harvey (2005) takes attention, this fact strengthens the neoliberal assumption that privatization will enable more efficient use of public resources and services. Thus, neoliberalism reaches an advantageous position in the negotiation process. However, as we mentioned above, erosion in public control is another reason for this result.

8.2.3. Changes in Occupational Health and Safety

The results of erosion within the public inspection are apparent in tragic dimensions in catasthrophes in underground mining. Auty (1993) and Bridge (2004) point out mining as one of the industries in which private companies move away from surveillance and control, in parallel with the decrease in state surveillance within neoliberalism, especially with the establishment of new companies in the privatization process, and this surveillance becomes more difficult. However, it can also be evaluated as the fact that neoliberalism has made serious concessions in this area in the negotiation processes with underground mining, and that it has re-sturctured itself up in terms of worker health and work safety.

In this context, following two major accidents, the issue of occupational health and safety in mining in Türkiye has been reconsidered in many aspects such as the creation of emergency plans, drills, rescue training, emergency training, and equipment. The traumatic atmosphere created in society as a result of the mass deaths and injuries in the accidents and the efforts of the relevant non-governmental organizations have been challenging for employers and policy makers to develop the issue.

"The Soma incident has created a great change in us in terms of occupational safety. A good change, but an exaggerated change. In other words, there is

less time for production now. Continuous training. We must do it, there are regulations. It is a difficult process right now." (GLİ-Operation Manager)

"Before, when we went underground, we didn't carry masks, sometimes we did and sometimes we didn't. Nobody would tell us to wear the mask. You know there used to be carbon monoxide masks. It was only effective against carbon monoxide. In Soma, people died even though there was a mask. After that, oxygen masks are now compulsory. The regulation changed after the Soma accident. In other words, there are masks that completely cut off communication with the system and provide oxygen within themselves. Now we can't go underground without a mask, for example. They definitely give us that mask, they do. I don't know if we wouldn't have gone underground without masks if the Soma accident hadn't happened. After those big accidents, after the Soma and Ermenek accidents, we see that more importance is attached to the implementation of written rules in the places we visit." (University Interview)

Due to the spatial constancy of mining (Perreault, 2006; Bulmer, 1975) and production maximization against nature, the production techniques developed in England in the 1940s came to Türkiye about 60 years later, but it should be noted that they made a significant difference in reducing accident risks in a short time.

"Of course, in the mechanism, a little more human contact with nature is cut off. There is already a significant decrease in the number of occupational accidents in our work. It gives that result. The less you compare people with nature, the less risk they are exposed to." (ÖEM-Operating Representative)

The necessity to equip workers working with fully mechanized and semi-mechanized systems with protective equipment, knowledge of tool use and experience in a different way than the OHS systems applied in classical mining methods has emerged in parallel with the developments.

"Occupational safety trainings are different when working mechanized compared to conventional panels, and therefore the person working there needs to be self-trained and conscious." (GLİ-Engineer)

Another important parameter in OHS systems that develop depending on technology is the integration and internalization of OHS culture into the work discipline during the integration of workers into these new systems.

"When you went to the Garp Lignite 50 years ago, men were working without hard hats, wearing beanies. Now, if you say to a worker whom you see as the most naïve, my teacher has brought this helmet, you go without a helmet, my chief, don't be ridiculous. The worker doesn't think there is such a thing as going underground without a helmet. I am saying that the level of culture has

come to this point now. It is still not very high, but it is at a certain level. For example, I am a Class A occupational safety specialist, I don't have the chance to say that tomorrow I will go and change everything at GLİ. Because I cannot do that. For this to happen, I am saying that generations need to change regarding the culture of occupational safety. There are many things that have really changed, but we are still not at a very advanced level." (University Interview)

OHS, an abbreviation commonly used in correspondence, regulations and practices, stands for Occupational Health and Safety. Previously, the definition of Occupational Health and Safety was widely used instead of this abbreviation. This conceptual and discursive transformation separates the worker from the work and emphasizes only the safety of the work.

"There is now occupational health and safety. They abolished labor." (University Interview)

8.2.4. Control-Surveillance

Apart from the control room, the RFID, finger and face scanning tracking systems described above on control and surveillance issues can also be monitored from the desks of ÖEM managers. In addition to this, ÖEM officials also monitor their entire sites with surveillance cameras. Today, it is seen that classical control and technological control are used as a hybrid model. The use of both methods as a means of discipline/suppression beyond their original purpose is common in mining.

"Of course, there is managerial pressure, this pressure is production oriented. Forcing them to work. For example, I go into the mines at two o'clock at night, I don't look anyone in the eye. You become unpleasant. But actually, what I do is not a raid, it is an effort to increase their working efficiency, even if by force, because they don't lie down, don't run away, don't do what they are told to do." (GLİ-Operating Manager)

8.3. Interviews with Trade Unions

In this section, the problems encountered in underground mines with union representatives, changes in member relations, transformation of mining work and ethic, problems encountered during union activities, values added by the union to workers and transformations in OHS culture are discussed.

In Tunçbilek underground coal mines, Mine-Working union affiliated to Turkish-Work has been organized since 1958. The union, which has been active for many years, carries out its activities in a three-stored building in the center of Tunçbilek. The building has a meeting hall with a capacity of 400 people, several meeting rooms, and offices where the union's routine work is carried out. In the in-service vocational courses and OHS training given to the workers, the workers of GLİ and ÖEM are not brought together spatially, and their work is carried out in different halls. When not in use, the halls also meet the meeting space needs of public institutions in the town. The shops on the ground floor of the union building are rented out to tradesmen and chain supermarkets to generate income.

The union also has a representative office located separately from the building in the part where the GLİ field administrative building is located. This office is usually frequented by unionized workers in the open pit, workshops, carpentry shop and tile shop during lunch. Although the underground workers' locker rooms, canteen, bathhouse, masjid, charging stations for flashlights and oxygen masks are located very close to this representative office, underground workers rarely use this representative office. The main reason for this is that during shift changes, the new shift workers must get ready quickly and rush to the mine entrance. A similar situation applies to workers coming off shift. Workers leaving their shifts take shuttles from the quarry, which is a short distance away, to the bathhouses where they can quickly wash themselves and then leave the mine site as soon as possible with the shuttles provided by the subcontracted transportation companies provided by the workplace. A similar organization exists in the ÖEM. However, there is no union representation office near the facilities used by the ÖEM.

The facilities used since the 1940s for the use of workers at the GPI Operations site have been in a state of extreme disrepair and have not benefited from renovation and investment for many years, except for incidental maintenance. The physical conditions of the above-ground service buildings are the same for the facilities allocated for the use of the ÖEM. It should be noted that these facilities, where little regard is paid to the comfort of the workers, are little different in terms of physical conditions from migrant internment and concentration camps.

GLİ, together with Zonguldak, are the last remaining publicly owned mines. In this respect, it is a moral representation and a model for public provision of services despite its shortcomings.

> *"Brother, there is only this place left in the public sector except Zonguldak. This is the underground quarry of TKİ. There is no other place in the public sector. This place is also a training quarry. Both for the training of university students and high school students. It is very important for the mining sector to continue with the public sector. This is the only place left." (Union Management)*

It is also necessary to draw attention again to the fact that sometimes public enterprises are also in the process of subcontracting work, especially in the construction phase. Indeed, the construction phase requires a high employment capacity and temporary employment in this limited period can only be achieved through subcontracting. (Erdut, 1998)

However, it is known that subcontractor companies are involved in some of the activities of GLİ. The production panel preparations of underground mines directly operated by GPLI were given to subcontractors. The works could not be completed due to problems and poor quality, and the solution was again found in the mobilization of public resources.

> *"They put the ladle in, the dosko remained in it, problems and problems. They tried to overcome these. We had M7 and M8 piers where we worked with the supports, we used to use. Let me talk about the date when I got the job. M7 was almost finished, we removed the supports from M7 and moved them to M8. Now it is the last gallery, we don't have a ready gallery. When we finish here, we have no work to do. And the company cannot deliver it to you. On the other side, the Park company has entered where the B panels are. That place remains unfinished. Due to fire, water, I don't know why, it's unfinished. In other words, neither of the galleries that should have been opened by the private sector did any good. What happened, immediately the directorate of TKİ took urgent action, they said that a gallery should be opened immediately by the public sector. The opening of the A5 gallery was started. When the A5 gallery was opened, we removed our supports and installed new ones here, the ones we are using now, which came from China the second time. Before they could deliver the A2 to us, we opened A5 and finished A5. Then they said that the A2 was ready and would be delivered. We don't know tons of procedures. We worked for a year in the gallery they said was ready so that we could place the supports. We worked for a full year in the gallery they said was ready and delivered." (Union Workplace Representative)*

In low-quality works carried out by subcontractors, internal control processes were tried to be overcome through political/bureaucratic relations, and pressures were created on those responsible to get the work accepted and to neutralize control processes.

> *"Now you are walking with one foot and the other foot is crunching. That foot is now closed. It is one of the biggest damages to the state. Actually, we also have our own team. GPP also has its own team. Control branch directorate. But the tank didn't inspect it. Or political pressure from Ankara. Our managers won't sign the progress payment at the end of the month. They go to Ankara and have someone from the general directorate make a phone call. And when the work is finally finished, our managers don't take delivery. Look, this is missing, that is missing, the man finishes the work in Ankara and leaves. He closes his account and leaves. This is how it has always been; this is how it works now. For example, at that mine in Soma, the minister came, they had their picture taken at the mouth of the mine, he said this was the safest mine in Türkiye even before entering the mine. A week later the mine collapsed." (Union Management Representative)*

8.3.1. Changes in Union-Member Relations

According to December 2021 data, the total number of workers officially employed in mines and quarries in Türkiye is 207,366. There are a total of 8 trade unions active in this line of work. Of the current workers, 41,338 have union membership. According to the number of members, these unions are respectively Turkish Mine Workers Union (Mine-Working) 28. 522 members, General Mine Workers Union (General-Mine-Working) 8964 members, Primary Mine-Working 3089 members, Independent Mine Workers Union (Independent Mine-Working) 395 members, Revolutionary Mine Exploration and Operation Workers Union of Türkiye 235 members, Confederation of Right Workers Unions has 113 members, Turkish Mine Workers' Union has 12 members and Turkish Energy, Nuclear and Mining Research Institution has 8 members.

The unionization rate in the mining sector in Türkiye remains at 19.95 percent. The share of the mining sector in total employment is around 1 percent. When we look at the issue from this perspective, unionization tends to decrease and becomes worthless with the effect of neo liberalization and new production methods. Although it is a right and guaranteed in the constitution, in the current system, the

right of workers to join a union is becoming less and less important due to employers' obstructions and state policies that encourage obstructions.

> *"About 160 thousand people are non-unionized. Do you know who these are? There are people working in the chromium mines over there. But there are mines that are in the process of being established. Marble, they are also joining Mining-Working, 03. We have no success in marble factories either. We can't do it, hodja. You go in, the boss has 15 or 20 men working, but he won't let you do it. He fires him the next day. For example, when the General President was the organizational secretary, he says he went to Mersin, he says they called me, for example, we gathered in a café in a marble factory with 150 people. The next day I was going to start registering members, 30 or 40 people came to the café. This is a matter of four or five months. The employer planted an agent inside them, they immediately went to the meeting and told the boss. I swear the boss threw out all 38 men who came to the café. The next day they were turned away by the guards at the gate, they said your employment contract was terminated. That's why we are not very successful in the marble quarries. We cannot recruit members, people are afraid." (Union Management Representative)*

Despite these negativities, the reduction of bureaucratic obstacles in union membership application procedures thanks to the developing IT infrastructure has relatively facilitated workers' membership and termination processes. Technological changes in the field of informatics have, on the one hand, reduced bureaucratic processes and, on the other hand, increased the physical distance between workers and union centers/unionists. For this reason, even union officials can only find out later who has become a new member or who has resigned from membership.

> *"In the past, you used to go to a notary, pay 100 liras, and when you resigned, you used to go to a notary again and pay 100 liras out of your pocket. The union covered it when he became a member. There was no problem, but when the man tried to resign, he had to spend money out of his pocket. Now, when a man logs on to the internet, he lists the NACE code, if you are a miner, that you can become a member. Unions of Turkish Labor, unions of Confederation of Right Workers Unions. You can choose wherever you want. You click and become a member of that union. If you want, you can resign the next day." (Union Representatives)*

However, regardless of the method, union membership of private sector employees is controlled/monitored by the employer. It is thought that this mechanism is implemented with the expectation that it will serve as a deterrent. There is a belief that some workers who initiate union membership without the company's knowledge have been terminated.

> *"But for the private sector, it is still under the control of the employer, to tell the truth. You can become a member without the employer's knowledge, and the next day they can kick you out." (Union Manager)*

In contrast to such approaches by private firms, union officials act on the principle of minimum conflict in order to realize the labor relations defined in the constitution and relevant laws. Thus, the union develops strategies to act within the limits set by the employer in order to minimize problems.

> *"For example, we were going to make Park Technics a member, I went to my friend from METU, who was once my chief engineer and then started at Park Teknik, and I told him, and he said, 'Alright, let's talk to Ankara'. He met with the general manager, and the boss of that place was an engineer who grew up here, so of course he was warm to it, he said go ahead. He said to do as many as you want. Again, we take the employer's opinion. Because we work in partnership with the employer. They don't want to be too casual. But when you explain it well at the table, they are convinced." (Union Executive)*

There are a total of 2820 employees in Tunçbilek underground and surface coal fields, including 2400 workers from various labor groups and 420 civil servants serving in different business lines. The total number of Turkish Mine Workers' Union members is 1704.

Of the total 1304 workers employed in the GLİ Ömerler Plant, 550 are underground workers. The remaining 754 workers work in open pits, workshops, sales department, lavuar (washing) facilities, laboratory and sample department. At ÖEM, Turkish Mine Workers' Union has a total of 300 underground and surface members.

At the time of the interviews, a new mine site delivery process was underway for Private Bozdağ Mining It was learned that the company had started mobilization to the site but had not yet started active work. Despite this, about a hundred workers who had already mobilized to the site became union members very close to the time of the interview.

There is a diversity in the union membership of civil servants in the public sector. On the days of the worker interviews, it was observed that civil servant status employees who were members of public unions held elections affiliated to Confederation of Right Workers Unions

Some of the workers at the mine sites who do not have civil servant status are not defined as workers in the mining sector. The reason for this is the definition of occupations and jobs according to NACE codes within the scope of harmonization with the European Union occupational and business groupings issued in the recent past. For example, it has been observed that support services who are actively working at mining sites, especially in subcontractor companies in lines of work such as catering and security, are excluded from the scope due to these regulations, despite their desire to become a member of Turkish Mine Workers' Union

> *"Other subcontractors have other unions, but not in our mining sector. There are friends in the subcontractors who cannot join us even though they want to. For example, the government passed a law six or seven years ago, they passed something called the NACE code. You know the private sector well. You prepare a specification for TKİ, it says I will have a repair and maintenance job for 300 people. This is also included in the law on trade unions, NACE codes. For example, Turkish Mine Workers' Union 03. Let's say you're in petroleum, we have your gold too. It belongs to Turkish Mine Workers' Union. ETİ Bor also belongs to Turkish Mine Workers' Union in 03. But let's say Koop İş has cleaning work, 0.4. For example, Hava İş, 0.5. Like this. We can't make members of places that don't fall under NACE code 03. The system doesn't accept them. For example, yesterday, there is a company from Diyarbakır that took the cleaning work. Since 03 does not appear in their code, the cleaning work goes directly to either Koop İş. But it is doing the side work of Turkish Mine Workers' Union and it is still working in our organization. Let me tell you about the contradiction. A man who enters TKİ today can come here to our GLİ as a repair and maintenance foreman or a cleaning worker. Since TKİ's main job is coal, it accepts both the operator, the man working in the workshop and the cleaning worker in the social center. It accepts the clerk and the 03 at the desk, because you can become a member of Turkish Mine Workers' Union. But in the private sector, for example, Maden does not accept repair and maintenance workers, cleaning workers, or cafeteria workers. The system automatically sends them to Tezkoop İş, which is affiliated to Türk İş, or Koop İş, or Hak İş has cleaning work. Even though they want to be members, they cannot become members. There is such a contradiction in the law." (Union representatives and manager)*

As a consequence of the interrelationship between neoliberalism and the mining industry, privatized state-owned enterprises are seeking new ways to reduce operating costs as a means of increasing productivity under the pressure of global and national competition. In some mines, operating costs are low for natural reasons, while in others they are relatively higher. As Miksel (1997) and Radetzki (2008) point out, this inequality leads to a dichotomy between companies and potential job

losses and wage stagnation, with private enterprises facing the risks of lost profits and reduced competitiveness.

When ÖEM took over the underground mines in GLİ from Park Teknik in November 2021 under the new royalty agreement, the workers who had previously worked for Park Teknik and were members of Turkish Mine Workers' Union experienced chaos, albeit for a short time. This situation paved the way for the former Park Technics employees and managers to enter the new company almost masse, with the guidance of the GLİ Operation management and the union of the employer. In this process, the workers faced the loss of almost all the gains they had obtained from the CLAs signed every two years since the old company had been operating in the region for nearly twenty years. During these developments, Turkish Mine Workers' Union conducted initial negotiations with the new company officials and signed the first CLA in the first month of 2022. However, the scope of this CLA is quite limited.

> *"Look, this year we signed a new contract with Ege Mining, where Park Technics was taken over. For example, they get double minimum wage, 8500 liras. What did we do on top of that, hodja, 14 liras a day for food, 300-odd liras came from there. They said we would abolish the shuttles, but we didn't. We paid 400 liras to the workers working inside the pillar and 200 liras to the substitutes. And union dues, close to 300 liras. We put that on the employer and said you will pay it. Normally it should be deducted from the worker's salary. My friends' salaries are now 9,000-odd. There is one more plus, we asked for bonuses, and he said he couldn't give them. Because I haven't sold anything yet, I haven't seen the production yet. But he said let's sit down again for 10 months, at the end of the year, let's make another contract...We will sit down again like this. We never went into these administrative clauses. We will go into those administrative clauses too. And he promised bonuses. We'll consider it a profit even if we get a month. There were 60 days of bonuses at Park Teknik. Every three months, he would pile it on top of 15 salaries. They were earning excellent salaries. If they were getting 9500 now, they were getting 15 thousand salaries. So, they will reach that level. At the end of the road, if we are lucky, we will do something like that. This is the advantage of being unionized. Now, in these collective labor agreements, you can't get it all at once. Hodja, think of it like this, we just sat down with the new employer. We moved up two or three steps. Next year we'll be at six or seven. The year after that, we'll push it to nine or ten. We will rise to the ceiling." (Union representatives and manager)*

The union's approach to the TFC can best be characterized as empathetic and conciliatory, seeking workers' rights through a time-bound strategy. This approach is also demonstrated by the workers at ÖEM, as identified in the sections above.

"Even the General Manager of ÖEM is very well-intentioned, unfortunately, because he came from TKİ. He says, 'I want my workers to get more than what the workers in Soma get. He is that good. But he wants to see the money I earn. They can't sell coal properly yet. Right now, they are extracting it, they will build a lavatory, wash it in the lavatory and sell it to the market. Coal is very valuable right now. In the past, no one was looking at it, and now coal is very valuable, especially this year. We have a coal voucher (for GLİ public workers) that we receive as a union right for our fellow workers, six tons per year. Last year they were selling it for 3000-3500, now they are selling it for 8500-9000. Coal has become very popular." (Trade Union Executive)

8.3.2. The Transformation of Mining Labor and Work Ethic

For mining unionism, the Soma and Ermenek accidents in 2014 stand out together with mechanization as a trigger of transformation. The improvements made in the wages and personal rights of underground labor with the legal regulations made after the accident are considered important. In addition, the changes in the working comfort of workers caused by the use of fully mechanized systems in Tunçbilek fields are also important.

"After the death of 301 people, the laws changed. The only plus was the double minimum wage and two days of vacation. Of course, I know the working conditions underground very well. I was the chief clerk at the mouth of the quarry, at number 6. I myself worked as a reporter for two years on the mechanized pillar. Now, my friends working on the classical pillar were so tired, they were taking six or six mirrors, for example. Or 35 dismantling. When the man did that, he could hardly come to work the next day. But in this mechanism, when the foot works, the worker rests. I mean, the machine cuts and cuts and cuts, and then the reinforcements hold on. It is not very tiring." (Union Executive)

Apart from the enterprise and private companies, training organized by the Union on Occupational Health and Safety is also organized from time to time. On the one hand, these training courses aim to increase the level of knowledge of the employees, on the other hand, it is desired that the workers socialize socially and develop solidarity relations with the social activities that follow the training. However, after the Soma disaster, social activities have been replaced by organizations with charity dinners on the anniversary of the accident.

"For example, the last seminar was organized in Yoncalı with the support of the European Union. It was about worker health and occupational safety. At the thermal hotel in Yoncalı, we asked for three friends from each service,

especially the ones who never go. So that everyone can eat the cake slice by slice, so that the same people don't always go. Three or four from the underground, three or four from the open pit. We had nearly 20 people there for three days, professors came, professors. There were professors from Europe. Also, until 2014, every year, our union has a hotel in Antalya. There is a manager there. Our unionist friend had an agreement with him, you will pay this much rent per month, but in September, in March when tourism is weak, I will hold seminars, I will bring this many people, say 1000 people, members of Turkish Mine Workers' Union, we will hold group seminars here. Professors from METU or Gazi come, they give three days of lectures on occupational health and safety and economics to raise awareness. There are breaks from morning to noon, tea and so on. A 45-minute lecture with a 15-minute break. Of course, the afternoon is free time. Friends go to the sea and swim. But after the accident in Soma, we can't do that seminar right now. The friends in Soma are afraid. We are holding a seminar there even before the pain of 301 people has dried up. Of course, there is entertainment in the evening, artists come. These things spread a lot on social media. Our workers died, no one does anything about it, they are having fun in Antalya. They are a bit afraid of that reaction. But now we have turned to day-to-day things. We have a conference hall here. We have a very nice, modern hall. We have a very nice, modern hall. We have general assembly's here; we have daily trainings like this." (Union Executive)

"People in the 50-55 age group are more mature, more disciplined. They are more salient to work. We have friends who are more dedicated to work and spend a full 7.5 hours working. But the younger generation does not have these. Because of their moral upbringing." (Union Executive and Union Representatives)

8.3.3. Problems Caused by the Solidarity Dues

Some workers at the GLİ Underground Quarry criticized the fact that there was no difference in salary between heavy work and relatively easy work after the base salary practice introduced by the salary regulation in 2014. The union was expected to step in and take corrective action/make demands, but when the demands were not met, they resigned from the union membership.

"I swear this is how it was included in the omnibus law. In fact, the other friends resigned from the union because of a reaction. They can't understand this, but when you join a union, you are under an umbrella. You are under a guarantee, under a roof. Love us or hate us. Every four years there is an election, we say change us. The guy who resigned was at 110 for a while, now he is down to 60 or so. It's that normal, hodja. Some of them resigned just to be a man. Men who are upset because the chairman, the supreme board or the representative did not give the green light here. That also happens in normal parties. Some of them are people who are friendly with

them but can't return because they don't want to do wrong to their friends." (Union Representatives and Executive)

Another development that led to mass union resignations was the introduction of the 'Solidarity Dues' regulation. With this regulation, workers can benefit from the rights obtained within the scope of the CLA without being a member of a union, but by paying a solidarity dues to the confederation affiliated to the union organized in that line of work and party to the CLA. This eliminated the obligation to be unionized in order to benefit from the rights gained and the process was seen to encourage deionization.

"According to the current constitutional law, if the worker pays a solidarity dues to the union, they can benefit from all the rights of the union. This is actually killing the union. If everyone does this, will there be a union here? No. First of all, secondly, they cannot benefit from the following. We cannot defend them when they are recourse to the disciplinary board. Those who pay dues and are not members. Non-members go to the disciplinary board with the same punishment. This is the victimization of not having a union. There is also the issue of recourse. Let's say you damage a machine or equipment at the workplace. They recourse this to the worker. The devices and machines we use now are very expensive machines. I can't imagine the cost of a 120-ton Komatsu that was just mentioned. Or a cutting machine or a support underground. When there is a recourse regarding this, the union can step in and reduce the price. It has done it in time. With mutual negotiations in good faith. But those who pay solidarity dues do not have such an armor. How much is this, say 500 billion? You will pay 500 billion. He cannot benefit from the disciplinary board and recourse. But this harms all unions, not only here, but all unions. There is no difference between a member and a solidarity dues payer. However, financially the same dues are deducted, the union deducts the dues. Okay, the money goes to the union. Let me explain it this way, you go to Tavşanlı by taxi, I go by bus or train. It's the same thing, the money goes to the union again. But the number of members is decreasing here." (Union Representatives and Executive)

As mentioned above in the section on meaning of the union in the perception of the workers, the union has an individual legal function rather than a mean for class struggle for the workers. This view is also shared by the workers' representatives; trade unionists. Worker representatives also limit the function of the union as an institution that supports the individual legal struggles of workers. In this sense, the union is not primarily a mean for class struggle and class politics, but rather an organization that defends the individual rights of workers on a micro scale level. In this context, the solidarity dues are an important gain that neoliberalism has achieved

in the negotiation processes with underground mining. Thus, it can be considered as the embodiment of the Laissez-Faire approach by pushing the social and economic structures emphasized by Friedman (1962) out of control.

On the other hand, ss a result of deliberate policies targeting strong union activities, the union's top management continues its efforts before the government and the judiciary. Another consequence of the solidarity dues is the recruitment of members in favor of union structures seen as moderate by administrations. In authorization or bargaining processes, this is presented to workers as an easy way to benefit from rights.

> *"Since this is a problem throughout Türkiye, the president of Turkish Labor is also uneasy about this. The Constitutional Court had just given a new ruling at that moment. Previously, a man who paid solidarity dues could not vote for the union in the elections, and secondly, we get a lump sum difference every two years. This year my friends received 11-12 thousand liras each. We get the difference in raises for the period of the retroactive contract. That's quite a nice amount of money, 12 thousand liras. These friends could not get this money according to the law. The Constitutional Court corrected this after someone from the Istanbul Municipality filed a lawsuit. It said that if the man pays solidarity dues, he pays solidarity dues or membership dues, the employer pays this money. When they heard this, some of them took courage and resigned." (Union Executive)*

CHAPTER IX

CONCLUSION

In the analysis of the two basic assumptions of the research in the light of the data from the findings section, various conclusions were reached in different contexts in relation to both assumptions.

The first assumption is that neoliberalism has a negotiating relationality with underground mining.

As emphasized above, the Soma and Ermenek disasters in 2014 led to significant changes in the course of neoliberal policies dominating underground mining in Türkiye. In this context, 2014 is an important intervening factor. Beginning with the January 24, 1980, decisions and the subsequent structural adjustment policies, the process of declining importance of trade unions, precariousness, privatization and lack of supervision lost its momentum in 2014 as a result of negotiations with neoliberalism. In fact, it has changed with the effect of increasing social pressure and opposition has come to a position of compromise.

This change has manifested itself especially in improving the working conditions of underground miners, increasing their wages, overtime, and leave. With the Omnibus Law No. 6552, which came into force in 2014 after the Soma and Ermenek disasters, the regulations, which include that the lowest wage of miners in underground workplaces where lignite and hard coal are mined cannot be below twice the minimum wage, that working hours will be reduced and overtime pay will be increased by 100 percent, and that each day worked underground will be calculated as one and a half premium days, indicate the political will to compromise the neoliberal position in this negotiation process. Prior to Law No. 6552, workers in underground mines were granted the right to early retirement, and the tightening of

occupational health and safety legislation enacted in 2015 and the professional qualification regulations for the standardization of occupations can also be evaluated within this framework.

Although very important steps have been taken in terms of legislation, the lack of mechanisms that enable these legislative improvements to be audited in underground mines is an important deficiency. The Bartın-Amasra underground coal mine accident of October 14, 2022, in which 42 workers were killed during the writing of this thesis, also revealed the inadequacy of the inspections and the lack of measures to be taken as a result of the inspections. During the eight years that have passed, it is seen that the changes in the legislation have not been adequately reflected in the field, and that gaps in the de facto situation continue due to the lack of supervision and implementation in the field. This indicates that neoliberal deregulation and irregularity have not yet lost their impact on underground mining.

On the other hand, with the OHS regulation of 2015, it is seen that technological developments in the monitoring processes of underground workers are used quite efficiently. As mentioned above, new control and supervision mechanisms similar to the panopticon design that Foucault conceptualized by metaphorizing the concept of surveillance in modern society are used in underground mines. With PARS (Personal Attendance Recording System) software and similar applications, worker attendance, whether workers follow instructions and progress on the job can be controlled and supervised. Not only workers but also production can be monitored using similar high-tech applications and used in productivity calculations.

As noted above, electronic monitoring systems have become widespread in mines, but these processes have found widespread use as part of emergency procedures as well as inspection-disciplinary processes. In other words, while the technological innovations that enabled the implementation of the regulation in 2015 could be used for the control and supervision of workers and production processes, there was no initiative to use this technological infrastructure within the scope and implementation of the Omnibus Law No. 6552 that entered into force a year ago. The reason behind this lack of initiative points to the fact that the process of negotiation with neoliberalism is a result of necessity, not initiative.

Indeed, it is also observed that there has been no change in privatization, de-unionization and precariousness, which can be considered the hallmarks of neoliberal influence. In fact, it is observed that the privatization and subcontracting process, which is the embodiment of the neoliberal effect, continues as it is, and that royalties have increased. At this point, it is possible that the legislation may be structurally easier to implement in large enterprises, but in subcontractor companies where the scale of production and employment is smaller, it will be more difficult to implement due to cost calculations, and the possibilities of supervision will be limited. When we look at the data on mining accidents in Türkiye presented above, it is seen that, especially after 2014, accidents involving fewer workers in small enterprises are more frequent than accidents involving mass worker deaths. Moreover, these assessments do not include illegal mines. The existence of small and unregulated underground mines, which neoliberalism does not need to negotiate with, continues to reproduce this binary structure in the mining industry.

A similar pattern, namely the conclusion that the political will to negotiate with neoliberalism does not do so on its own initiative, but out of necessity, is consistent with the data that there has been no change in the process of de-unionization of workers. As mentioned above, the process of de-unionization continues in different dimensions, as can be clearly seen especially in the quotations on this issue. In this process, two important dynamics stand out: First, the devaluation of being unionized, and second, the emergence of an ambivalent structure with the "solidarity dues" regulation, which weakens the position of the union and the union struggle in the workplace, as workers benefit from CLA rights without participating in union activities.

As stated in the first hypothesis of this study, the impact of technological developments on neoliberalism's negotiating relationality with underground mining exhibits a similar pattern to the other dynamics we have evaluated above. Technological developments are not considered as an element of negotiation with neoliberalism, but rather as a means of ensuring the legitimacy of neoliberal practice, despite the changes that the political will necessarily makes in the legislation. For example, the functionality of the e-government system in union membership and the use of information and financial technologies in the collection of union dues have

been highly optimized. Moreover, as mentioned above, the use of technological infrastructure in the processes of control and supervision of the worker is also encountered in the trade union process.

The fact that the union dues of the workers working at the ÖEM, which is a private enterprise, are covered by the company has made it possible for the company to take an intermediary position in the workers' relations with the union. This has made it possible for the firm to add another apparatus to its apparatus for controlling and supervising the worker, and moreover, it has provided a hegemonic power to establish a paternalistic structure between the firm and the workers.

The practice of "solidarity dues", which allows workers to benefit from the CLA without being union members, has also provided an important output towards the devaluation of the union. This can be considered as an achievement of neoliberalism in negotiations. Through these two dynamics, the process of workers resigning from their union membership, which is the most basic organization of workers, continues.

Another issue that triggers the dual structure in the mining sector, where neoliberal hegemony continues and which is outside the scope of negotiations, is the production of minerals in two mines within the same license area, one by the state and the other by a private company through royalty. In a sense, this is the continuation of the process that started in the 2000s. One of the most striking issues here is the loss of rights experienced by the workers in both mines due to the difference in the status of the employers, even though they are members of the same union in terms of union activities. Although the workers in the private company work in the same basin, do the same work, and produce the same product, they work under more unfavorable conditions and have fewer fringe benefits. In addition, as a result of the ownership turnover in the private firm and the frequent change of employer, it is seen that certain wages and social rights are further scaled back with each change. On the other hand, union officials, who remain under the hegemony of neoliberalism, act with the understanding of "minimum conflict" with the employer and prefer to carry out limited activities in the areas determined by the employers. This can be considered as a concession against workers in the negotiations with neoliberalism.

In contrast to such approaches of private firms, union officials act on the principle of minimum conflict in order to realize the labor relations defined in the constitution and relevant laws. Thus, the union, which makes concessions in negotiations with neoliberalism, develops strategies to act within the boundaries set by the employer in order to minimize problems. In a sense, the relationship between the union and the employer is a symbolic envisioning of the symbiotic relationship between neoliberalism and mining.

The second hypothesis of the research is the effects of the technological transformation of neoliberalism on underground mining in order to maximize productivity and profitability. This thesis questions whether these technological innovations have an impact not only on job descriptions, but also on work culture and ethic and worker values.

As detailed in the research findings, it is seen that technological transformations in underground mining entered Türkiye in 1987, albeit with a delay, with the aim of increasing production efficiency, reducing the labor force working underground, eliminating human errors and reducing the risks that workers may be exposed to in OHS issues. As detailed in the table below, the jobs in the Tunçbilek underground coal mine were categorized under three types:

- Groups of workers with traditional continuity,
- Worker groups in which there is a transformation in the way the work is done with technical changes, but there is continuity in the job description,
- New groups of workers (previously undefined, non-existent jobs).

Although the introduction of technological devices in underground mining and the partial mechanization of mining has transformed the nature of work performed by some groups of workers, it has not had an impact on some areas.

A parenthesis should be opened here on the issue of "gender". With the impact of neoliberalism and, even more effectively, the application of new technologies to underground mining, the use of women's labor underground has slowly begun to be discussed as a result of the relative decline in the importance of muscle power. As is known, women are prohibited by the relevant legislation from working as laborers in underground mines. Although not included in the research problematic, some

participants in the interviews stated that the legislation could be reconsidered as a consequence of technological developments and that women's labor could be utilized in some work groups. The fact that these statements were made by a group of workers where conservative values are important is valuable and can be considered as preliminary information for future studies. It may be meaningful to examine the issue not only in relation to the introduction of new technologies into underground mining, but also in relation to the labor regime of neoliberalism.

It is not possible to talk about a change or transformation in "recruitment processes", which can be considered within the scope of change and transformation in the nature of the work performed. It can be said that neoliberalism has maintained the status quo in its interaction with the traditional mining industry. On the other hand, there have been some partial transformations in subordinate-superior relations in the workplaces. However, due to the fact that underground mining requires a lot of attention and that the chain of command is vital in preventing occupational accidents, it is observed that subordinate-superior relations are nevertheless defined quite sharply, and these definitions are respected. A minor differentiation is observed between public and private enterprise workers. Workers in public enterprises have a more protected position than those in the private sector when it comes to disobeying the orders of their superiors. This situation is also meaningful in terms of the processes of neoliberalism dividing labor markets and making and receiving concessions on the ground of negotiation.

As mentioned above, structural innovations such as improvements in the leave regime and reduction of working hours, as well as the retention of the shift system after the mine disasters, have recently emerged in underground coal mining and are a concession that can be considered as a gain in favor of underground miners in the negotiation with neoliberalism. In line with the neoliberal understanding, the "bonus system" is also considered to be effective in improving working conditions. In addition to improvements in the leave regime, working hours and the bonus system, increasing the professional knowledge and skills of workers also has a direct impact on worker welfare. Increasing professional knowledge and skills is also one of the important inputs of the change and transformation in worker typology.

A remarkable change and transformation have taken place **in the process of acquiring vocational skills.** While this pattern is partially preserved in the traditional vocational skills acquisition process where experienced workers pass on their knowledge and experience to new workers, with the increasing use of technology, formal vocational skills acquisition tools have become more widespread and sometimes even compulsory. By job training, courses and seminars enriched with vocational skills training can be supplemented by technical trainings provided by equipment suppliers. Altogether, it can be said that neoliberalism, in its interaction with the specificity of underground mining, has created a new typology of workers whose knowledge and skills are increased in terms of vocational skills as well as improved working conditions. From the employer's perspective, this new position is also an attempt to increase operational efficiency. Increasing the knowledge and skills of workers also makes it possible to increase the productivity of underground mines. This reinforces the mutual existence of both structures and ensures their sustainability.

On the other hand, interviews with employers revealed the opposite view. While the formal education level of workers has increased in the changing worker profile with technology and mechanization, employers also expressed the view that the increased level of education is not reflected in worker productivity. On the contrary, they believe that workers with lower levels of education but with "a good hand for digging and shoveling" are more successful and productive. There is a paradox here. On the one hand, employers do not believe that a workforce with a high level of formal education is productive, while on the other hand, with technological change, they prefer workers with high judgment. This ambivalence is only meaningful in negotiating the imposition of specific working conditions in the interaction of underground mining labor and neoliberalism.

Yet another issue on which employers rant is the "work ethic" of workers. Employers also point to a deformation in the work ethic of workers, claiming that the new typology of workers is "comfort-loving" and unenthusiastic about production. This view was particularly prevalent among managers in public enterprises. This ambivalence can be seen in this case as well, since on the one hand, there is the juxtaposition of traditionally acquired labor rights, which have been somewhat

protected from neoliberal erosion through negotiations, and the tightness of the neoliberal discourse of efficiency.

Furthermore, the geological formation and conditions of the underground can often create obstacles to the desired levels of production efficiency, thus reducing the efficiency of technological investments and new machinery. In terms of the appropriate selection of new technology, private companies have used semi-mechanized systems suitable for the geological formation of Tunçbilek coal mines based on efficiency. In the publicly owned mine, on the other hand, the use of fully mechanized systems in the same geological formation led to negative results in terms of productivity. As if confirming the global systematic discourse of neoliberalism against the role of the public sector as an employer, the fact that the public enterprise does not make technological investments that are fully appropriate for the mining sites also enables the discourse of the inefficiency of public enterprises by providing the opportunity to conceal the destruction caused by neoliberalism in the control mechanisms of the public sector and gives neoliberalism an advantage in negotiating with neoliberalism.

The employer's perspective of increasing productivity is shared by the employees, and in the interviews, it was observed that workers, especially those working in private firms, share the aim of ensuring the production efficiency of enterprises so that the enterprise and the employer win. In this way, workers believe that they ensure the continuity of their jobs and wages.

This situation can be read as an indication that neo liberalization has realized its hegemonic supremacy over the worker typology. In this context, it leads to differences in the perception of the concepts of productivity and performance between public workers and private firm workers. This is because public workers have an efficiency perspective in which the belief that the coal produced is "a value of the nation" rather than the efficiency of the employer is the main motivation. This situation gives important clues about the meaning that workers attribute to their work.

An important factor that determines the meaning that underground coal mine workers attribute to their work coincides with the values attributed to the work by the society.

Notions such as the sanctity of work and its contribution to the national economy are important references that workers use to define their work. However, the risks involved in underground mining work are also an important parameter in the meaning of work. In this context, the sacredness attributed to work sometimes leads to the strong use of religious motifs. In recent years in Türkiye, neoliberalism in combination with religious rationalization processes has had an impact on the processes of making sense of work not only for mine workers but also for the working class in general. When this country-wide trend is integrated with the nature of underground mine workers' work, it is seen that the phenomenon of "resorting to God" is very profound, as revealed in the interviews. As a matter of fact, for workers, the phenomenon of literally "the nature of work" has an important position in making sense of their work. By defining their work as a "struggle with nature", workers show that they are in a perception that is far away from the effect of alienation. In this context, another point related to the workers' positioning far from the effect of alienation is the "liberating" atmosphere that underground mine workers construct about their work among the dynamics of making sense of work. The interviewees who stated that they feel freer underground have an "independent" work atmosphere isolated from the alienating work processes above ground.

This emancipatory atmosphere, the "perception of work", which is far from the effect of alienation, yet close to God, and moreover, which coincides with the interests of the nation and the state, is also effective in forming workers' value judgments regarding work ethic. As a result of this situation, there is a significant commonality in work ethic and value judgments. In this atmosphere where the existing technological developments and the partial transformations created by these developments in job definition and division of labor, and more importantly, the individualist effect of the neoliberal ideology that has spread throughout the society cannot be manifested or at least can only affect it on a minimal scale, it can be argued that the commonality in the value judgments of underground mine workers continues with the effect of the factors mentioned above. This situation allows us to understand another dimension of the negotiation with neoliberalism.

It is demonstrated that class and status differentiation, which may constitute an obstacle to the commonality of value judgments, does not have a negative impact on

this commonality. In underground mining, the definitions and responsibilities of titles are very clear, the boundaries of responsibility and subordinate-superior relations are very sharp, and despite this sharpness and clarity, workers define each other as friends and or buddies. "Being a team" is an important notion here, and one of the most important prerequisites for being a team is the trust between workers in the same team, even if they have different positions and status. For workers who entrust their lives to each other in difficult and risky working conditions, trust in their colleagues is essential. Honesty also strengthens this sense of trust. Indeed, in underground mining, it is understood and internalized by all workers that if work is not done honestly, workers can pay a heavy price. This is the most resistant point of negotiation with neoliberalism in the interaction of neoliberal work culture and underground mining labor.

On the other hand, it should be noted that there is a differentiation in the perception of honesty between private and public enterprises. The striking point here is that while public employees emphasize the state or common values such as friendship and unity of fate, workers in private enterprises emphasize team performance in common values. This situation can be considered as a reflection of the fragmentation of the labor market depending on the type of employer in the negotiation with neoliberalism and its impact on the work culture. Nevertheless, team performance can continue to exist uncompromisingly in place of neoliberalism's emphasis on individual performance.

Another factor that supports the **sense of trust**, which is of vital importance for workers, is the respect they have not only for their work but also for their colleagues in the same team as them, and an important component of respect is merit. Workers are confident in the merit of their trusted colleagues, and this has the effect of reinforcing their feelings of trust and respect for their teammates.

A strong pattern of **solidarity and cooperation** is kept alive through a sense of respect and trust for both the work and the coworkers, as well as a commonality in the values of honesty. Although we talk about the mechanical-technological transformation in underground mining, a life-and-death struggle continues in the reality of the workers as a result of the risks inherent in the nature of the work.

Although the mechanical-technological transformation has partially reduced the importance of body power, the existing and potential dangers of underground mining persist, and the importance of a strong solidarity and solidarity network in the elimination of these dangers is vital for workers.

The common values listed above point to the strong construction of a group belonging among workers. At first glance, one may think that this group's belonging may overlap with class consciousness. However, the fact that the constructed value judgments are supported by religious references, partly due to ideological and social motivations, is an important barrier to the evolution of this group consciousness into class consciousness at a time when God and the State have become so close to each other in Türkiye and neoliberalism has strengthened its hegemony.

The strong religious references also lead to the assimilation of the values of perseverance, patience, austerity, fate and fate as the ethic of underground mining work. In this context, as a result of the negotiations, it can be said that the limits of neoliberalism, which "protects" workers' rights in the legislation, in creating the work ethic of a new worker typology are drawn by religious references and the neoliberal hegemony that exploits and instrumentalizes these references.

An essential component of this boundary is the emphasis on "domestic" and "national", one of the most important ideological discourses of political hegemony in the last two decades. The discourse of being "local and national" is not constructed against neoliberal hegemony, but rather with a motive to support its implementation and harmonization at the local scale as a version of neoliberal policies within the borders of the nation-state. This is particularly strong among underground coal miners, who define their work as "good for the homeland and the nation" with a developmentalist approach. In this context, the "domestic and national" discourse can be considered as a factor that acts in tandem with nationalism and conservatism, reducing its impact on the new worker typology in the negotiation processes towards neoliberalism.

It can be said that the developmentalist "domestic and national" discourse of the workers is, as expected, also adopted by the employers and at this point they can instrumentalize it to strengthen the illusion of "unity of fate" with the workers. One

of the biggest pillars of this discourse is Türkiye's dependence on foreign energy. Considering that a significant portion of energy is produced from fossil fuels and that the fossil fuels used for energy production are largely imported from abroad, the emphasis on "domestic and national" by employers and workers gains even more meaning. Both workers and employers are aware that every ton of coal they mine has a direct equivalent in the national wealth, and this awareness is one of the most important factors of commonality in values. On February 24, 2022, with Russia's military intervention in Ukraine, the global energy crisis and rising energy costs have also increased the importance of this awareness.

Nevertheless, at this point there might appear a discussion in a conceptual disagreement. On the one hand, the coal extracted provides a direct input to Türkiye's national economy, and on the other hand, it is claimed to cause great damage to the ecology of our country, where the climate crisis is becoming more and more severe by the day. However, workers' shared values are strengthened by the fact that they attribute value and even sanctity to the quality and importance of their work, and that this value and sanctity is reproduced by a wide range of actors outside of themselves. For example, the sanctity of coal miners' work and their sweat is a supra-political value. In fact, even in cases where some segments of society question professions such as doctor and teacher, which are often ascribed sacredness, the professional value and status of underground mine workers are not questioned by any social segment in any way. The hardworking workers who struggle against nature, in a life-and-death struggle, and who directly contribute to the national economy are accepted by all segments of society and can be taken as a reference from time to time in negotiations with neoliberalism to make concessions in favor of workers.

Due to the fact that mine workers, who are in a struggle against nature in difficult and risky working environments, are actors of a common destiny, the division of labor built on the axis of solidarity and interdependence, based on respect, honesty and trust, together with an understanding nourished by fatalism and religious references, can produce atypical contradictions with neoliberal labor culture at different scales and layers of labor relations.

In this case, the technological and structural innovations that provide input to the work of underground mine workers cannot be expected to change and transform the work culture that the workers themselves have created at the same pace.

The frequent underground mining accidents in Türkiye, especially the Soma and Ermenek disasters, are thought to be effective in the formation of a social resistance to the individualistic work culture that neoliberal work culture emphasizes. This social resistance acts as a pressure that restrains neoliberalism. As a result of the relations that neoliberalism, which emphasizes reckless profit maximization, has created in the work culture, this social resistance can be embodied in social pressure and opposition.

This has led to a temporary and limited setback in negotiations with neoliberalism and the need for a concession to neoliberalism in the work culture of underground coal mining. However, neoliberalism continues to exacerbate and even reproduce its presence in underground mining outside the underground galleries.

Even though neoliberalism is in a cycle of producing and reproducing itself, it is clear that this process has limits set by nature. In cases where the helplessness of human systems against nature takes shape, for example, explosions in underground mines, cave-ins, earthquakes, floods and other natural disasters have limiting effects on the implementation and reproduction of neoliberal policies. The Kahramanmaraş-based earthquakes of February 6, 2023, which we can characterize as much larger-scale imaginings of accidents in underground mines, reassert the fragility and helplessness of neoliberalism against the laws of nature.

It is ironic and symbolic that the first reaction to those trapped under the rubble in earthquakes comes from mine workers, and that mine workers from all over Türkiye immediately participate in search and rescue activities in the earthquake zone. It can be predicted that the negotiations with neoliberalism, which we have elaborated in this thesis, will also be established in the process of reconstruction of earthquake zones. Undoubtedly, in this new process, the phenomenon of social resistance to neoliberalism may reveal the potential to shape social structure and social movements on this axis.

In relation to one of the two assumptions of this thesis, it could be asked the following question:

Has neoliberalism come to an end?

As in the relationship, and example of the climate crisis and the current economic system, the concerns of notable capitalists/capitalist centers about the sustainability of the system have been gracing the headlines for the last decade. Naturally, the question of whether neoliberalism has come to an end is being asked by various circles. First of all, as one of the conclusions of this study, it is worth noting that neoliberalism has not come to an end.

As is known, the patterns formed by neoliberal policies with the traditional/historical economic organizational structures of peripheral countries do not show the same continuity relationship when compared to the patterns of developed countries. A similar situation is observed in sectoral differences. The theorization of the market mind in social life as emphasized by a white-collar Bourdieu or the dominance of the market hand in work culture as Foucault states does not proceed in the same linearity in the mining sector. The specific conditions of mining mentioned throughout the study cause disruptions/regressions in the flow of neoliberalism that is trying to become entrenched and make negotiations possible. As in the case of the Soma and Ermenek disasters, many neoliberal moves such as lack of supervision, low wages, high turnover, the structuring of working conditions in favor of capital and production pressure can ultimately fall backwards in terms of the macro internal logic of the ideology, from wages to the improvement of working conditions. The non-linearity of policies at various scales should not lead to the conclusion that neoliberalism has been abandoned in countries like Türkiye. In fact, neoliberalism still tends to spread in full force in areas such as privatization, de-unionization and the withdrawal of the state from areas of control and surveillance.

Another question related to the other of our assumptions might be:

Is a new typology of worker emerging?

The geological formation of Turkish mines, which limits production to certain techniques, seems to be the biggest obstacle to the formation of a new typology of

workers shaped by neoliberal ideology, and negotiations in this area continue. While the issues of technical-technological and social embeddedness of ideology, which have the potential to produce and trigger each other, can easily spread outside, in underground production they can remain within the limits allowed by the gallery and drawn by the necessity of solidarity/trust. Capillary and lenticular reserve branches limit the workers who can specialize through the use of technology. On the other hand, when the worker, who has been exposed to all the stimuli of neoliberalism in his daily life, enters the gallery, instead of his colleagues with whom he can compete or act with the motivation to earn more, he finds his brother or sister with whom he must trust to the end, be in solidarity to the end and share the same conditions regardless of the name of his job.

The unique position of underground mining, where the limits of nature, technology and human beings are pushed and used at the maximum level; traumatic accidents due to the reduction of production costs applied side by side with the lack of supervision and public attention, force the structures fed by neoliberal policies to both technological changes and technological investments. On the other hand, the negotiation with Neoliberalism continues in terms of precarious and low-wage labor policies aimed at profit maximization, which is seen as an extension of neoliberal policies.

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APPENDIX

APPENDIX 1 – SURVEY DIRECTIVE

MIDDLE EAST TECHNIICAL UNIVERSITY

INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT of SOCIOLOGY
FIELDWORK QUESTIONS

The answers to this section, which is the field application of the Middle East Technical University Social Sciences Institute Sociology Department Program titled as "Negotiation with Neoliberalism: The Mining Industry in Tunçbilek Underground Mine, Türkiye", is going to be evaluated in order to submit a thesis to the above-mentioned department in accordance with the rules of a scientific ethichs.

Melik Zafer YILDIZ

Sociologist

Interview Number:	
Interviewer:	
Interviewee:	
The Location Where Interview Took Place:	
Interview Date:	/ / 2022
Data Entry Date:	/ / 2022
Check:	

2022

A- HOUSEHOLD INFORMATIONS	
1. Since when are you living here as a household/family, together?	
2. Why did you live in here?	1. I was born here. 2. I came with my family. 3. I got married. 4. Because of working 5. Because of social factors 6. Other (….
3. Do you live in here permanently or seasonally?	1. Continously (Continue with sixth question) 2. Seasonally
4. If you are living here seasonally, how many months of the year are you spending time here?	
5. What kind/type of house you live in?	1. Independent detached house 2. The detached house adjoining with a single wall 3. A floor in an apartment 4. Other (…
6. What is the ownership status of your house?	1. Host 2. Tenant 3. A relative's house (not paying rent) 4. Jodging 5. Other (…
7. What type of building structure do you live in?	1. Iron Concrete 2. Steel 3. Wood } Skeletal
	1. Briquette 2. Stone 3. Brick 4. Adobe } Agglomerate 5. Other
8. Including the living room, what is the number of the rooms of the house you live in and how many square meters is the total area that has been used?	**…… room**
	…… m^2
9. What sort of heating system has been used in your house?	1. Stove 2. Heater/comni 3. Electiric Heater 4. Other (…

B- WHAT IS THE MAIN SOURCE OF LIVING FOR THE HOUSEHOLD, CURRENTLY?

1- Income from the livestock
2- Income from the agricultural output
3- Income from the beekeeping output
4- Income from the working in the mine
5- Income from the commercial output
6- Paid/regular jobs
7- Paid/irregular jobs
8- Pension salary
9- Age pension
10- The other output from other business (…

C- WHAT IS THE SECONDARY SOURCE OF LIVING FOR THE HOUSEHOLD, CURRENTLY? (You are able to mark more than one answer)

1- Income from the livestock
2- Income from the agricultural output
3- Income from the beekeeping output
4- Income from the working in the mine
5- Income from the commercial output
6- Paid/regular jobs
7- Paid/irregular jobs
8- Pension salary
9- Age pension
10- The other output from other business (…

D. WORKING STATUS-CONDITIONS IN THE MINE	
1. Is there anyone working in the mine in your hosehold except you?	1 Yes (how many: …) 2 No: (**Contiune with the third question)**
2. What are the employement qualifications of the people working in the mine?	1 Regular qualified employee 2 Regular unqualified employee 3 Irregular, qualified seasonally 4 Irregular / unqualified seasonally 5 Others, please specify:
3. If there are not any mine workers in your hosehold, what sort of reasons are there?	1 They are farming employee 2 They have agricultural production 3 They have commercial activities 4 Civil servant or private sector employee 5 There is no regular working condition in the mine 6 They are unqualified to be able to work in the mine 7 It is hard to access to the transportation to the mine 8 It is hazardous working in the mine 9 Other, please specify:

E. INCOME STATE	
7.1. Please write down your annual incomes:	
	Income (TL- Annual)
Income from working in the mine	
Income from livestock	
Income from agricultural activities	
Income from forestry activities	
Income from commercial activities	
Civil servant/worker salary (except from mine activities)	
Income from seasonal working	
Pension, salary	
Old age, pension	
Income from the rents	
Social and payments	
Other(…	

7.2. By comparing to yourself, what you think about your childrens' social and economical well-being would be, you think?	1. It would be much better 2. It would be better 3. It would be the same 4. It would be worse 5. It would be 6. It would be the worst

7.3. What sort of issues you would be prioritize so that your children might have a better future? (Multiple options- up to 3 options)	1. A capital accumulation, by opening a business for my child 2. A vocational or apprenticeship tranining to access my child to a job 3. Collage education 4. Moving my child to another area where conditions would be better 5. Moving my child to bigger city 6. Moving my child to abroad 7. A political career 8. Other (…

APPENDIX 2 – TABLE OF THE HOUSEHOLD

No	Ad (1. sıraya görüşülen kişinin ismi yazılacak) Misafirler dahil edilmeyecektir.	Cinsiyet 1 Kadın 2 Erkek	Doğum Yılı	Hane reisine yakınlığı 1 Evin reisi 2 Eşi 3 Oğlu/ kızı 4 Gelini / damadı 5 Torun 6 Anne/ babası 7 Kardeşi 8 Yenge/ enişte si 9 Dede/nine 10 Evlatlık 11 Diğer akraba	Medeni Durum 1 Evli 2 Bekar 3 Dul/ eşi ölmüş 4 Ayrı yaşıyor	İkamet Durumu 1Kalıcı olarak evde yaşıyor 2Uzakta çalışıyor - en yakın ilçe 3Uzakta çalışıyor - Türkiye'nin diğer yerleri 4Uzakta çalışıyor – diğer ülke 5Uzakta öğrenci - en yakın ilçe 6Uzakta öğrenci - Türkiye'nin diğer yerleri 7Uzakta öğrenci –	Eğitim Durumu 1 Bilmiyorum 2 Okula gitme yaşına gelmedi 3 Okuma yazması yok 4 Okuryazar 5 Okul öncesi Kreş, anaokulu 6 (1 – 4) 7 (5 - 6) 8 (7 - 8) 9 (9 – 10) 10 (11 – 12) 11 Teknik okul 12 2 yıllık üni. 13 4 yıllık üni. 14 Yüksek lisans ve ü	Çalışma Durumu (Birinci İş Durumu) (12 ve üzeri yaştaki bireylere sorulacak) 1 Ücretsiz aile işçisi 2 Düzenli ücretli 3 Yevmiyeli/ Mevsimlik işçi 4 Çırak 5 Kendi hesabına (esnaf, vs) 6 İşveren (yanında işçi çalıştıran) 7 Emekli 8 Çalışmıyor (YAN soruya	Çalışmama nedeni (12 ve üzeri yaştaki bireylere sorulacak) 1İş aramıyor 2 İşsiz 3 Mevsimlik işçi 4 Öğrenci 5 Ev hanımı 6 Emekli 7 Yaşlı 8 Engelli 9 Kronik hasta	İşsiz kaldığınız süreyi belirtiniz: (AY)	Ek iş yapıyor musunuz? 1Evet 2 Hayır	Kişinin ne tür bir sosyal güvenliği var? 1Yok 2 Dil/konuşma 3 Kronik rahatsızlık 4 Ruhsal ve duygusal 5 Zihinsel 6 Ortopedik 7 Görme 8 İşitme 9 Diğer	Engel /hastalık durumu (Birden fazla cevap işaretleyebilirsiniz) 1 Yeşil Kart 2 SSK/SGK 3 BAĞKUR 4 Emekli Sandığı 5 Yok

APPENDIX 3 – IN-DEPTH INTERVIEW DIRECTIVE

In-depth Interview Directive

(The Underground Miner)

A- A Starting Up To the Work-The Qualification

1- Have you ever worked in other kinds of jobs before? If so, can you explain and exemplfy in order?

2- How did you choose your current mining employing? How and why did you become a miner?

3- While choosing this work, who guided you? Who helped you to get the job?

4- What did you know about this job when you have first got into it, would you explain? (Who are your instructing, where are you in the prosess of the job, well; do you have any instructions to someone?

5- Can you tell us what are you doing at the mine, how you work, currently?

6- How did you go about acquiring these skills?

7- While performing your job, what sort of trainings do you receive? How are you able to provide this trainings? Who is providing or assisting you, when you are into this vocational trainings? From whom were you receiving these trainings in the past?

8- What was the most harsh and challenging issue while acquiring this skill? In which point you sttrugled? How did you overcome these challenging points?

9- What did you encounter and faced with? What sorf of incidents you faced?

10- What kind of degrees or certificates do compaines or the institutions, facilities demand? Can you tell, please, one by one? Who is being the one

that is being an enactor about your taking these certificates from where? How did you get these documents, degrees?

11- How/what kind of mutual sharings you share with your senior workers, retirees about mining skills and qualifications?

12- Have you ever benefitted from these sharings? How? How can you describe it or what do you want to say about it?

13- How did you have these conversations and sharings with your senior workers? Can you explain?

14- Have you ever been in a bad situation because of lacking of the skills, in some subjetcs? If so, how did you overcome? How are your sharings, mutual and common points with your workers?

15- Has your point of view onto mining changed since the beginning? Can you please share with us what kinds of changes have occurred?

B- Organization & Process of the Business

1- Which units are there in the place you work? Can you explain?

How long have you been doing the same job?

2- Have you always work in underground, mining? Or, have you ever worked with both, at the same time? What sort of differneces are there, between each?

3- Do you&have you ever work in shifts? How does shift work is differing from regular, normal working?

4- What kind of system payrolls, (records) are being kept in the working area, at the entry and exit from the work? How did you go to the work?

5- What sort of methods do your supervisors/masters use while following you in terms of tracking how you work? How and on what basis do they evaluate you? Has this situation changed from the past?

6- How is your salary being paid to you? What sort of items are being included in the payments? (Cash, social rights)

7- Do you really and directly see the wage you receive while working as a reward for your labor? Why? Can you explain? How this situation was occuring in the past?

8- Is there any significance to you or the unit you are being affiliated with, how much coal is produces during the production? If so, why is it significant? Can you explain? Is there any change since you firstly get the job?

Work Ethic-Value Relationship

1- What does mining mean to you? What is the profound value of the mining? What do you think about a person working in mining should and needed to be?

2- In the value of mining working, is there any change time by time as you identify and comprehend above? If so, how? If it changes, what arethe reasons?

3- What kind of worker do you think a worker ought to be? Can you exemplfy? Were you thinking the same in the past, also? What have changed in the past?

4a- What comes to your mind when you hear the word ‘respect’ in the workplace? What you think? How could you decribe? What have changed in the past? If so, what sort of changings have been occurred?

4b- What should we mean when we say ‘responsibilities’ among miners, you think? How responsibility is being determined in the workplace? What have changed in the past, is there any alternation?

4c- What should we mean when we say ‘solidarity’ among miners, you think? How responsibility is being determined in the workplace? What have changed in the past, is there any alternation?

4d- You think that being a miner is needed you to be persistant? Have you seeing yourself in the position of the permanence? Why, so? (In that sense, it could be understood that person's seeing and positioning himself as a persistent or temporary)

4e- Do you describe yourself as a frugal? Why? Working you thinking the same about yourself, in the past?

4f- What you think that 'trust' meant in the workplace? Would you decribe yourself as a trustful persona? What have changed in the past, is there any alternation?

4h- As a miner, what is 'honesty' for your individual comment? How would you describe it? What have changed in the past, is there any alternation?

5- Do you have any examples about an employee whose value of his work profoundly?

6- What are the most significant working values related to the mining that you want to pass onto your children or new hires? Have you thought this way in the past?

7- Do you think these values that you mentioned by could be transferred into? If so, how?

C- Techonology- OHS-Educations

1- What kind of education or trainings you get about the tools and equipments that are being used in the mine? By whom did you get these education? What are the achievements of these educations?

2- What kind of transformation and changings are created by these tools and equipments that are being used by you? While compared to previous terms, what kind of hardships and eases are occurred by the usageof the new techniques and tools? Can you describe?

3- How could you evaluate your own qualifications and knowledge about OHS, Occupational Health and Safety? In your working-life, how the subjects of the OHS has been developed? Can you please exempfly, how so?

4- Have your ever got an advice from the qualified workers in terms of OHS? What kind of advices were these? Why they ought or needed to be in the giving an advice to you? Can you explain?

5- You think that the new mechanize tools are beneficial for OHS? Can you explain? How do you talk about these issiues when you met with senior workers or your supervisors? Are there any changes compared to the past? What has changed?

D- Relations with the Employer

1- Throughtout your working life, who was your employer? Has there any change? If so, why?

2- Have you ever heard about the difficulties that are being occurred when the workplaces were transferred from public to private enterprises?

3- When it compared to public and private, what kind of changes were there?

4- Have those changes affect you? If so, what are those affections?

5- When you need to take a day off from work, what do you do? Are there any circumstances that you abstain from getting a permission? If so, how you overcome it? To whom you get help? You think that it has changed from the past?

5- Can you request an advance payment from your workplace when you have any financial need? How can you got it when such a need arises? To whom do you get help from at work? Was it the same in the past? Has there been any changes?

6- Do you get overtime pay when you get work overtime? Who decided it? How did this process was working in the past?

7- If you want or need to accomplish your religious duties, what kind of path would you follow? How did this process was working in the past?

E- Relations with the Trade Union

1- Are you a member of any foundation, association, political party, union? If so, which ones? Can you explain?

2- Do you have an union membership? If yes, how long have you been unionized? Would you go to the union? How do you deposit your union dues? Do you attend the events of it?

2a- What union means to you?

2b- What is the main urge of the union, you think?

2c- Has your point of view been changed time by time? If so, how?

3- Why you attend, if not, why you did not?

6- What are the values and importances that trade union contributes to your working life?

5- Have you ever met with new people and culture thanks to the union? How it affected your point of view to the job?

F- Future of the Mine

1- What you think about the comparison of the miners who works currently to the previous-retared workers? How you see it? Do you gain any inforation about what they go through, experience? Can you compare, also?

2- When it comes to the comparing it with your working periof of time, what are the good things that are occurred in mining? On the other hand, what are the worse? What you think about the reason of this occurance?

3- If it would be possible, what would you forward tell to the new, beginner workers?

4- Would you prefer that your child or grandchild to practice your profession? Why? Would you being thinking the same in the past, too?

Thank you all for your participation to the survey.

APPENDIX 4 – THE QUESTIONNAIRE FOR INTERVIEWING WITH TRADE UNIONS

The Questionnaire for Interviewing with Trade Unions

A- Relations with the Members

1- How many agile and active members does your union have?

2- Is there any abstract and concrete information about the total number of the coal mine workers in your country?

3- What is the unionization rate of coal miners, including your union in our contry?

4- What sort of picture occurs when you compare the participation of miners in union activities compared to the last ten years, you think?

5- Why do you think that a miner should choose your union to become a member, can you describe and exempfly?

B- The Transformation of Mining, and Work Ethic

6- Were you able to detect a change in the profile of coal mine workers in our contry in last ten years? If so, what are these? What do you think about the reason of this changing?

7- As a union, what sort of knowledge and skills do you contribute to the development of the miners? Do you have any program or plan regarding these?

8- What kind of changes have occurred in the way of miners' working in last ten years, you think? What were the main reasons of it?

9- How and what kind of differences do you observe in work ethic among your members, according to age groups?

10- How and where you are able to follow mine production technologies?

11- Have you ever evaluated the potential impact of the possible technological transformations into production of mining? If yes, what are your plans for those?

12- Is there any attempt to establish professional qualification standarts for coal mining? If yes, have you ever contributed to his process? Or, do you make an effort to start it?

13- Are there any professional ethical rules for miners which are being determined by your union? If so, how do you share these to them?

14- Are there any studies for the cultural-social development of the workers, also, for their perception paving the way for changing world? What are your studies and works in terms of education?

15- What kind of improvement and transformation policy do you have regarding the attitudes of your members and employers on OHS points?

Thank you all for your participation to the survey.

APPENDIX 5 – TUNÇBILEK WORKERS INTERVIEW INVENTORY

ODTÜ - SOSYAL BİLİMLER ENSTİTÜSÜ - SOSYOLOJİ ANA BİLİM DALI

Maden İşçiliğinin Teknolojik Dönüşüm ile Değişimi:Tunçbilek Örneği

Saha Çalışması İşçi Görüşme Notları

Görüşme No	Görüşme Yeri	Görüşme Tarihi	Yaşı	Bölümü / Ünvanı	Medeni Hâli	İkamet Yeri	Eğitim Durumu	Eş İş	Konut Tipi	Evin Mülkiyeti	Yapı Türü	Oda Sayısı / m2	Konut Isıtması	Temel Geçim Kaynağı	Ek Gelirler	Başka Madenci var mı	Yıllık Ortalama Gelir	Çocukların Geleceği	Çocukların geleceği için ne yapar?	İşe Giriş Şekli	Görüşme Süresi Telefon Kayıt	Görüşme süresi Cihaz Kayıt
1	[illegible]	8.03.2022	26	Ajüstör	Evli	Tavşanlı	Meslek Lisesi	Hayır	Müstakil Katlı	Yakının evi	Betonarme	2/100	Kömür Kalorf.	Maden	Var	Yok	130	Daha kötü	2 ve 3	İstimlak	01:15:20	01:18:07
2	[illegible]	8.03.2022	51	Vardiya Çavuşu	Evli	Tavşanlı	MYO	Evet	Katta Daire	Ev sahibi	Betonarme	3/105	Doğalgaz Kombi	Maden	Var	Yok	230	Çok daha iyi	3, 6 ve 8	KPSS	02:43:16	02:44:23
3	[illegible]	8.03.2022	38	Mekanik (bakım onarım)	Evli	Tavşanlı	Meslek Lisesi	Hayır	Katta Daire	Ev sahibi	Betonarme	3/100	Doğalgaz Kombi	Maden	Var	Yok	140	Daha kötü	2 ve 3	KPSS	02:36:16	01:36:29
4	[illegible]	8.03.2022	35	Tahkimat	Evli	Tavşanlı	Meslek Lisesi	Hayır	Katta Daire	Ev sahibi	Betonarme	4/115	Doğalgaz Kombi	Maden	Yok	Yok	145	Daha iyi	2 ve 3	İstimlak	01:41:12	01:41:28
5	[illegible]	8.03.2022	38	Kesici Operatörü	Evli	Kütahya	MYO	Hayır	Katta Daire	Kiracı	Betonarme	4/115	Doğalgaz Kombi	Maden	Yok	Yok	155	Daha Kötü	2 ve 3	KPSS	01:20:54	01:21:05
6	[illegible]	9.03.2022	37	Elektrik (Bakım Onarım)	Evli	Kütahya	MYO	Hayır	Müstakil	Ev sahibi	Betonarme	3/100	Doğalgaz Kombi	Maden	Var	Yok	186	Çok daha iyi	2 ve 3	KPSS	01:54:22	01:54:43
7	[illegible]	9.03.2022	42	Kazı İhzarat	Evli	Tunçbilek	Ortaokul	Evet	Müstakil	Ev sahibi	Yığma Tuğla	6/200	Kömür	Maden	Var	Yok	180	Daha iyi	Sadece 2	İstimlak	01:46:55	01:46:05
8	[illegible]	9.03.2022	35	Kazı İhzarat	Evli	Tavşanlı	Meslek Lisesi	Hayır	Müstakil	Ev sahibi	Yığma Tuğla	4/090	Doğalgaz Kombi	Maden	Var	Yok	150	Daha iyi	2 ve 3	İstimlak	01:33:21	01:33:21
9	[illegible]	10.03.2022	45	Barutçu	Evli	Tavşanlı	Lise	Hayır	Katta Daire	Ev sahibi	Betonarme	3/090	Doğalgaz Kombi	Maden	Yok	Yok	120	Daha kötü	2 ve 3	KPSS	02:19:45	02:17:33
10	[illegible]	10.03.2022	40	Kazı Usta	Evli	Tunçbilek	Ortaokul	Evet	Müstakil	Ev sahibi	Betonarme	4/115	Kömür Kalorf.	Maden	Var	Yok	180	Daha kötü	2, 3 ve 8	İstimlak	01:14:10	01:14:19
11	[illegible]	10.03.2022	43	Kulikar Operatörü	Evli	Tavşanlı	Lise	Hayır	Katta Daire	Ev sahibi	Betonarme	4/125	Doğalgaz Kombi	Maden	Var	Yok	170	Ço daha kötü	Sadece 2	İstimlak	01:08:36	01:22:08
12	[illegible]	10.03.2022	50	Mekanik (bakım onarım)	Evli	Tavşanlı	Meslek Lisesi	Evet	Müstakil	Ev sahibi	Yığma Tuğla	3/100	Doğalgaz Kombi	Maden	Var	Yok	126	Daha iyi	3 ve 8	KPSS	01:19:18	01:17:46
13	[illegible]	10.03.2022	30	Tahkimat	Evli	Tavşanlı	Meslek Lisesi	Evet	Müstakil	Ev sahibi	Betonarme	5/210	Soba Kömür	Maden	Var	Yok	196	Daha iyi	Sadece 3	İstimlak	02:09:41	Yok
14	[illegible]	11.03.2022	33	Kazı İhzarat	Evli	Tavşanlı	Lise	Hayır	Müstakil	Kiracı	Yığma Tuğla	3/110	Doğalgaz Kombi	Maden	Var	Yok	150	Daha iyi	Sadece 3	İstimlak	01:28:24	01:27:54
15	[illegible]	11.03.2022	32	Bant Çalışanı	Evli	Tavşanlı	Ortaokul	Hayır	Katta Daire	Kiracı	Betonarme	4/100	Doğalgaz Kombi	Maden	Yok	Yok	150	Çok daha iyi	2 ve 3	İstimlak	01:42:49	01:42:10
16	[illegible]	11.03.2022	47	Kazı İhzarat	Evli	Tavşanlı	Lise	Hayır	Katta Daire	Ev sahibi	Betonarme	3/100	Doğalgaz Kombi	Maden	Yok	Yok	135	Daha iyi	Sadece 3	Askerde Üstün Başarı	01:28:04	Yok
17	[illegible]	11.03.2022	60	Barutçu	Evli	Tavşanlı	Meslek Lisesi	Hayır		Ev sahibi	Betonarme	4/140	Kömür Kalorf.	Maden	Yok	Yok	150	Daha kötü	Sadece 3	İstimlak	02:12:57	Yok
18	[illegible]	12.03.2022	38	Mekanik (bakım onarım)	Evli	Tavşanlı	Meslek Lisesi	Hayır	Müstakil	Ev sahibi	Betonarme	4/125	Doğalgaz Kombi	Maden	Yok	Yok	145	Çok daha iyi	2, 3 ve 8	KPSS	01:41:49	01:41:32
19	[illegible]	12.03.2022	34	Tahkimat	Evli	Tavşanlı	Lise	Hayır	Katta Daire	Kiracı	Betonarme	4/120	Doğalgaz Kombi	Maden	Var	Yok	200	Daha kötü	Sadece 2	İstimlak	00:55:46	00:55:15
20	[illegible]	12.03.2022	36	Kesici Operatörü	Evli	Tavşanlı	Lise	Hayır	Katta Daire	Ev sahibi	Betonarme	4/130	Doğalgaz Kombi	Maden	Yok	Yok	130	Daha kötü	3 ve 8	KPSS	01:37:27	00:13:22
21	[illegible]	12.03.2022	36	Elektrik (Bakım Onarım)	Evli	Tavşanlı	Meslek Lisesi	Hayır	Müstakil	Kiracı	Yığma Tuğla	3/085	Doğalgaz Kombi	Maden	Yok	Yok	110	Daha kötü	2 ve 3	KPSS	01:30:08	Yok
22	[illegible]	12.03.2022	28	Kazı İlerleme	Evli	Tavşanlı	Meslek Lisesi	Evet	Katta Daire	Ev sahibi	Betonarme	4/140	Doğalgaz Kombi	Maden	Var	Yok	135	Daha iyi	2 ve 3	İstimlak	01:28:41	Yok
23	[illegible]	12.03.2022	42	Kazı İhzarat	Evli	Tavşanlı	Lise	Hayır	Müstakil	Ev sahibi	Betonarme	3/110	Doğalgaz Kombi	Maden	Yok	Yok	145	Daha iyi	Sadece 3	İstimlak	01:54:06	Yok
24	Tavşanlı Otel	14.03.2022	37	Barutçu	Evli	Tavşanlı	Meslek Lisesi	Hayır	Müstakil	Ev sahibi	Yığma Tuğla	4/096	Doğalgaz Kombi	Maden	Yok	Yok	96	Daha iyi	Sadece 3	Tanıdık	01:36:02	01:35:18
25	Tavşanlı Otel	14.03.2022	33	Bant Çalışanı	Evli	Tavşanlı	Lise (AÇIK)	Evet	Katta Daire	Ev sahibi	Betonarme	3/090	Doğalgaz Kombi	Maden	Var	Yok	110	Daha iyi	Sadece 3	Tanıdık	01:29:04	Yok
26	Tavşanlı Otel	14.03.2022	37	Baca Usta	Evli	Tavşanlı	Ortaokul	Hayır	Müstakil	Kiracı	Betonarme	4/120	Doğalgaz Kombi	Maden	Var	Yok	177	Daha kötü	3 ve 8	Tanıdık	01:47:50	01:47:27
27	Tavşanlı Otel	14.03.2022	38	Tahkimat	Evli	Tavşanlı	Lise	Hayır	Müstakil	Ev sahibi	Yığma Briket	4/082	Doğalgaz Kombi	Maden	Yok	Yok	108	Daha iyi	2 ve 3	Tanıdık	02:39:02	Yok
28	Tavşanlı Otel	15.03.2022	30	Kazı Usta	Evli	Tavşanlı	Meslek Lisesi	Hayır	Müstakil Katlı	Yakının evi	Betonarme	3/080	Doğalgaz Kombi	Maden	Var	Yok	157	Daha iyi	Sadece 2	Tanıdık	01:26:15	01:25:37
29	Tavşanlı Otel	15.03.2022	31	Baca Usta	Evli	Tavşanlı	Lise (AÇIK)	Hayır	Müstakil	Ev sahibi	Yığma Tuğla	3/087	Doğalgaz Kombi	Maden	Yok	Yok	108	Daha kötü	Sadece 2	Başvuru	01:29:41	Yok
30	Tavşanlı Otel	15.03.2022	34	Elektrik (Bakım Onarım)	Evli	Tavşanlı	Meslek Lisesi	Hayır	Katta Daire	Kiracı	Betonarme	4/100	Doğalgaz Kombi	Maden	Yok	Yok	96	Daha iyi	3 ve 8	Tanıdık	01:39:32	01:38:17
31	Tavşanlı Otel	15.03.2022	38	Elektrik (Bakım Onarım)	Evli	Tavşanlı	Meslek Lisesi	Hayır	Katta Daire	Ev sahibi	Betonarme	4/140	Doğalgaz Kombi	Maden	Var	Yok	108	Daha iyi	Sadece 2	Tanıdık	01:20:28	Yok
32	Tavşanlı Otel	15.03.2022	38	Mekanik (bakım onarım)	Evli	Tavşanlı	Meslek Lisesi	Hayır	Katta Daire	Ev sahibi	Betonarme	3/110	Doğalgaz Kombi	Maden	Yok	Yok	96	Aynı olur	Sadece 3	Başvuru	01:41:45	01:40:31
33	Tavşanlı Otel	15.03.2022	38	Mekanik (bakım onarım)	Evli	Tavşanlı	Meslek Lisesi	Hayır	Katta Daire	Ev sahibi	Betonarme	4/110	Doğalgaz Kombi	Maden	Yok	Yok	110	Çok daha kötü	Sadece 3	Başvuru	02:21:17	Yok

APPENDIX 6 – THE ETHICAL APPROVAL

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

DUMLUPINAR BULVARI 06800
ÇANKAYA ANKARA/TURKEY
T: +90 312 210 22 91
F: +90 312 210 79 59
www.uearm.metu.edu.tr

Sayı: 28620816 / 141

16 MART 2020

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın H. Sibel KALAYCIOĞLU

Danışmanlığını yaptığınız **Melik Zafer YILDIZ'ın "Maden İşçiliğinin Değişimi ve Dönüşüm Süreçleri: Tunçbilek Örneği"** başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve **141 ODTU 2020** protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız.

Prof.Dr. Mine MISIRLISOY
Başkan

Prof. Dr. Tolga CAN
Üye

Doç.Dr. Pınar KAYGAN
Üye

Dr. Öğr. Üyesi Ali Emre TURGUT
Üye

Dr. Öğr. Üyesi Şerife SEVİNÇ
Üye

Dr. Öğr. Üyesi Müge GÜNDÜZ
Üye

Dr. Öğr. Üyesi Süreyya Özcan KABASAKAL
Üye

APPENDIX 7 – PHOTOS OF THE FIELDS; THE CHOSEN ONES

Figure 2: 2G, Mechanized Fortification.

The Board of the Western Lignites Enterprise, Ömerler A-6.

Figure 3: Drum shearer-loader.

Figure 4: The Cohort Room

Figure 5: The changing shifts, and scheduling.

The Board of the Western Lignites Enterprise, Ömerler A-6.

Figure 6: The Board of the Western Lignites Enterprise, A-6, Ömerler.

Figure 7: The measuring sensors of the dangerous gases inside the furnace.

Figure 8: Boxes of the Permission to Day-Off.

Figure 9: The Mining Workers Union Managers and Worker Representatives.

Figure 10: Venues of the movie “The Mine”, 1978, by Yavuz Özkan.

The places that formed the backdrop for the film and their current outlook in the Tuncbilek mining area; where the Golden-Orange award-winning movie ‘’The Mine’’ was directed in 1978, by Yavuz Özkan and starring with the Tarık Akan, Cüneyt Arkın.

Figure 11: RFID, Tracker (Chip).

Figure 12: Face Recognition Device, PACS.

Figure 13: The fortification what occurred by a second generation.

Figure 14: An obsolote fortification, as a first generation.

APPENDIX 8 – CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Yıldız, Melik Zafer
Nationality: Turkish (TC)
Date and Place of Birth: 30 August 1975 , Bingöl
Marital Status: Married
Phone: +90 533 749 84 33
email: melikzafer@gmail.com

EDUCATION

Degree	Institution	Year of Graduation
MS	METU Urban Pol. Pl. & Loc. Gvrnm.	2002
BS	METU Sociology	1998
High School	İnönü High School, İzmir	1992

WORK EXPERIENCE

Year	Place	Enrollment
2022- Present	Çayeli Bakır İşletmeleri	Corporate Relations Manager
2000-2022	Epsilon-NDT A.Ş.	Deputy General Manager
2013-2019	Alacer (Anagold) Türkiye Business Unit	External Affairs Director
2006-2013	Botaş International Ltd.	External Affairs / Public and Community Relations Chief

FOREIGN LANGUAGES

Advanced English

PUBLICATIONS

1. M. Z. YILDIZ, ‘ Madencilikte Toplumsal İlişkiler: Toplumsal Kabulün Çerçevesini Çizmek – Social Relations in Mining: Drawing the Social License to Operate Framework’ Türkiye Madenciler Derneği Sektörden Haberler Bülteni Sayı:79, 2020, İstanbul, Karmen Matbaa
2. M. Z. YILDIZ ‘Madencilikte Sosyal Onay- Social License to Operate in Mining-, Madecilik Türkiye Dergisi Sayı:39, 2014, Ankara, Mayeb Yayıncılık
3. M. Z. YILDIZ and A. GUREL, ‘Kentsel Yoksulluk ve Geçinme Stratejileri- Ankara Örneği- Urban Poverty and Survival Strategies -Ankara Case’ (Eds), 2000, ODTÜ Yayınları, Ankara
4. M.Z. YILDIZ ‘ Kent Yoksulluğu ve Etnik İlişki Ağları: İstanbul/Halkalı Örneği-Urban Poverty and Ethnic Networks- İstanbul /Halkalı Case’ , 2002, Pg: 385-402, TMMOB Şehir Plancıları Odası, Ankara
5. M.Z. YILDIZ, ‘ A Study on Poverty in the City with a specific focus on Ethnic Networks’, April 2002, unpublished master thesis, METU, Ankara.

HOBBIES

Football, Basketball, Reading

APPENDIX 9 – THESIS PERMISSION FORM / TEZ İZİN FORMU

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Fen Bilimleri Enstitüsü / Graduate School of Natural and Applied Sciences ☐

Sosyal Bilimler Enstitüsü / Graduate School of Social Sciences ☒

Uygulamalı Matematik Enstitüsü / Graduate School of Applied Mathematics ☐

Enformatik Enstitüsü / Graduate School of Informatics ☐

Deniz Bilimleri Enstitüsü / Graduate School of Marine Sciences ☐

YAZARIN / AUTHOR

Soyadı / Surname : Yıldız
Adı / Name : Melik Zafer
Bölümü / Department : Sosyoloji / Sociology

TEZİN ADI / TITLE OF THE THESIS (**İngilizce** / English): Neoliberalizm ile Müzakere: Madencilik Endüstrisi Tunçbilek Yeraltı Madeni, Türkiye / Negotiation with Neoliberalism: The Mining Industry in Tunçbilek Underground Mine, Türkiye

TEZİN TÜRÜ / DEGREE: **Yüksek Lisans** / Master ☐ **Doktora** / PhD ☒

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