



KADİR HAS UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
RADIO, TELEVISION AND CINEMA DISCIPLINE AREA

“WE WILL FIX IT IN POST”, BUT HOW WILL WE FIX POST?
DIGITAL POST LABOR PROCESSES IN TURKEY’S FILM INDUSTRY

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SUPERVISOR: ASSOC. PROF. MELİS BEHLİL

MASTER’S THESIS

ISTANBUL, JUNE, 2018

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Submitted to the Graduate School of Social Sciences of Kadir Has University in partial fulfillment of the requirements for the degree of Master’s in the Discipline Area of Radio, Television and Cinema under the Program of Cinema and Television.

ISTANBUL, JUNE, 2018

I, OYA AYTİMUR DUMAN;

Hereby declare that this Master's Thesis is my own original work and that due references have been appropriately provided on all supporting literature and resources.

OYA AYTİMUR DUMAN

08/06/2018



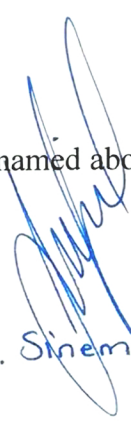
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This work entitled “**WE WILL FIX IT IN POST**”, **BUT HOW WILL WE FIX POST? DIGITAL POST LABOR PROCESSES IN TURKEY’S FILM INDUSTRY** prepared by **OYA AYTİMUR DUMAN** has been judged to be successful at the defense exam held on **08/06/2018** and accepted by our jury as **MASTER’S THESIS**.

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LIST OF ABBREVIATIONS

2D	Two Dimensional
3D	Three Dimensional
ADR	Automated Dialogue Replacement
CGI	Computer Generated Imagery
DCDM	Digital Cinema Distribution Master
DCI	Digital Cinema Initiatives
DCP	Digital Cinema Package
DI	Digital Intermediate
EDL	Edit Decision List
SE-YAP	Feature Film Producers' Union (Sinema Eseri Yapımcıları Meslek Birliđi)
SİNE-İŞ	Turkey's Film Workers Union (Türkiye Sinema İşçileri Sendikası)
SİNE-SEN	Turkey's Cinema Laborers Union (Türkiye Sinema Emekçileri Sendikası)
TV	Television
VES	Visual Effects Society
VFX	Visual Effects

ABSTRACT

AYTİMUR DUMAN, OYA. *“WE WILL FIX IT IN POST”, BUT HOW WILL WE FIX POST? DIGITAL POST LABOR PROCESSES IN TURKEY’S FILM INDUSTRY*, MASTER’S THESIS, Istanbul, 2018.

Digital cinema has been one of the most groundbreaking technological innovations since the invention of cinema and has been a remarkable area of study with the multifaceted alterations it has led to in film theories and filmmaking practices. While many studies on digital cinema cover the benefits brought in, it is also significant to investigate the implications of a tremendous technological change on the labor processes as an important feature in filmmaking. This thesis inquires the changing working conditions of post production workers in Turkey’s film industry, looking deeply into the influences of transition from digital intermediate post process to entirely digital cinema system.

In order to comprehend the effects of the mentioned transition, the thesis relies on a theoretical framework of production studies and political economy approaches; while the research has been supported by means of empirical inquiry consisting of the expressions of post production professionals about their experiences and opinions.

The aim of the thesis is to fill a gap in the literature about Turkey’s film industry, by drawing attention to the labor processes in post production revealing its connection with the misuse of the opportunities digital cinema system enables within a capitalist industrial pattern.

Keywords: Digital cinema, digital intermediate, schedule, labor process, post production, workflow, precarious employment, working conditions.

ÖZET

AYTİMUR DUMAN, OYA. “*POSTTA HALLEDERİZ*”, *PEKİ POSTU NASIL HALLEDERİZ? TÜRKİYE SİNEMA ENDÜSTRİSİNDE DİJİTAL POST PRODÜKSİYON EMEK SÜREÇLERİ*, MASTER TEZİ, İstanbul, 2018.

İcadından bu yana, sinemanın geçirdiği değişimler içinde dijital sinemaya geçişin en önemli teknolojik gelişmelerden birisi olduğu söylenebilir. Dijital sinema hem film yapım pratiklerini hem de sinema teorilerini geri dönüşü olmaksızın çok yönlü değiştirmiş olması nedeniyle, önemli bir akademik araştırma alanı haline gelmiştir. Bu alanda yapılan çalışmaların dijital sinemanın sağladığı avantajları geniş biçimde ele almasının gerekliliği kadar, bu denli kapsamlı bir teknolojik değişimin film yapım pratiğinin önemli bir parçası olan emek süreçlerini nasıl etkilediğini araştırmak da gerekli ve önemlidir. Bu tez, *digital intermediate* iş akışından dijital sinema iş akışına geçişin etkilerini derinlemesine ele alarak, Türkiye sinema endüstrisinde post prodüksiyon çalışanlarının değişen çalışma koşullarını araştırmaktadır. Bu çalışma, dijital sinemaya geçişin çalışma süreçleri üzerindeki etkilerini kavrayabilmek için, teorik çerçeve içinde yapım çalışmaları ve ekonomi-politikten faydalanmakta ve araştırma dahilinde post prodüksiyon çalışanlarıyla yapılan derinlemesine görüşmelerden ortaya çıkan görüşlere ve ifadelere yer vermektedir. Tezin amacı, post prodüksiyon emek süreçlerinin, dijital sinemanın sağladığı teknik olanakların suistimal edilme biçimleriyle ilişkisine, kapitalist üretim biçimi dahilinde dikkat çekerek, Türkiye Sinema Endüstrisi çalışma alanında bir literatür boşluğunu doldurmaktır.

Anahtar Sözcükler: Dijital sinema, *digital intermediate*, program, emek süreci, post prodüksiyon, iş akışı, güvencesiz istihdam, çalışma koşulları.

1. INTRODUCTION

1.1. OVERVIEW

Cinema has always been in close relations with technology and has improved continuously since its invention; digital cinema being one of the most important technological innovations in the historical development of cinema. Digital Cinema has become an important subject to study, because as Hakan Erkılıç (2017) remarks, with the transformation of filmmaking practice from celluloid to digital, film theories have also begun to evolve (p. 58). Lev Manovich (2001) draws attention to how film culture is reidentified with the coming of digital cinema, as the dominant modes of filmmaking have altered, and the traditional mode of cinematic perception has just become one of the options in the digital era. The studies on effects of transition to digital cinema mainly focus on production processes in terms of aesthetics and narration, the changing conditions of distribution or the perception of the audience (Köprü, 2009, p. 57-58), or technical details about production and post production processes.¹ It is widely acknowledged that digital cinema system has brought about a series of opportunities: the elimination of high cost processes in filmmaking, the increase in creation of more independent films through lowering costs, the time and cost-efficient distribution and availability for release on the same date all over the world being just some of them (Ormanlı, 2012). However, it is also significant to discuss the effects of such a huge technological innovation in terms of labor processes of workers² who are important actors of the industry. This thesis centers upon how transition from analog systems including digital intermediate process, to entirely digital cinema system may have affected laborers, focusing on the post production processes in Turkey's film industry. The study aims to suggest that although the transition from digital intermediate system to entirely digital cinema technology has contributed to

¹ The following sources represent some of the studies that adopt the mentioned approaches: Arundale, S. & Trieu, T. 2014, *Modern post: workflows and techniques for digital filmmakers*. Erdoğan Tuğran, F. & Tuğran, A.H. 2016, *Pelikülden dijital: sinemadaki değişimler*. McKernan, B. 2005, *Digital cinema: the revolution in cinematography, postproduction, and distribution*. Swartz, C.S. (ed.) 2005, *Understanding digital cinema*.

² This study focuses on the working conditions of below-the-line post professionals. The term "below-the-line" refers to craftspeople and technicians such as editors, gaffers, production designers, etc., whereas the term "above the line" is used for the people creating symbolic meaning in a film like writers, directors, producers and celebrities (Banks, M.J., 2009, p. 89).

filmmaking processes worldwide through the technical opportunities it allows, the new digital post production workflow also leads to challenging and abusive working conditions for workers as the benefits turn into disadvantages in terms of post production labor processes in Turkey's film industry.

Before explaining the details of transition to digital cinema system, it is also necessary to underline the specific situation of the film industry in Turkey, which has gone through dramatic changes in terms of the production volume within years. Turkey was one of the most prolific countries in film production in 1970s, until the industry faced a serious crisis due to several social changes such as the prevalence of television, the effects of the military intervention in Cyprus in 1974 and the military coup in 1980 (Behlil, 2010). The film industry began to revive towards the end of 1990s, with an increasing number of films from 26 in 1990 (Tunç, 2012, p. 199), to 106 in 2014 (Tomur, Kol and Bilaçlı, 2016, p. 4). The rate of box-office revenues of local films to total have also raised from 42% in 2005, to 54% in 2014 in relation with the expanding volume of local film production (Tomur, Kol and Bilaçlı, 2016, pp. 4-5). Thus, the film industry in Turkey has underwent a significant change through the number of films created since 1990s, including the time period the transition to digital cinema has taken place.

The transition from analog to digital in terms of the post production workflow has been completed in two different stages: Firstly, from analog to digital intermediate system (DI), and secondly from digital intermediate to entirely digital cinema system. The digital intermediate process includes analog material to be converted to digital files, the post to be worked digitally and the print of the final product on celluloid (Silverman, 2005, p. 52). Digital cinema, on the other hand, refers to the whole post production process handled digitally, and the final product is a Digital Cinema Package (DCP) (Swartz, 2005, p. 1). To understand what has changed in the labor process with digital cinema, the technical details of both processes of digital intermediate and entirely digital cinema should be covered. Additionally, it is also necessary to explain the importance of the post process as the final stage of filmmaking before distribution and exhibition, bringing a last chance for filmmakers to fix any problems faced in the production. "We will fix it in post" is a

worldwide used phrase of filmmakers, for a relief of the unexpected problems that could not be prevented during shooting revealing the significance of the post process in filmmaking. The fixing can be required for various issues such as recording additional dialogue for a noisy location shooting, balancing the brightness levels of a scene shot in different periods of a day in color grading, adding clouds on a flat grey sky in compositing, being just a few examples.

In addition to the details of post workflows, an evaluation of the changing post labor processes in Turkey's film industry should also be made to explain how digital technology may have caused problematic situations through the misuse of its benefits. In order to cover all the mentioned aspects of the transformation to digital cinema system, it is necessary to carry out an interdisciplinary study based on production studies and political economy for the theoretical framework, and do an empirical research to crosscheck the claim of the study.

Petr Szczepanik and Patrick Vonderau (2013) state that as digital wipes out conventional media practices through creating new areas and ways of production and consumption, the ultimate source for possible new theories becomes the production itself (p. 3). The production becoming a subject of inquiry should be seen as necessary and significant with its potential of reflecting many socio-economic and hegemonic relations within a group of people working together. In addition, film as the final product of filmmaking practice, should not be decontextualized from the process it is created.

John T. Caldwell (2009) also suggests that the experiences of workers about labor practices in film production can be considered as cultural and sociological expressions about how the film industry functions and can be seen as texts to be analyzed. The monolith comprehension of the film industry can be broken and a true understanding of the industry which originates from contradicting and competing socio-professional communities can be developed only through this understanding (p. 200).

According to Vicki Mayer (2009), production studies is an intriguing field to study, for production is a practice of performing power relations through hierarchies and inequalities

on a daily routine pointing to a social theory (p. 15). In order to make inferences from a multi-layered, collective and hierarchically functioning industry such as the film industry, it is necessary to comprehend the web of these relations with all its details. Thus, the approaches production studies provide towards the work worlds in relation with political economy of labor, markets and policy (Mayer, Banks and Caldwell, 2009, p. 3), underlie the center of the theoretical framework of this thesis.

As the working practices in the film industry are also known to be in compliance with post Fordist, neo-liberal economic strategies and flexible employment models (Caldwell 2009), another important discipline to be utilized for this study is political economy. Janet Wasko (2004) states that the political economy of film should approach films as commodities produced and distributed as a part of a capitalist system (p. 227). The relation between cinema and capitalism is revealed by its being produced within certain economical contexts, its dependence on the labor and the financial value of the finished product (Comolli and Narboni, 2009, p. 686). Thus, the production processes become important elements to be analyzed in terms of the social and economic relations that occur in a capitalist industry by making use of political economy. Vincent Mosco (1996) states that according to Marx, capitalism depended on an unrivaled dynamism constantly evolving its processes of production with new technologies and new forms of employment models (p. 43). In relation with this approach, Nicole S. Cohen (2016) points out that cultural workers experience precarious employment model increasingly, which can be defined as discontinuous labor form with excessive future insecurity (p. 38). Precarious employment is described as a type of labor characterized by restricted economic and social rights, job insecurity (Vosko, 2006), psychologically and physically challenging conditions that often lead to distress for workers (Kalleberg, 2009). Film professionals' labor processes largely depend on precarity, which has emerged with a shift from Fordist production model to a flexible production form depending on "lean production, information communication technologies and flexible labor markets" (Cohen, 2016, pp. 39-40). Caldwell (2013) states that precarious creative labor has been an interesting subject recently; but "the cultural apparatus" that reveals such working conditions has been less of an interest (p. 92). This

study will try to evaluate these working conditions through the cultural expressions of post production laborers by using production studies and political economy for theoretical framework and approaching technological determinist sources critically.

The thesis aims at being taken into consideration under film studies, based on Caldwell's (2009) suggestion on that the readers should be allowed to think about not only onscreen forms of film; but also, with offscreen forms of production. Following Caldwell's advice, it should be considered that film production processes are also elements of film studies and as significant as films in terms of the cultural, economic and technological aspects they refer to, and the production process cannot be considered separately from the product itself. Szczepanik and Vonderau (2013) emphasize that production modes have rarely been studied systematically (p. 3). In this context, this thesis purposes to fill a gap in the literature about the studies of Turkey's film industry by developing a comprehension of the relation of post production labor issues with the disadvantageous use of technological improvements within the capitalist industrial structure films are created.

1.2. METHODOLOGY

This thesis requires an interdisciplinary study of political economy and production studies with an empirical research to ascertain the relationship between the effects of transformation to digital cinema and the labor processes of post production workers in Turkey's film industry, pointing to the concern of the thesis. Caldwell (2006) states that one of the obstacles against making an influential analysis of film production culture is that the industry is far away from being a stable object of analysis; it is a self-conscious industry that develops its own narratives and styles of expression related to the industry's structure. Adopting Caldwell's (2009) approach of empirical research for studying the cultural expressions of the self-reflexive film industry, the opinions and statements of post workers would refer to significant findings on the research. To develop a realistic understanding about the effects of a major technological change on labor processes, the statements of these workers should be seen as remarkable clues. Therefore, the thesis depends on the literature covering the background of the technological transformation and its effects on post production labor processes and the data gathered through in-depth interviews.

In-depth interviews are one of the mostly used data gathering methods in qualitative research (Leegard, Keegan and Ward, 2003, p. 138). In-depth interviews enable the researcher to understand all aspects of the answers given by the interviewee such as reasons, emotions, ideas and beliefs; which provide the explanatory proof that is significant for qualitative research (p. 141). Thus, this thesis includes in-depth interviews with post professionals of the film industry from different teams to evaluate the statements of the laborers in detail and to determine if the issues mentioned refer to common findings in the research which could verify the statement of the thesis. The in-depth interviews are designed with semi-structured questions that are directed to the participants within the general frame of the research, yet the interview is conducted rather in a freer fashion. Therefore, the answers given to the questions have the potential to add new dimensions to the study as a result of participants' approaches (Altunışık, Bayraktaroğlu, Coşkun and Yıldırım, 2004, p. 84). The reason underlying this choice is my intention to prevent possible distraction of the focus on the central topic of this research and provide more freedom to participants within the given frame. The in-depth interviews have been made with 11 post production professionals of the industry: Interviewees 1, 2, 5 and 8 are post production managers/supervisors, interviewee 3 is a technical supervisor, interviewee 4 is a color grading assistant, interviewee 6 and 7 are sound designers, interviewee 9 is an editor and a representative of the union Sine-Sen, interviewee 10 is a compositing artist/visual effects supervisor and interviewee 11 is an animator and a representative of the union, Film and TV Union (Sinema Televizyon Sendikası).

The interviewees have been selected paying attention to include participants from various jobs in post production with different employment models such as inhouse workers and freelancers. The aim in choosing interviewees on such a broad scale is to understand what kind of labor problems are experienced within the digital post production workflow by separate teams with different employment forms and gather a valid collection of data to determine the range of issues mentioned. At the same time, the similarities of and differences between the expressions of interviewees from distinct departments, as well as different hierarchical positions help to put forward considerable data. The reason for

interviewing with a representative of Film and TV Union in addition to workers, is to comprehend the approach of the union towards the work world difficulties the laborers refer to and to cover the research of the thesis relying on a multifaceted but focused data to be analyzed.

There are two semi-structured question forms prepared (appendices 1 and 2). Appendix 1 includes the in-depth interview questions asked to all participants and appendix 2 consists of in-depth interview questions directed only to interviewee 11 as a member of the active union, Film and TV Union. The questions in appendix 1 are prepared to understand the details of the worker's job and the individual opinions about the post processes, working conditions, the effects of technological changes on the products' quality and labor processes, the pros and cons of the transformation from the point of view of laborers. The questions in appendix 2 are asked to comprehend the efforts of the union for the organization of post labor, the approach of union to problems, the union's objectives and obstacles to raise an awareness for unionization.

This thesis has been designed starting from a point of personal experience. I have been working as a post production supervisor for twelve years, including freelance and inhouse employment experiences in different areas such as commercials, television series and feature films. The challenging working conditions in the industry have always been a part of the daily expressions in the work life; however, such conversations disappear in the hectic workdays of films professionals and cannot exceed the borders of the set or the post studio. I strongly believe that it is important to compound practical experiences with theories to change these expressions from complaints to findings which can be investigated and determined through scholarly studies. An academic study starting from a personal experience had the risk of breaking the distance with the subject of the thesis that should be kept as a researcher. However, the theoretical approaches which have been benefited from and the findings gathered through the empirical stage of the thesis have referred to a wider and multifaceted collection of data exceeding the limits of an individual's personal experience and pointing to crucial data worth to consider on a less studied area of Turkey's film industry.

2. POST PRODUCTION PROCESSES AND THEIR EVOLUTION

2.1. THE IMPORTANCE OF POST PRODUCTION PROCESS IN FILMMAKING

Filmmaking includes certain stages of creation such as pre-production, production and post-production. Post production, which is the main process to be analyzed in this study, is often known the least even by the professionals of the film industry. As Leon Silverman (2005) states, for many people post production is usually a mystifying art handled behind the closed doors of dark rooms and if it is carried out with sufficient technical competence and talent, the process completely becomes invisible in the diegesis (p. 15). Whether the reasons of this prevalent unfamiliarity with post production process is technical information and proficiency the process requires, or the different logic of working practices in comparison to on set production, it is a necessity to uncover the mystery of this process and raise awareness about it through a detailed analysis of what post production is, to explain the significance of post production for filmmaking.

Brian McKernan (2005) states that a film's post production starts as it is being photographed (p. 83). Silverman (2005) also underlines that post production does not begin after shooting, it begins at the same time with production (p. 16). The post production process does not only include editing, but the whole process of creation of a film before its distribution and exhibition (McKernan, 2005, p. 83). This creation refers to various operations such as offline and online editing, music, sound design including dialogues, sound effects and soundtrack (sound editing and mixing), visual effects (VFX), color grading and mastering. According to these definitions, it is possible to say that the post production process can be considered as the glue that integrates the pieces of a film together, and the film broken into pieces for production at the pre-production stage, comes together again in the post production process.

As post production process is the last phase of the creation of a feature film, it brings about a last chance to the director to review the needs of the film and make contributions while it is still possible. The process provides the filmmakers a series of opportunities for creative input and technical substantiality to finalize the film properly before its distribution and

exhibition. In order to achieve this aim, the director needs to work with many people each competent in their areas of specialization. A post production team usually consists of sub teams working separately, but in collaboration with each other. Editors, sound editors and designers, musicians, visual effects artists, color grading artists and assistants of all these people work with a post production supervisor who follows the whole process. The post production supervisor is responsible for managing all the steps of the process with teams by fulfilling the demands of the director and watching for the budget and schedule in favor of production. The post production supervisor informs the teams about the work to be done, checks the progress of the work and teams in this respect, foresees the risks of missing a deadline and going over the budget or any possible risky situations that should be avoided. It is quite important for a post production supervisor to have positive relationships with directors, producers and the teams associated with herself in the process as she becomes the bridge between the demands of the director/producer and the performance the post production teams deliver.

Editing, which is usually the most widely known stage of post production can be considered as the first step of this performance. Editing is probably one of the most creative and crucial tasks in filmmaking as Vsevolod Pudovkin claims: “Editing is the basic creative force by power of which the soulless photographs (the separate shots) are engineered into living, cinematographic form” (as cited in Bordwell & Thompson, 2010, p. 223). The film, broken down into sequences, scenes, shots and takes during production, forms a whole again at the beginning of post production through editing. Although the production team has already read the script, imagined how to shoot the scenes, discussed and decided what to do while shooting and watched the scenes shot on the set, it can be acknowledged that editing is the main stage the team encounters the film they have made for the first time in real terms. Ralph Rosenblum and Robert Karen (1979) define the editing room as the place where all the hopes of a production team depending on the film they have shot for weeks eventually come into existence (p. 1). A scene which is essential in the screenplay or during the production of a film, can sometimes be dispensable in total and cut in the editing. Likewise, a scene considered to be cut from the film while shooting can sometimes surprise

the director through a creative touch of the editor to the scene. Thus, editing does not only contribute to the rhythmic, temporal and spatial sense of the narration of a film, but also becomes the crucial stage the vital decisions are made about a film. But, editing constitutes only the first phase of the post process as music, sound design, color grading and visual effects come in next.

Sound design includes various jobs such as dialogue editing, foley, premixing and final mixing. Musicians do not work under the sound design teams, but they need to work closely with sound editing supervisors as music is a very important part of the sound design of a movie. Just like editing, sound design enables the use of creative tools in enriching the ways of storytelling. David Bordwell and Kristin Thompson (2010) state that the coming of sound has brought endless sonic options to the endless visual facilities of cinema (p. 272). Thus, it is possible to think of sound design as vital as editing, in terms of the significance it has in terms of the creation of a film's world through post production.

Color grading is another significant step of post production process, as the final look of a film is set in this stage (Silverman, 2005, p. 27). This step is usually carried out with the participation of the director and director of photography in addition to the color grading artist. The color grading is mostly the final visual touch of a film which affects the product's aesthetics and technical competence at the same time. The grading provides the opportunity to fine-tune the look of a film even if it is shot perfectly during production, to eliminate the mismatch problems of lighting for the shots in the same scene, to make color adjustments on the image locally and to create a specific mood for a particular scene or the whole movie.

Visual effects refer to the process during which elements that do not previously exist in the image can be added, or on the contrary, the elements that exist in the image can be wiped out; that is to say the visual effects can be considered as the artistic work of manipulating the images (Wright, 2008, pp. 1-2). The visual effects process may begin with production and even with pre-production. After the visual effects scenes become clear in the screenplay, the director meets the visual effects supervisors to discuss and agree on how to shoot the scenes including visual effects optimally, so that the post production process can

move on smoothly avoiding bad surprises later. Visual effects refer to many operations done through software programs either creating an image totally on computer or intervening an image already shot by adding, removing elements from the image or by compositing it. The visual effects team consists of many artists like matte painters, CGI (computer generated imagery) artists, and art directors and the work created by these artists should be technically high qualified and sufficient to fit in the reality of a film. Otherwise, the audience may feel alienated about the film through the sense of artificiality and banality the cheesy visual effects lead to (Wright, 2008, p. 2). So, depending on the visual effects in a film, the audience may feel totally satisfied with the photographic reality of the created image or the fantastic world the visual effects present. Low quality visual effects which cause the audience to lose their faith in the diegesis may harm the success of a film directly.

Mastering, the last stage of post production process before distribution, refers to the integration of all audio-visual materials of a film. The image which is finalized and exported to data files as a sequence is combined with the master audio files and then compressed and encrypted for distribution (Carey et al., 2005, p. 86).

All the mentioned information about the details of post production stages in this section, indicates the importance of this process in terms of the technical creativity and sophistication it potentially enables in a film. Unfortunately, even the executives of production teams responsible for preparing post schedules are often unfamiliar with the complicated structure of post and have difficulty to comprehend the requirements of it (Silverman, 2005, p. 17). Because of this situation, the necessity of a well-conceived plan of action for post may sometimes be ignored and the workload be underestimated. However, it should be acknowledged that to reduce the problems in production process and to implement the necessary adjustments to make the film better are certainly outstanding characteristics of post production which makes it a crucial stage of filmmaking. As Manovich (2001) notes, production has become the initial stage of post production in digital filmmaking practice, because the footage now constitutes the source material to be created in post production through the possibilities of digital technology for image manipulation (p. 303). The common statement of film sets “We will fix it in post” does not

only refer to a humoristic approach towards the misfortunes of the production process, but also to a relief for another chance to get over the unexpected problems in the post production even without a comprehension of what is really done in post (Silverman, 2005, p. 15).

While post production requires both technical competence and creativity as a matter of its nature, it has always been in close relations with technological improvements. Since the invention of the motion picture, there have been many innovations that affect both production and post production practices such as the coming of sound or color, but what changed these practices dramatically is the transition to digital cinema (McKernan, 2005, p. 84). The filmmaking practice has completely changed with the coming of digital cinema and especially for post production; because it did not only bring new systems but also introduced completely different workflows that help enriching the narrational creativity and providing better control on the process including budgeting and scheduling (McKernan, 2005, p. 84). To understand the effects of this dramatic change digital cinema causes in the post production processes, it is necessary to touch on the details of how post production workflow was carried out before digital cinema and how it is handled today.

2.2. DIGITAL INTERMEDIATE SYSTEM

Silverman (2005) emphasizes that the process of transition to digital cinema has been proceeding with many new means of post production since the early 1980s (p. 35). The first step of the evolution from analog to digital systems was the debut of nonlinear editing systems which presented a total new approach to post production (Silverman, 2005, p. 35). The analog editing systems consisted of physically cutting and splicing the film until the electronic editing systems began to be used. With the emergence of electronic editing systems, the editing was handled through the transfer of analog material to high qualified videotapes with a timecode and editors were able to export a cut list of their master editing sequences so that the negative would be cut depending on the list with the timecode information (Overpeck, 2016, p. 129). This practice was more convenient than analog editing in terms of cost and time efficiency; but still, the editing was linear as the footage recorded on the tapes was linear and the editor had to fast forward and rewind the tape to

reach a scene (Overpeck, 2016, p. 130). The first nonlinear editing system was EditDroid developed by R&D lab in the 1980s and followed by Avid and Editing Machine Corp. in 1988; and Lightworks in 1991 (McKernan, 1995, p. 89). However, the filmmakers hesitated to use these nonlinear editing systems at first and the common use of them did not actualize before a decade of their emergence, till the expectations of the film industry met with the improvements in nonlinear editing systems in terms of decreasing costs and developing software (McKernan, 1995, p. 90). The nonlinear editing system has provided various opportunities for editors in comparison to analog systems through its characteristics of efficiency and flexibility (Murch, 2005, p. 75). Nonlinear editing system enables the editor to access the random footage instantly, work with fewer assistants because there is less work to be done, screen any versions of editing for the director easily by simply recalling a sequence on the computer, use multiple audio tracks at the same time and provide use of simple effects in editing such as reframing, transitions and timewarps (Murch, 2005, pp. 70-72). All these advances in the digital technology have caused irreversible changes in post production; editing constituting only the beginning of the transition to Digital Cinema workflow.

Digital intermediate process has become the following crossroads of film post production workflow. In order to refer to the central research question of this study and understand what has so dramatically changed in transition from digital intermediate to completely digital cinema system; it is obligatory to explain what steps digital intermediate consists of and what has been eliminated in the post production workflow after this transition.

The term “digital intermediate”, refers to an intermediate stage in post production, which is basically the operation of digitization of the analog material (film), the process of the post production to be carried out digitally and the print of the final product on film again (Silverman, 2005, p. 52). As Silverman (2005) tells, the digital intermediate process starts with scanning the negative film in a digital scanner. The frame scanning can be made for 2K, 4K and even 6K resolution; however, as the resolution of a frame increases, so does the data size and therefore the time needed to process the image. The usual size of a file scanned is 2K as the film is also down-converted to 2K before it is printed on film as a final

product. The scanning could be carried out in two ways: either the negative could be cut so that with the negative cut the scan would be completed in order, or camera reels could be scanned and edit decision list (EDL) would be used to conform the film edit. Offline editing, which is done with low resolution digital files on a nonlinear editing system is moved to an online system through EDL. Taking the EDL as a guide, the offline editing is conformed, and the edit sequence is created on an online system after scan, following the cues in the EDL. This process of conforming the offline edit with high quality digital files, so that the online edit would exactly be the same with the offline edit is called online editing. The color grading, which is also called digital timing in DI can begin as the conforming is done; the timing is made in telecine rooms on large screens with digital projection by the grading artists along with the director and director of photography to make adjustments on color levels. Before digital intermediate, the color grading of the footage was carried out in the lab by altering the yellow, cyan and magenta levels of the image; but only as an overall adjustment influencing the hue of all the images together (Prince, 2004, p. 27). Digital timing on the other hand, has made it possible to work on the images' levels of color balance in detail and separately. In digital intermediate, the visual effects shots are also assembled on the online system, concurrent with grading so that the final look of the images can be screened together, and the film is finalized and ready to be transferred to celluloid again. As the digital intermediate process is completed, the digital files are transferred through systems like CELCO and ARRI Laser to be printed on 35mm film as the final product (McKernan, 2005, p. 94). Coen brothers' *O Brother, Where Art Thou* (2000) is an important film in the history of digital intermediate workflow, as the film was entirely created in a digital intermediate workflow with the insistence of the director of photography Roger Deakins. By using digital timing to change the color of specific scenes to sepia tones, a certain mood in the film was created in coherence with the narrative (McKernan 2005, p.94). Coens' film has led to the new workflow of digital intermediate, which replaced the cut negative as the source material to be printed on 35mm (Silverman, 2005, p. 52).

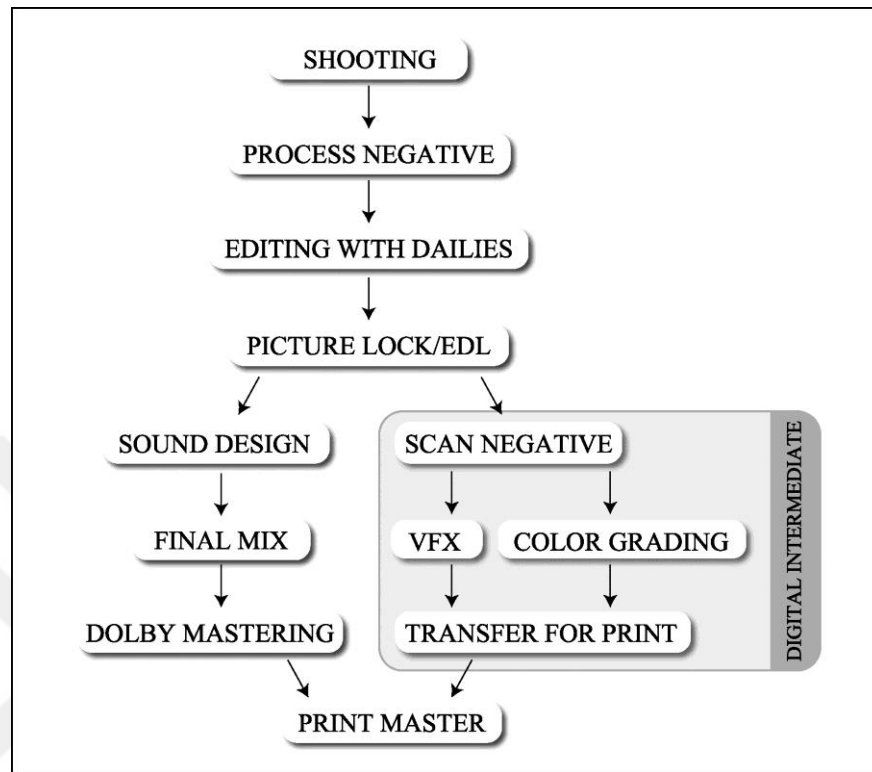


Figure 2.2 Digital Intermediate Post Production Workflow

Depending on the information given above, it is possible to say that the digital intermediate post production workflow can be seen as the pioneer of an entirely digital cinema system including the creation of digital master instead of 35mm print. Digital intermediate process brought in various advantages to filmmaking practice, because it enabled new methods and creative tools for storytelling. The color grading in the digital intermediate workflow expands the options of directors and cinematographers for pushing the limits of cinematography, or visual effects which can be assembled in a film under the easy control of a supervisor efficiently contribute to the creativity as a tool of narrative in a film. According to Silverman (2005), these changes along with the digital workflow would cause the post production professionals to henceforth play a more vital role in the creation of a film; as the color grading artist or the visual effects supervisor gained much importance in defining the creative look of a film in addition to their detection of the technical paths to be followed (p. 55).

Darcy Antonellis (2005) explains that the film exhibition in analog form has developed in years by technical innovations first and foremost being the digital intermediate, but also with improvements in release printing processes like the advances in chemical processing, high speed printing and qualified negative stock. Despite the many technological changes speeding up the processes, Antonellis (2005) claims that the film distribution practice did not dramatically change for quite a long time until digital distribution became an option (p. 207). McKernan (2005) also presents a similar opinion to Antonellis about film distribution and exhibition, mentioning that the film projection principle has been the same since the invention of cinema even though there have been so many changes and innovations in the production and post production processes (p. 161). However, analog film distribution and exhibition systems have also evolved into digital systems with the rise of digital technology and what we mean by entirely digital cinema system has emerged as a result, referring to all phases of a film to be carried out digitally: production, distribution and exhibition (Erkılıç, 2012, p. 94).

As McKernan (2005) explains, a negative print fades, catches dirt, and scratches as the print is screened through film projection. Digital cinema projection becomes a necessity to eliminate the quality loss on picture, scratches and tears. When a 35mm print is screened repeatedly in a film theatre, the audience cannot see the film in the essential conditions that should be provided as the print loses much quality as soon as it is projected (Monaco, 2000, p. 146). Thus, the opportunity of digital projection system eliminating these physical drawbacks becomes its primary appeal not only for the filmmakers, but also for the spectators (McKernan, 2005, p. 162). In addition, there are many other advantages the digital projection enables in terms of the costs of distribution and exhibition. John Belton (2002) mentions that the digital distribution and exhibition is an advantage mostly for distributors as the costs have decreased severely in comparison to the distribution of 35mm prints (p. 110). According to Gözde Sunal (2016), digital cinema ensures cost saving in production, distribution and exhibition, opportunities to enlarge the film market, prevention of piracy with the encrypted master and the chance to be exhibited worldwide on the same box-office date (p. 306).

Belton (2002) claims that the possibility of an entirely digital cinema has attracted the industry and at the beginning of the 21st century, digital took over the lasting hegemony of pellicula (p. 103). When analog projection was exchanged with digital projection, the digital intermediate process lost its early influence as the whole post production process was now digital. At this point, it is important to clarify a conceptual confusion in the definition of the term, “digital intermediate”. This confusion basically is caused by the different uses of the term in Turkey’s and other countries’ film industries. As explained above in this section, the concept of digital intermediate is invented to define the analog material digitized for an efficient post process including color grading and visual effects being handled digitally, and the final image being printed on the analog material again for release. In various scholarly sources such as *Understanding Digital Cinema* (Swartz, 2005), *Digital Cinema* (McKernan, 2005), and *Türkiye’de Sinema Salonlarının Dijital Dönüşümü* (Erkılıç, 2012), the digital intermediate process is mentioned as an early stage in transition to entirely digital cinema; thus, as a component of digital cinema.

Unlike Turkey, many post production companies abroad still use the term “digital intermediate” as a facility referring to the digital finalization of image before the creation of a digital master. But in Turkey, the term “digital intermediate” is no longer used within digital cinema system; the term is only mentioned to refer to a digital phase of an analog era in the past. Today, all the post production workflow is digital and using the digital intermediate term as a part of the entirely digital cinema system leads to a conceptual confusion. Thus, to avoid this confusion in identifying the digital intermediate process and entirely digital cinema system, I would like to clarify the usage of terms for this study.

The crucial point about digital intermediate process is that it is the digital phase of an analog workflow. It is created to ease the analog post production workflow through the opportunities technology provides. The source material and the final output is analog, while digital intermediate is the intermediary phase between these two. Hence, I refer to the digital intermediate process only as the in-between digital phase of analog post production and exclude the term “DI” from digital cinema definition just like it is common in Turkey’s film industry. On the other hand, the term “digital cinema workflow” is employed for a post

process handled completely digitally. Furthermore, it is possible to say that the term “digital intermediate” does not fulfill its first impression today, as the groundbreaking quality of the process arises from the mediation it enables between analog and digital systems. The entirely digital cinema system does not require a mediator and digital intermediate just remains as a term belonging to the last phase of post production in analog cinema. Depending on this separation of terms and processes, it is necessary to investigate how the post production workflow has changed with the transition from digital intermediate process to entirely digital cinema system referring to the research question of the thesis.

2.3. COMPLETE DIGITAL POST PRODUCTION

Digital Cinema mainly includes a list of standards and terms defined by Digital Cinema Initiatives³ that aims to provide a consensus on technical competence, efficiency and control of quality for an entire workflow in digital cinema (Purcell, 2007, p. 35). As mentioned previously, digital cinema has altered the traditions and sense of filmmaking practice all over the world irreversibly (Manovich, 2001, p. 300). It is considered as the most remarkable improvement in cinema technology after the coming of sound (Sunal, 2016, p. 300). Digital projection has been the milestone of the advancements in digital technology; and more films have been dependent on digital post production workflows (Belton, 2002, p. 103). The transition to entirely digital cinema system has taken the opportunities digital intermediate provides one step further by phasing the analog source material and analog master print out completely. As a result, digital cinema does not only guarantee that the film is screened at the same quality from its first day to the last day of release (McKernan, 2005, p. 169); but also accelerates the post production process by eliminating the digitization, scan and transfer for negative print steps effectively. The footage is usually shot with digital cameras, even in specific digital file formats to be edited after transferring to an editing system shortly. As Manovich (1995) notes, the borders among shooting and editing are already wiped away with the transformation of the conventional film editing and optical printing to digital editing and image processing (p. 3).

³ Digital Cinema Initiatives (DCI) is the formation of seven major studios gathered with the aim of establishing common standards for digital cinema. The studios are: Disney, Fox, Metro Goldwnmayer, Paramount Pictures, Sony Pictures Entertainment, Universal and Warner Bros (Swartz, 2005, p. 8).

The scheduling of the works to be done in post production is very important, as the post production process usually uses a one-by-one workflow. Either in digital intermediate process or in entirely digital post process, after the film's editing is finalized by the editor with the approval of the director and the executives, the picture is locked. The picture lock refers to the end of the picture changes in a film so that the post production process can begin for sound, music, visual effects and color grading teams waiting for the finalized picture of film (Arundale and Trieu, 2014, p. 103). With the picture lock, the offline exports of the whole movie are delivered to teams noted above, so that they can start working on the film frame by frame. What makes the picture lock a significant step is that, if any changes are made in the picture through editing after the picture lock, the exports should be prepared again as the locked picture is the major guidebook to the post production process. Differentiating from digital intermediate process, after the picture lock, the film is exported digitally from nonlinear editing systems without scanning and handed to sound, music, VFX and color grading teams as digital files. These files usually have special titles on the image including watermarks with team names, timecode information and dates of the export to avoid any mistakes in the process. So, all the teams work on a specific copy of the same picture as different teams need to work with separate formats with different specifications. While the film image is prepared in visual effects and color grading on an online system after the offline edit is conformed with high resolution data files, the sound design is also handled in stages such as sound editing, ADR, foley (sound effects) premix and final mix concurrent with the online image.

The color grading and visual effects works are completed in a similar workflow to digital intermediate. As previously covered in the digital intermediate process in this chapter, digital color grading enables to modify levels of hue, saturation and contrast of the principal photography and treat the image within technical sophistication and creativity. Stephen Prince (2004) draws attention to the fact that in comparison to photo-mechanical ways of the analog system, digital methods allow the contribution of high artistic input through color grading (p. 27).

Visual effects have been the face of the digital cinema system, as the most evidential improvements in storytelling and narration emerged at this phase of digital film production (Prince, 2004, p. 26). Visual effects have today become a basic practice of production and an important tool to create meaning rather than a sign of technophilia (Erkılıç, 2017, p. 68), due to the possibility of designing and creating locations, characters or specific images for a film completely on computer referring to the term “CGI”. Besides, visual effects supervisors are sometimes present on the shooting locations with the cinematographer and the director to mentor them on how to shoot a VFX scene or an element to be composited in the post, in the most appropriate way (McKernan, 2005, p. 95). Similarly, cinematographers have been involved in the post production processes a lot more than in analog post production, because the facilities of digital post production consist of cinematography as an important element to be processed in post as never before (Prince, 2004, p. 29). In digital cinema, VFX stage can begin even in pre-production with the early studies on CGI including 2D or 3D animation and become the first image to be created in the film. Based on this practice, Manovich (2001) describes digital cinema as a specific kind of animation using live action as one of its components (p. 302). As the visual effects are completed in the digital post production workflow, the finalized VFX shots are imported in the timeline of the online system and the VFX shots are graded if necessary. After the grading is completed with all the VFX shots on the timeline, the final picture is delivered to the sound team for final mix. As the image and sound are both finalized; the final image is rendered, and the audio master is recorded for digital cinema packaging.

Digital cinema packaging is the process of combining the final picture of the film with audio files, subtitles and watermarks so that an integrated digital file is created from the merging of all the materials of a film. This final product prepared to be released is called a DCDM meaning Digital Cinema Distribution Master (Carey et al., 2005, pp. 85-86). DCP is created from DCDM as a compressed and encrypted digital file which is transmitted to theatres to be decrypted and decompressed before the exhibition of the film (Carey et al., 2005, p. 86). This digital cinema packaging becomes the final step of the entirely digital post production workflow of a feature film.

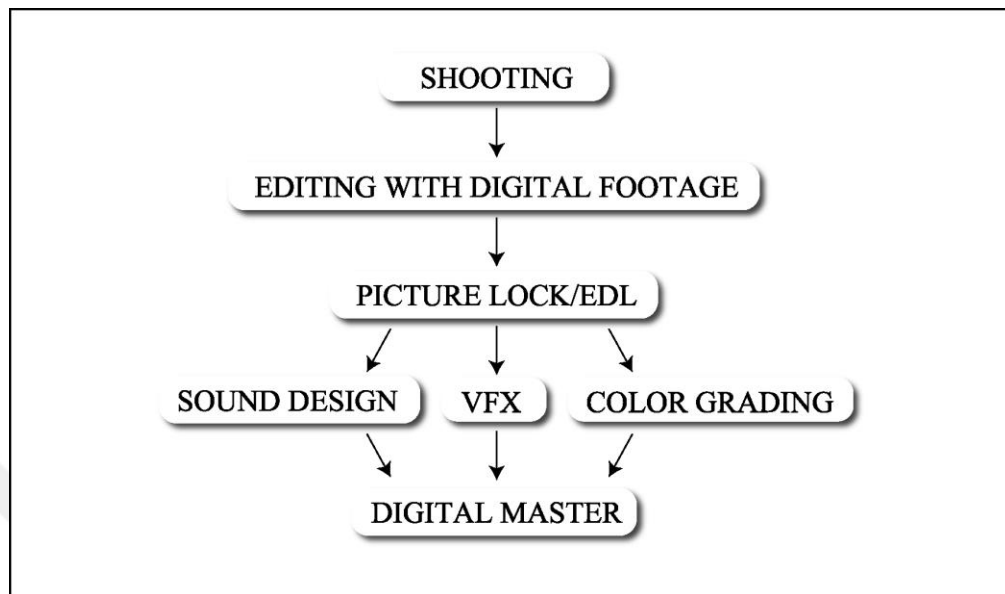


Figure 2.3. Entirely Digital Post Production Workflow

Looking back on the distinct post production workflows in the digital intermediate process of the analog material and the entirely digital cinema, the main differences of both processes appear because of the disappearance of the analog material: the celluloid. The digital cinema post production workflow eliminates the first and last step of the digital intermediate workflow, which is the complementary operations of each other: the scan of the negative to digital at the beginning and the transfer of the digital files to 35mm print at the end. These changes have led to strong alterations in the working practices of film post production processes as certain steps are excluded from the workflow completely today. The negative scan and the laser transfer used to be the unchangeable phases of the post production workflow in terms of scheduling, as these phases were mostly mechanical and demanded a certain amount of time which could not be changed. What I would like to underline here is that these mechanical processes of the digital intermediate were the determinants of post production schedules as the phases could not be eliminated or shortened in any way as long as the film was shot on celluloid and the projection tradition was still analog. What entirely digital cinema system has made possible is that these mechanical operations are phased out and film post production workflow has become much faster with the proficiency that the digital technology allows. While transition to digital

cinema system from digital intermediate process has contributed to the filmmaking practice at a great deal, it has also altered the working conditions of the laborers both in production and post production. Focusing on the research question of this thesis, the study will try to understand and explain how this transition has influenced the filmmakers on an industrial scale looking at how digital cinema has been welcomed generally.

2.4. THE INTRODUCTION OF DIGITAL CINEMA SYSTEMS

Transition to digital cinema has brought in tremendous implications in film industries around the world in terms of shaking the traditions of filmmaking through the various opportunities it allows for improving creative ways of storytelling. As mentioned in the previous section of this chapter, digital cinema has great appeal for the professionals of film industry as it has facilitated the production and post production practices in addition to its possible creative contributions in filmmaking. McKernan (2005) claims that although the birth date of digital cinema is not very clear, there has been a tendency to acknowledge the start of digital cinema in relation with the director George Lucas's 1996 letter to Sony asking to create a high definition system recording, storing and playing images at 24 frames per second which is the universal film standard for feature films (pp. 27-28). Lucas's *Star Wars: The Phantom Menace* (1999) gave the good news of digital projection for the industry as the film was projected digitally in US (Belton, 2002, p. 103). Lucas has been mentioned very often when referring to digital cinema as he has frequently shared his intriguing experiences and positive opinions about the opportunities of digital cinema on different platforms.

The first step of transition to digital cinema was taken in the editing process, in post production, and then moved on to production process through digital cameras and to processes of distribution and exhibition eventually (Karabağ, as cited in Sunal 2016, p. 300). McKernan (2005) calls post production process as the steadiest and most settled aspect of digital filmmaking, because post production professionals have long practised this change since the emergence of nonlinear editing systems with ever-growing technological equipment and facilities enabling multitasking. Moreover, the opportunities of digital post production have also altered the expectations of executives from post production

professionals to cover more than one specific job. In digital post production, the post workers need to be competent for more tasks than just their original jobs (p. 95). Caldwell (2013) also mentions that digital technologies lead to industrial pressure to extend the work field which he also defines as multitasking that puts workers under stress (p. 95). This situation causes changes of job definitions and shifts on how business is done in the industry all over the world. For instance, with the use of nonlinear editing systems and digital visual effects as a basic part of the common film practice, the scenes can be shot in a freer fashion, without the necessity of watching a specific order for post (Karabağ, as cited in Sunal 2016, p. 301).

One of the most significant consequences of the transition to digital cinema is that it allowed the development of a more independent cinema. The lower costs of digital cinema for the directors have brought in more chance to independent directors to find a way to tell their stories (Belton, 2002, p. 106). With the widespread use of digital cameras, a larger number of films have been made; the films produced in 2000 were twice the number of films in the previous year worldwide (Ormanlı, 2012, p. 35). Filmmakers have overcome the technical difficulties and limitations of the analog systems in digital cinema through the decline of costs and shortening of schedules. As running out of filmstock is not a risk in digital cinema, directors get the chance to shoot more takes for a scene and avoid assembling a bad take in the film as well (Erdoğan Tuğran and Tuğran, 2016).

For all of these reasons, after a period of refusing digital cinema because of the strong belief of “it will never be as good as celluloid” by some professionals in the industry (McKernan, 2005, p. 169), digital cinema was welcomed when the industry got to know more closely what digital cinema brings and had a clearer opinion on pros and cons of it. As Belton (2002) states, digital cinema never only belonged to Hollywood; on the contrary, it gave rise to the possibility of an alternative independent cinema (p. 106). What Belton (2002) asks about the rise of an independent cinema whether the films of the independent cinema would make use of technology for the creation of an alternative narrational language, or it would produce various versions of Hollywood films (p. 106). Another convenient question can be, whether digital cinema only brought opportunities and really

enabled the ideal way of filmmaking practice for the frequently ignored people of the industry: below the line laborers, particularly for post production workers.

2.5. DIGITAL CINEMA SYSTEMS IN TURKEY

Cinema in Turkey always made progress in direct relation with the country's economic, sociological and cultural conditions at the time (Ormanlı, 2012, p. 32). The global tendency of transition to digital cinema system took place in a quite difficult time of the cinema industry in Turkey. Whereas Turkey was one of the most productive film industries in the world with 299 films in 1972 in the golden era of Yeşilçam (Behlil, 2012, p. 42), by 1990s cinema in Turkey went through a real crisis because of the ongoing effects of 1980 military coup and the changes made in foreign capital law by the end of 1980s (Erkılıç, 2009). The coup led to many film production companies' shutting down and the emergence of a video market for home entertainment. Besides, with the introduction of two major Hollywood distributors United International Pictures and Warner Bros. in the film market of Turkey by 1989, the distribution became a major problem in the industry as well (Behlil, 2012, p. 43). As the distribution companies have huge effects on the films for a chance for exhibition in Turkey, many Turkish films had problems to find theatres to be screened and even has limited intervention regarding the box office revenues; hence the 1990s were the hard time of the cinema industry in Turkey (Çetin Erus, 2007a). In 1990s, only 1/3 Turkish films had the chance to be released: 137 of 447 films could be exhibited between 1990-2000 (Erkılıç, 2003, p. 177).

After a long period of experiencing various setbacks, cinema in Turkey began to revive again by the end of 1990s. Around the same time, the filmmakers started to benefit from the opportunities of digital technology through the development of an industry based on television and commercials. According to Zeynep Çetin Erus (2007b), films in the new era has been financed with funding of private sponsors, TV channels, Ministry of Culture, and by individual sources. In addition, the introduction of TV and commercial production companies to the film industry with high budgets has also enabled finance for feature films (p. 124). Whilst the film industry was unstable and unreliable for making investments in 1990s in Turkey, creating TV programs and commercials were profitable investment in

comparison to cinema. Many directors started shooting commercials in this era and made films within the commercial companies' productions. With the spreading digital workflow in production and post production, the equipment used and the teams working became more common for cinema and TV. For instance, a film editor can also be employed in a TV/commercial or vice versa as the technical requirements of editing have become much more similar in the digital era, and this situation also resulted in blurring of the boundaries between film and TV industries in Turkey. The rise of TV/commercial market has also provided upgrading for more qualified technical equipment for production and post production in addition to its benefit of employing many workers of the film industry when it underwent a crisis (Çetin Erus, 2007b). The new directors coming from television films, series and commercials and their practical experience with digital tools led to the emergence of different narrational styles in filmmaking including fast cuts and mobile cameras as well (Arslan, 2009, p. 88).

Just like it is accepted globally, the cinema in Turkey is also considered to have been partly democratized with the advent of transition to digital cinema. The new digital equipment and workflows have given opportunity to many young directors to complete their films with low costs. The possibility of independent filmmaking rose, and the filmmakers have been offered various new paths to follow with digital cinema (Erdoğan Tuğran and Tuğran, 2016).

With the introduction of the new cinema in Turkey in 2000s, the technical inefficiencies were left behind as the appearance of digital technologies have been welcomed in the industry (Ormanlı, 2012, p. 38). Regarding the changed costs of release copies with transition to digital cinema, the cost of a negative print which costs about 1000-1500\$ in Turkey decreased to 50-100\$ with the transition from print to DCP (Tomur, Kol and Bilaçlı, 2016). The transition to digital projection, which is the last stage of the digital cinema system, started in 2007 in Turkey. By 2010, the theaters with digital projection were 205 of total 1874 theatres (Erkılıç, 2012, p. 97); by 2011 the digitalization of the theatres in Turkey became 52% and by 2014, the rate rose to 77% (1692 is digital in 2188 total number of theatres), which is slower in comparison to digitalization of theatres process

in Europe (Tomur, Kol and Bilaçlı, 2016). This transition to digital projection attracted audiences as the digitalization of the theatres provided the upgrade of the theatres physically and audio-visually (Sevinç, 2014, p. 108).

Nigel Culkin and Keith Randle (2003) emphasize that the digital cinema has widely drawn interest with the opportunities it allows in any stage of filmmaking; however, much of the research⁴ focus on the effects of digital cinema's creative contributions and not on the financial effects (p. 3). Taking this concern one step further, it is possible to claim that even less research has been done on the effects of such a tremendous technological innovation on the labor processes. Digital cinema has often been called in relation with the democratization it has brought in to the practice of filmmaking, but a detailed research of working processes of below the line professionals should also be made to develop a wider understanding of the effects of digital cinema in Turkey's film industry, covering post professionals.

⁴ The following sources represent some of the studies that adopt the mentioned approach: Ganz, A., Khatib, L. 2006, *Digital cinema: the transformation of film practice and aesthetics*. Prince, S. 2004, *The emergence of filmic artifacts*. Rombes, N. 2009, *Cinema in the digital age*. Tağ Kalafatoğlu, Ş. 2015, *Dijital çağın belgesel sinemaya getirdiği fırsatlar ve yenilikler*.

3. CHALLENGES IN DIGITAL POST PRODUCTION FOR LABORERS

One of the most important aspects of managing a film post production can be considered as making the most convenient plan for scheduling and budgeting by looking at the requirements of a film specifically. While making an efficient post production plan, it is not enough to calculate only the technically necessary time and money; a well-organized post production plan also requires taking the director's and producer's expectations into consideration about the film's post process.

According to McKernan (2005), the post process usually lasts longer than shooting, as a feature film's post production process is multilayered and complicated (p. 83). As the statement of McKernan refers to an ideal situation for post production planning, it may be discussed that if it is generally the case in Turkey's film industry. Although the significance of post production process in filmmaking is known, the stage of finalizing a film already shot is considered to be less noteworthy than shooting, and a cheaper talent in comparison to more visible jobs of production (Silverman, 2005, p. 15). This point of view may often result in ignoring the importance of the whole post production process. Such an approach towards the process may sometimes lead to various problems during filmmaking, under the control of production teams unfamiliar with the necessities of the post process: poorly planned working schedules, extra post workload handed by production teams and the demands of executives pushing the limits of post management can be considered as main results of such approaches making the post process more challenging than it is for the laborers.

The scheduling is the essential element of post production process. As there are various teams working on different jobs of the same film concurrently, and they should work in an order within the post workflow, the post schedule needs to be prepared according to the details carefully. Just like a film's shooting date is determined by the completion of the preparations in the pre-production stage, the release date of a film should also be assigned paying attention to the necessary amount of time for post to be completed. However, the post production schedule is not always prepared in optimum conditions in Turkey's film industry, and what often determines the scheduling of the post process of a film becomes

the assigned and announced release date of the film. A film may be released in a very short time after the shooting, ignoring all the time necessities of the post process. Silverman (2005) argues that the stress of decreasing the costs and shortening the time can frequently lead to limitations in the post production of the film, because production issues are most of the time too valuable to risk (p. 17). Similarly, the increasing workload and demands to handle the process in shorter schedules with more challenging tasks can also be seen as results of the transformation of benefits of digital cinema system into disadvantageous working conditions for post professionals. In Turkey's film industry, post production becomes the main stage to trivialize and make cuts from by misusing the opportunities of digital cinema system such as time efficiency, flexibility and practicality. So, it is usually considered that the release date can be attained "somehow" even though there is not enough time to finalize a feature film. What this chapter focuses on is the "somehow" part mentioned above; how and why post production process has become the best option to make cuts of time and budget in relation with the digital cinema system in Turkey's filmmaking practice.

3. 1. DECREASING TIMELINE

When working within digital intermediate post workflow, there was a chemical process which could not be shortened as mentioned in the first chapter. The negative was scanned to digitize the film material, and after finishing the post digitally, the final picture was transferred to be printed on the negative again. These scanning and transferring operations required a certain amount of time in the post schedule. There was no way of shortening the time needed for those steps, it was technically not possible, and the filmmakers knew and accepted that. Post production schedules were planned according to this information and it was not likely to squeeze the time in the post schedule as the transfer of digital files to negative before printing even lasted at least three to five days for a five-reel length (approximately about 105 minutes) feature film. After the transfer, the preparation of negative prints for release also took a long time in comparison to the time needed to produce DCPs today. According to Silverman (2005), the print order for a film's theatrical release were usually about 3000 by the year 2005, and probably even more for blockbusters

in USA. It would take one week to print that number of copies even in a big film laboratory with high speed printers (p. 32). So, the number of release prints were quite important while planning post schedules, just like they were also significant for making a budget. As the cost of a negative print was so much higher than the cost of a DCP, producers broadly knew how many negative prints would be ordered for release at the beginning of production, because the number of release prints excessively affected the post budget.

However, in Turkey, the preparation of the prints needed quite a lot more time in comparison to what Silverman tells. The technical supervisor of a big post production company in Turkey, with 30 years' experience of profession has stated that towards the end of the analog projection, at the time printing and processing operations became much faster, the number of release copies printed on two separate machines in one day with 24 hours of working were about 50 copies in Turkey. Today in digital cinema, the DCPs created in one hour on one computer is about 15 copies for an average computer. This means that the necessary time to prepare a release copy has accelerated enormously in digital workflow in comparison to digital intermediate workflow (in-depth interview 3, 02.05.2018).

The digital cinema system annihilated the compulsory calculations of the previously used technology, the laboratory stages of digital intermediate workflow; and enabled a shorter timetable for post. This resulted in the requirement of a totally new workflow and a new design for managing the post in terms of scheduling. The post production process has accelerated with the computer-based technologies, and the operations taking a long time in digital intermediate process has remarkably shortened in the workflow. Director Jacob Kornbluth states that his film *The Best Thief in the World* (2004) had the fastest post in his filmography, pointing to the short time spent between the picture lock and the master creation of the film. He mentions that the opportunities digital cinema ensures are so fast and flexible that the post process has speeded than ever before (McKernan, 2005, p. 151). Whereas this acceleration has been the most widely accepted benefit of the new post production workflow, scrutinizing the labor process of post production in Turkey's film industry, it can be claimed that it has also transformed into a disadvantage and the fastening of the process brought many problems as well.

As the entirely digital cinema system accelerated the post production process excessively, it was a big surprise to experience how fast post was in the new system after the long compulsory days of chemical processing. The major determinant of post became the release date of a film in Turkey, and the digital master of the film could be prepared and distributed in the last minute possible, within the same week of the premiere and the release. Whereas the time efficiency of digital cinema in post, distribution and exhibition should be advantageous, it began to squeeze the working schedules irreversibly which changed the working conditions of the post production laborers. The post schedules began to be shortened by leaving quite a tight time to finalize the films before release, without paying attention to the necessities of the work; thus, extreme working conditions for post laborers emerged. The reason of sticking to the release date as the major determinant of a film's post schedule in Turkey may be seen as the result of the seasonality of box-office revenues. Contrary to the US, the films usually have higher box-office revenues in winter in Turkey (Altioklar, 2010, p. 15), which cause the producers and distributors to put effort to release their films in the high season, which is mostly from October to March. As long as the number of the theatres do not increase, many films compete to find theaters to be exhibited, sometimes leading to end the release of each other in a short time (Göral, 2009, p. 54). Thus, many producers and distributors try to release their film in a specific season of the year even if the film's production is not planned according to the release date, and as a result, the post process is inevitably tightened trusting the "advantageous time efficiency" of digital post production workflow. The first interviewee of this study, a freelance post production supervisor has mentioned that the first film she worked in was shot with 35mm camera and had a digital intermediate post workflow which lasted 6 months. In a couple of years, she worked in a film shot digitally but within digital intermediate post workflow for 3 months. The films she has worked in for the last 3 years have been entirely digital and each lasting 6 weeks the longest (in-depth interview 1, 30.04.2018). It may be an opportunity of entirely digital cinema system to enable finishing post production processes in such a short time, however it may also be argued that the fastening of these processes also leads to exploitative working conditions for the employees. Although the long-lasting steps of digital intermediate are eliminated, there are still a series of work to do on a film in

post production before its distribution. The online editing, color grading and visual effects shots along with the sound design are often tried to be finalized in quite short periods by inevitably lengthening the work days. As the time given to finalize a film in post shortens, the hours of a working day increase prominently. One of the interviewees of this study, a 12-year experienced sound editing supervisor draws attention to long working hours:

The post schedules have become extremely short so far, pushing us to superhuman working hours inevitably. At final mix, which is the last step of sound design before mastering, I work approximately 16 hours a day. The final mix often lasts for 10 days and for the last couple of days I work with the director and the producer, and it may even take 24 hours of work. It is very unhealthy to work 16 hours a day at such a high audio level as I do in final mix, but you have to do it to finish the job on time. (in-depth interview 7, 04.05.2018)

Another sound editing supervisor who has been doing his job for 17 years mentions that he wishes if digital cinema did not bring so much time efficiency which led to extremely short post schedules for feature films. He states that cinema deserves more time and attention than it has in the digital era: “There was a compulsory stage of sound design in analog projection, Dolby mastering, which required another work day in the sound design schedule; you had to get that license for theatrical release which used to ensure a standard on the audio master of a film” (in-depth interview 6, 04.05.2018). A freelance post production supervisor, interviewee 2 states that in the last week of a feature film’s post schedule, he works for 12 hours at minimum, 18 hours for the last couple of days because he must work until he finalizes the job (in-depth interview 2, 02.05.2018). Interviewee 1 says that she usually works longer towards the end of the process, reaching 18 hours a day, but with an average of 15 hours in the overall process as the shortening of the schedules has extended the working hours per day. Interviewee 3 mentions that working regularly has always been unlikely for post professionals; but the demands of executives and bosses from laborers for working longer hours have increased a lot in the last couple of years. He states that the work is always urgent and most of the time it is asked to be done in the last minute possible with the potentials of digital cinema. He notes that to ask for a job to be finished in the next morning means asking the laborer to work all night without sleep. According to him, extensive working hours is the biggest problem in post production labor process in Turkey.

Interviewee 1 draws attention to the shortening schedules by giving an example on her labor process while preparing trailers for feature films:

While we worked with digital intermediate workflow, the producers knew that even a two minutes long trailer could be prepared at least in one week after the picture lock in post. In the last two years, the producers and distributors ask me to prepare a trailer in one day after the picture lock. What this means is that all post professionals on that job should stay up all night working on the trailer and finish it until the next morning, without noticing how difficult it is to work like that or what it takes for the laborers to finish that job on time. They know it can be done in the digital system and once you do it, they ask you manage it the same way all the time. (in-depth interview 1, 30.04.2018)

Interviewee 3 explains that the advantage of digital workflow's processing very fast has given way for leaving a very short time for post and the time remaining from the laboratory process has been stolen from post. It would be more efficient for post professionals to be given that time and in that case, it could be an advantage; but there is no time benefit for laborers today. According to him, before digital workflow the process was slow, less work was done in longer period. Today, as the digital process is fast, the employer asks the worker to do many jobs at the same time instead of one, because digital is fast. He mentions that the basic truth about the post process is that there is always a way to abuse the laborer in Turkey's film industry, even by turning the advantage of a technological advancement into a disadvantage for them.

Interviewee 10, an inhouse VFX supervisor working for 18 years has stated that the digital post workflow is really time efficient for VFX artists with the plugins and efficient tools developed for compositing; and it is sometimes much faster to composite a shot. However, there is no way to quicken the time to control the work done; to check a VFX shot means watching it in real time and several times to see if there are any mistakes. The shortening of processes in the digital workflow does not change the fact that teams still need time to check the work they have done (in-depth interview 10, 07.05.2018).

The sound editing supervisor, interviewee 7, notes that the computer he works on crashed several times in a day at final mix screening of a feature film as he worked for long hours on the computer and the software began to give constant errors. He claims that the director and the producer took it normally that the computer crashes after working several hours;

but it would be inexcusable for him to tell he is exhausted to go on working even after 18 hours in one day.

Interviewee 2 has addressed another important aspect of the problematic working schedules in post processes by mentioning that the short schedules and the pressure to complete a job in a very limited time also leads to cut corners of workers unfortunately: “There is usually no time to discover a creative and different narration for the feature films we work on, we usually prefer to follow the already tried path not to take risks in tight schedules.” However, he also claims that such preference causes similarities among the jobs which harm the narrational creativity of a film. Depending on this statement, it is possible to argue that one of the major benefits of digital cinema, the creative potential it brings, has sometimes been wasted due to tight post schedules in Turkey.

Interviewee 4, who has been working as a color grading assistant for 7 years mentions that one of the huge problems working for long hours causes is, the ever-decreasing social life. He says that he cannot make any plans for his private life, because there is always a last-minute job waiting for him urgently without noticing how long he has already worked that day (in-depth interview 4, 02.05.2018). Some interviewees have also stated similar opinions about how their life has become busy with work and there is no time for any stress relief activities (interviewees 2, 6 and 7). Interviewee 2 states that while working for a feature film, he has to make a choice between sleeping and socializing, but the exhaustion mostly makes him choose sleeping. Interviewee 7 tells that usually he works alone in his room, he leaves the job while most people are asleep, and he does not have the chance to be involved in any social interactions even with his family. Interviewee 3 states that one of the major problems that ended his marriage was his extreme working hours and no one ever refuses the informal working rules of post production in Turkey.

All the interviewees state that they believe in the requirement of a legal arrangement regarding the working conditions of post production processes, the working hours having the highest priority. It should be mentioned that the trade association representing film and TV professionals in Turkey, Film and TV Union, has been working on making the working conditions of the production workers better since 2015 and has obtained results in sets by

arranging the legal working hours (interviewee 11,14.05.2018). However, there has been no legal working hours limit for post production professionals in Turkey yet.

3.2. GROWING WORKLOAD

The emergence of various technical opportunities with digital post workflow has developed an understanding of post production being quite a simple job to be covered in a short time in the digital era. Although digital technologies have eased the post processes by getting rid of the bulky phases of analog systems, the post production is still a multilayered process including several significant branches to control at the same time.

It is possible to argue that there is a common tendency to underestimate the post work in the digital era regarding time efficiency, practicality and flexibility digital post workflow allows. However, at least in the case of the film industry in Turkey, the workload done in the post process does not go down in digital post workflow; on the contrary it encourages the production teams to hand more work to post production as the digital post workflow is more time efficient and budget friendly than analog and digital intermediate workflows. The unfamiliarity of production teams with the post process leads to a common, but false assumption about digital workflow enabling to fix any problems easily. So, simple issues which can be taken care of during shooting are sometimes ignored and handed to post production teams as huge problematic scenes to be fixed; and the short schedule makes it more difficult and challenging for post laborers to overcome the workload. İlker Çevikkaya, a post production professional in a post company tells an anecdote supporting the importance of this situation in a conference meeting at Se-Yap (2016). For a scene in which people pass by a mirror, he advised the director and the cinematographer to shoot the scene with a fixed camera so that the reflection would be cleaned properly; however, the scene was shot with a camera movement and the VFX team had to wipe out the reflection of the camera on the mirror from 8700 frames, wiping from each frame separately. Such mistakes do not only cause a hard time in the labor process of the post teams; but also rises the post budget unnecessarily. Thus, the underestimation of the post work harms the film budget by causing a huge cost item, and sabotages the post schedule as the essential time to be spent on the rest of the work is occupied with a vain job rather than a creative one. Interviewee 2

emphasizes the change of production teams' perception about the post processes by comparing their approaches in the analog and digital era:

When we worked with celluloid, everyone on the set was so aware of the fact that each meter of celluloid meant time and money which no one could risk. Directors, directors' assistants and camera crew were much more careful about even little details which could be fixed during shooting. The laborers were mostly self-disciplined to avoid any extra work which could cause additional cost for post. The digital era has totally changed this, because production people now assume that digital post is easy and almost cost free which is not true at all. (in-depth interview 2, 02.05.2018)

Such assumption becomes most obvious in the increasing workload of editing and VFX teams. Interviewee 10, as a VFX supervisor, notes that it is necessary to explain to production workers and even executives that the negligence in production stage may cause a serious workload for post process with extra costs. It is a fact that on set production is a difficult rush and it is not easy to prevent misfortunes all the time; but still, paying attention to little details may also save the unnecessary time and energy to be spent in post. Interviewee 1 mentions that while working with digital intermediate, the production teams used to check the framing to see if anything could be fixed before shooting like a boom or a reflection of an equipment in the frame. Because in digital intermediate, before VFX shots were delivered to VFX teams, each VFX shot was scanned separately and it was not possible to export new VFX shots every moment, as it was not as practical and cheap as in digital workflow:

The opportunities of compositing and CGI were too expensive and painful to waste with cleaning equipment or fixing simple mistakes that could be handled during shooting. The digital cinema replaced this well-disciplined and careful attitude of production laborers with an inconsiderate comfort. The VFX breakdown sheet of a feature film mostly includes shots of cleaning booms, lapel microphones and reflections of equipment in several films I work for. (in-depth interview 1, 30.04.2018)

Interviewee 2 explains the reason of this change about self-discipline in production stage as the teams' perception of analog systems being complicated contrary to digital systems. He states that post used to be a mysterious stage for many production laborers with its complex phases and the most widely known fact about the process was high costs. The flexibility of entirely digital cinema system enabling a relatively cheaper and shorter post process has also led to a relief on set for shooting more footage without any considerations. As Caldwell (2013) mentions, when the post workflow depended on film celluloid, the

directors used to shoot less footage which resulted in a more predictable editing process. However, the digital post workflow has led to work with a considerable amount of footage in editing with same number of laborers today (p. 94). Interviewee 9 has worked as an editor for 47 years and edited over 200 feature films, many of them belonging to Yeşilçam era. He notes that he has worked in every stage of analog post production before he became an editor and that he had the chance to work with all editing technologies in Turkey including analog, linear and nonlinear editing systems. He refers to analog workflow as a difficult and tiring process and mentions that digital has brought great opportunities to editing in terms of making changes and versions without any generation loss. But, he also emphasizes that the digital technology resulted in disadvantageous working conditions as well. As an example, he explains that the opportunity to shoot a huge amount of footage on set without a serious cost, causes directors to shoot so many takes from different angles even without considering their necessity. This tendency results in an extreme workload for editing assistants and editors as they deal with a great amount of footage in post and must work very long hours to sort out the excessive footage. Besides, he states that the digital post workflow has created editors from operators who can use editing programs but do not have a sense for when to cut. He claims that editing is the stage the spirit of a film is created and the important thing about editing is not only being able to use an editing system but bringing that spirit to film (in-depth interview 9, 07.05.2018). Interviewee 8, a post production supervisor with 10 years' job experience brings another aspect of the same issue into consideration by mentioning that digital cinema has taken away directors' need for preparation of a scene. Before the digital era, directors used to prepare for every single scene by planning the angles to use, shots to cut together, and making rehearsals before shooting. With the digital era, rather than thinking on these significant aspects in detail beforehand, many directors shoot as many takes as possible which brings the editing team a pile of shots to be transferred, watched and edited. It causes an enormous workload in post production as a result (in-depth interview 8, 07.05.2018).

Interviewee 4 draws attention to the underestimation of the post work in the digital era by telling that some directors do not want to come to the post production studio to see the

color grading of the material on a calibrated monitor, but rather prefer to see the grade on their computers and phones. He claims that while digital cinema provides this as an opportunity and frees the directors and cinematographers, it also leads to a different kind of workload for below the line post laborers:

Especially for commercials or teasers and trailers of feature films, if the cinematographer or the director came to the grading suite to see the job we have done, it would be much quicker and convenient to discuss the changes asked for, the changes could be discussed and made together and decided upon easily. Now, we send away exports, wait for approvals, get revisions and resend materials repeatedly. Yes, digital is faster and more flexible while working; but it is not easier for below the line laborers most of the time, because there is usually too much workload in comparison to DI. (in-depth interview 4, 02.05.2018)

Interviewee 10 states that as the supervisor of a VFX team, he would prefer to use his team's talent more for creative input rather than the extra workload on fixing what could already have been fixed in the production stage. However, the decisions on the distribution of the workload between the production and the post depends entirely on the perception that post labor is less valuable than production labor.

3.3. INCREASING DEMANDS

Adam Ganz and Lina Khatib (2006) state that before digital cinema, the technology was not sufficient to meet the specific demands of post production (p. 24). The advances in digital cinema has given way to handling the post process effectively and easily with technical opportunities ensured. This occurred as a great innovation for filmmakers, because in the digital era it became possible to try out the limits of the post technology. By offering many choices to directors, the digital cinema workflow brought a liberation for directors in deciding which way to go in the post. Digital cinema changed the concept of limit for post production which Ganz and Khatib refer to: "There is a physical limit on the number of cuts that can be made on a piece of a celluloid, and on the amount of manipulation that an image can take" (2006, p. 25).

While digital workflow abolished these physical limits, pushing the limits of demands in the post process became a common tendency in Turkey. The practicality of the workflow, that enables to make changes on film easily, has led to a series of problems for covering the demands of above the line professionals for post production laborers. The absence of the

chemical processes in DI has changed above the line professionals' perception of the post process, thinking that changes can be made whenever needed even if the release date is too close. Interviewee 2 tells that the approaches of producers have changed a lot with digital cinema, as they used to pay more attention to the advice of post laborers before. Interviewee 1 states that one of the most challenging aspects digital cinema changed in Turkey's post labor is the importance attributed to "picture lock": "One crucial point in post is the picture lock as the whole post process depends on following the offline picture as a guide. Even a minor change in the editing sometimes means to do the same job again. There is a reason it is called lock." Interviewee 2 takes this discussion one step further by saying that in one of the films he worked for, the producer cut off a serious CGI scene towards the end of the post process which cost them a big waste of time and effort as the VFX team had been working heavily on the scene for a long time. He says that when he worked in DI process, he used to know each frame of a film by heart; but in the digital era he cannot, because the editing changes so often after the "so-called picture lock" and the producer is often in the post studio making a new edit which drives him to a stressful working life inevitably. The sound editing supervisor, interviewee 7 states that the changes made after the picture lock has been a result of the practical digital workflow that leads to the image of a film not being finalized until the last day in post. This usually becomes his major concern, because most of the time he works in final mix with offline image whereas he must work with the finalized picture of the film. He says that he sometimes cannot see the film as a whole, until the last screening; there is always an image inserted even in the last hours of the last night. Interviewee 3 emphasizes that with digital cinema, the expectation and the demand of above the line professionals changed dramatically: "Producers and directors experienced that changes can be asked until the last moment and digital cinema still allows you to catch the deadline; but the executives are not interested in what it takes for the laborers to meet that deadline."

Interviewee 4 draws attention to the risks of making last minute changes in the post process pointing to his experiences. He states that the time that should be spent for margin of errors is often spent for trying hard to manage the schedules. Changes carried out in the last few

days make it hectic for post workers and there is no time left for error margin as a result. He says that finalizing a feature film in the last minute makes post workers to work for very long hours and risks the quality of the job more than anything; the error becomes invisible to the workers because of exhaustion. He also claims that if the approach towards the working practice in the post workflow was even close to the one in DI, it would be more likely to eliminate various mistakes. Interviewee 5, who works as an inhouse post production coordinator mentions that digital cinema revealed a disposable post practice in coherence with the fast production-consumption demands of executives in the new workflow (in-depth interview 5, 03.05.2018).

Interviewee 10 emphasizes that the biggest problem with the increasing demand of the post process in digital cinema is the expectation of above the line professionals for keeping the costs at minimum while asking for more complex tasks to be handled with faster consequences in shorter times which sums up this whole chapter.

Although this study focuses on labor processes of post teams in Turkey, Caldwell's (2009) interview with Paul Malcolm, a member of Visual Effects Society (VES) in Los Angeles, points to a similarity with the issues mentioned in this chapter: "Studio producers don't want to know how the trick was done because ignorance allows them to keep demanding bigger and better rabbits to be pulled out of the digital hat, on less and less time and money. In many ways, VFX practitioners find themselves in a position of having to undo an image of their creation" (p. 219).

Thus, it can be stated that the demands have changed, and doing the same jobs repeatedly in the post of a feature film has become a usual task.

4. PRECARIOUS LABOR IN DIGITAL POST PRODUCTION

Today's global and mobile film production practices pretty much depend on the competition among companies. This rivalry leads to a decrease in payments, benefits and the well-being of employees worldwide. Hence, the employees are tested with economic, physical and psychological difficulties by experiencing longer working days with more pressure (Curtin and Sanson, 2016, p. 2).

The altered experience of filmmaking in digital cinema provided some opportunities which can easily be misused (Daly, 2010), and thus, may have opened the way for the violation of basic economic and social rights of the employees grounding on precarity. According to John Evans and Euan Gibb (2009), new global economy has inclined the raise of precarious employment as one of the most dangerous results of it (p. 1). Evans and Gibb (2009) define precarity as an insecure and unpredictable labor form with restricted or even no social rights with low incomes and job insecurity for the employees (p. 2). The in-depth interviews of this study refer to benefits of digital cinema system being exploited by the executives in post processes. This results in precarious employment practices in Turkey, as employees in the area often cope with problems regarding payments, social insurances and job security. The in-depth interviews of this study indicate that whereas issues of receiving payments and having social insurances appear mostly as problems of freelance laborers; the problem of job insecurity reveals as a general concern both for freelancers and inhouse employees in the post labor processes in Turkey. Even though precarious employment has been praised by employers in terms of presenting a more flexible work life to laborers, the effects of precarity on work life mostly refer to negative experiences for them (Bohle et al., 2004, p. 20).

Michael Curtin and Kevin Sanson (2016) note that VFX workers severely experience low wages, long working days and job insecurity referring to the film industry in Hollywood⁵ (p. 2). Focusing on Turkey's film industry, this situation can be considered common also

⁵ The statement of Curtin and Sanson demonstrate a similarity with the labor issues mentioned in this study for Turkey, however Hollywood is beyond the scope of this thesis. Further information on Hollywood's labor processes can be obtained from *Global Hollywood 2* (Miller, et al., 2005).

for other teams of post production. In coherence with Curtin and Sanson's (2016) statement on precarious working conditions' being "a pattern which repeats itself" in several places in the world (p. 4), it is possible to say that precarity, rising in the production friendly digital era, is one of the most remarkable problems of labor processes in the film industry in Turkey.

4.1. PROBLEMS OF THE PRECARIAT

Martin Olsthoorn (2014) states that two main items that refer to precarious employment model are the insecurity depending on the income and the insecurity resulting from the concerns about being dismissed which are in relation with each other.

Arne L. Kalleberg (2009) draws attention to the fact that precarious employment and its connection with insecurity, may differentiate in various countries in relation with the labor market conditions and employment policies (p.15). Hülya Tanrıöver and Tufan Tanrıöver describe the working conditions in Turkey's film industry as mostly "wild": "[...] The laborers have no social or job security. Since it is problematic to have raises within their current team, most of the ones who have a chance to change their job do that; because it is the only remedy of having a raise within the inflationary world (Tanrıöver and Tanrıöver, 2000, p. 191). Although these statements refer to the findings of an earlier time span, the same issues in working conditions still hold today. Evrim Özkan Töre (2010), refers to the employees of the industry as "the labor force coming from the tradition of working for long hours under challenging circumstances who can organize very fast and efficiently" (p. 120). As Töre (2010) mentions, it can be claimed that working heavily and stressfully is the convention of labor process in Turkey's film industry.

Focusing on the post labor process particularly, it is necessary to emphasize the organization of the post labor. Consisting of many teams under the title of post production, a post team may consist of inhouse and freelance workers at the same time. A team working in a post company does not necessarily work on inhouse terms; post production companies employ many laborers on a freelance basis for short terms in requirement of a specific film project as well. As the post process works within a system of connections and

constant communication between the client (production executives) and the post professionals whether it be a studio or a group of freelancers, rivalry becomes a common aspect of the process (Töre, 2010, p. 110). The effects of transition to digital cinema system on the labor processes can be argued in relation with the outstanding feature of rivalry. In the digital era, the capital required to cover the post process has decreased seriously and it became possible to handle the certain steps of editing, color grading, sound design and VFX on cost-effective workstations on the contrary to the complex, high cost facilities of analog and DI processes. This budget friendly opportunity of digital cinema led to lower costs in the post processes as the budget rates of post studios have approached one another (Töre, 2010, p. 30). In return, post studios began to undercut their budgets to avoid customer loss and to secure their positions in the competition. As even the most complicated stages of the post process can be done in home-office studios in the digital era, competition increased among post studios on different scales (in-depth interview 4). Interviewee 4 says that even though he is a fulltime employee, he is concerned about losing his job as the competition among companies lead to decreases in laborer wages which drive the employers to look for low-cost workforce. He emphasizes that the company he works for used to refuse customers asking them to work on Sundays before. However, today with the rise of many alternative post production facilities offering low budgets to gain customers, the company often complies with the demands of the clients even if it violates the rights of their employees: “The customers usually threaten the studios by taking the job to another studio which can work 7/24 for them and the employer cannot take that risk most of the time.”

As explained by Curtin and Sanson (2016), the power relations of the new global economy in the film industry reveal the concern of companies’ increasing their profits in the name of productivity and this aim leads to the tendency of decreasing wages of the employees (p. 6). According to interviewee 2, while post schedules are shortened in the digital cinema system, freelancers who work on a weekly basis began to earn less wages which makes it difficult for them to earn their living. He notes that a post production manager who used to be paid for a few months started to be hired only for a couple of weeks which caused an

obvious decrease of income. Interviewee 1 also mentions that her income changed in relation with transition to entirely digital cinema system:

A film's post schedule lasted at least 10 weeks before and I was paid wage on a weekly basis and it was ok. But as digital cinema became the norm; post production schedules began to last 4 weeks at the longest and being paid on weekly basis became a serious loss of time and money for me. I was working longer than ever to manage the job on time but paid less as the work was handled in a very short time. It was like being punished for working too much. (in-depth interview 1, 30.04.2018)

As Kalleberg (2009) summarizes, precarious work results in economic inequality, insecurity and instability for workers (p. 8). Interviewee 5 claims that in Turkey, working as a freelance post production supervisor is not sustainable, because the money earned is almost never worth the effort put in. Interviewee 6 states that the executives try to release their films as soon as possible to recover their expenses and move into profit. This leads to shortening of schedules, negatively affecting the wages earned for freelance laborers. Employers move the social risks of precarity away from themselves to individual workers (Evans and Gibb, 2009, p. 2), through short term employments that result in lower wages, short period insurances and changing jobs repeatedly. Interviewee 1 mentions that as employees must be registered with social insurance as long as they work, as a freelance worker she has always paid for her own insurance:

I have to carry an insurance to work in a film, but the companies do not prefer to pay for it, so I pay it myself. When you pay it yourself, you cannot afford the insurance according to the amount you actually earn, but rather pretend to earn minimum wage so that the taxes are lower for you to pay. (in-depth interview 1, 30.04.2018)

Interviewee 3 tells about his experience in the analog post process and says that post studios and post laborers both used to have high incomes because neither the facilities nor the labor were cheap in analog systems. Interviewee 9 also mentions that when working in the laboratory, he and his colleagues were paid overtime for working at nights which is not an option in the industry any more, as working overtime has become casual in post processes today.

Unpredictability of working hours, short time contracts with minimum economic and social benefits and job insecurity have been on the rise with transition to digital cinema which lead to a dissatisfaction and despair in the labor processes of employees in post production,

depending on the research of this study. All the interviewees mentioned that they do not think they have job security in the industry, which can be seen in relation with the general precarity tendency of the era. As Mayer (2016) emphasizes, producers have been facing difficulties to find willing laborers to work under severe conditions, as the laborers have already realized that precarious employment relying on their exploitation does not often lead to a stable future employment (p. 64). Although Mayer's statement is encouraging, there is a long and challenging path for raising such an awareness for the post laborers in Turkey, acknowledging the importance of trade unions having the highest priority.

4.2. LABOR ORGANIZATIONS AND THEIR ABSENCE

Attempts for organization in Turkey's film industry began in 1954 with Film Technicians and Workers Union (Film Teknisyen ve İşçiler Sendikası) that was closed before engaging in any activities, and was followed by the foundation of Sine-İş/Turkey's Film Workers Union (Türkiye Sinema İşçileri Sendikası) in 1962. Sine-İş included the participation of mostly post studios in the organization but was closed in 1967, due to inefficient support from the employees. Sine-Sen/Turkey's Cinema Laborers Union (Türkiye Sinema Emekçileri Sendikası) was founded in 1978, however, the activities of the union were prohibited with the military coup in 1980 like many other unions in Turkey (Başaran and Kurtulmuş, 2016, p.208-209). Şükran Kuyucak Esen (2010) mentions that, with the decrease of unionization in Turkey after the military coup, Sine-Sen could not become an active union even though the union still exists today (p. 162). In 2015, Film and TV Union (Sinema Televizyon Sendikası) was founded, representing laborers from all areas of the industry, and the union has been working actively with 1000 members to enhance the labor conditions (in-depth interview 11, 14.05.2018).

As mentioned in the previous section, digital cinema raising the competition for both post studios and laborers through lowering the budgets has increased the sense of job and income insecurity for employees. Evans and Gibb (2009) point out that the rise of precarity has serious effects on the workers not only individually, but also collectively in terms of opposing negative working conditions and defending their rights against exploitation (p. 5). The decline of unionization is one of the indicators of precarity (Western and Rosenfeld,

2011), and the interviewees of this study all refer to the requirement of unionization as the possible solution of problems about precarious employment in the industry. Interviewee 3 claims that the only solution of preventing exploitation in post processes in Turkey is organized labor. He states that just like there are some rules determined with the effort of the union in sets, post laborers should also unite under a trade union so that the problems can be discussed, and rights can be claimed. He also says that there is no way an inexperienced worker can ask for his/her rights from the employer individually, as employers are experts at convincing workers on the terms they want to agree. He claims that it is obligatory to be a member of the trade union, so that the disadvantageous working conditions can be changed for the benefit of the employee. Interviewee 4 notes that unless the laborers become active members of trade unions, the decisions about working conditions are left at the mercy of the employers. Interviewee 6 states that he believes in the necessity of the trade union to bring a standard to post processes including terms of job and the rights of the laborers. He tells that it is difficult to stick to the principles in the competitive post industry, as many laborers lower the standards of labor by accepting challenging terms such as very low wages, working in short schedules with long hours and working in inadequate studios:

I have worked in a feature film where the whole post process lasted 17 days. Usually, I struggle to insist on my principles to make my job better, but some producers are not interested in the quality of the job that much and they ask me to lower my wages by saying they can do the job with someone else at a lower price. I want to tell them to go and do the job with those people, but I also need to earn a living for me and my family. I am sure of that, the moment I refuse the job, the producers will find someone instead of me and that someone will begin working immediately without caring about the reasons I refused the job. (in-depth interview 6, 04.05.2018)

Interviewee 1 claims that refusing a job is considered to be one of the worst choices a freelancer can make in the industry. According to her, workers worry about long term unemployment and accept to work on jobs with severe conditions, hoping to compensate their inadequate terms in possible future works. Caldwell (2013) defines this situation as “dues paying” referring to a career plan which requires to put up with the pain today to score later (p. 102). Even though Caldwell (2013) mostly refers to laborers who are at the beginning of their careers with this statement, this situation is also true for the experienced employees in Turkey. Moreover, Rosalind Gill (2013) states that the motto of “never refuse

a job” is a quite common approach among workers of creative industries which gives way to excessively long working patterns and even hardly giving breaks for sleep (p. 195).

Interviewee 9, who is also a member of Sine-Sen, draws attention to the importance of organization to prevent insecure working conditions. He claims that unionizing would provide workers to strengthen against exploitative working conditions and to convince the workers to the necessity of unionization, first an awareness about the requirement of unions should be raised among the post laborers. He mentions that the laborers should come together and understand that underbidding prices to take jobs from each other brings harm more than benefit and they should comprehend that they need unions to be well represented in the industry. Even though all interviewees emphasize the significance of organization, none of them except for the representatives of Sine-Sen (interviewee 9) and Film and Tv Union (interviewee 11) are union members; justifying the statement of interviewee 11 who declares that the union has 1000 members and only 36 of them are post laborers. He reports that the participation of post teams to the union is at the minimum level and the laborers should be informed about the activities of the union widely so that the laborers would like to participate and be part of the solution. He emphasizes that to prepare the legal working hours terms and job descriptions, the union needs laborers to attend the meetings actively, share their ideas, and spend time within the union. He remarks that Film and TV Union has received results on sets for determining legal limit on working hours which is 12 hours a day and can be 16 hours at maximum with overtime payments and for only one day of the week. He states that the union has also been working on a similar arrangement for post production workers as well. He also points out that the laborers should change their approach towards the union from “What will the union do for me?” to “What can we do?”. He notes that the employees should be convinced about the fact that unions cannot be sufficient without the support of the laborers: “Even if we succeed to implement a legal arrangement on working hours, there are still a series of duties the laborers should fulfil such as resisting on their rights and following the corporations’ attitudes in this respect.” As Miranda J. Banks and David Hesmondhalgh (2016) argue: “What is needed is strong union

representation ensuring good working conditions and rights across all types of media work, nationally and internationally” (p. 270).

One of the problems encouraging precarious employment in the industry can be seen as internalization of the labor conditions by employees. Anthony Fung (2016) explains that the cultural worker adopts the precarious working order including rules and parts determined by corporations for them as they become involved with the industry; capitalist production and consumption patterns configure the cultural workers (p. 207). According to interviewee 4, workers who are relatively new in the industry are easily persuaded to hang on to their jobs by employers emphasizing that they cannot survive in the industry without suffering for a period of time under challenging conditions. He tells that the workers who are “strong enough to bear” the insecure working life often internalize such conditions and accept it as the norm of the industry from the beginning. As in coherence with the statement of interviewee 4, interviewee 10 notes that as workers grow older with considerable experiences on the job, they become inefficient for corporations because the financial value of their input on the job is much bigger than employers’ expectations. Therefore, the experienced worker is usually asked for finding fast solutions to urgent situations of the digital era, rather than using his/her experience for creative input in Turkey. As Andrew Beck (2003) claims, exploitation relations can be hidden so effectively that cultural work may not seem like work at all which raises an approach for “labor of love” (p. 3).

Kalleberg (2009) refers to another important aspect of precarious employment: “Opportunities to obtain and maintain one’s job skills to keep up with changing job requirements are also precarious. Many workers are hard pressed to identify ways of remaining employable in a fast-changing economic environment in which skills become rapidly obsolete.” (p. 10) As transition from analog systems (including DI process) to entirely digital cinema system has brought the end of laboratories, an important profession in the post process has also faded away. The laboratory workers of the industry have either tried to adapt to a new job after many years of experience in the laboratory or retired obligatorily. Interviewee 3 states that just like the editors in the analog process had to upgrade their skills, as many of them knew editing but did not know how to use the new

editing systems on computers, many laboratory workers also became unemployed all of a sudden with the laboratories shutting down.

As a result, it can be said that the research points to an absence of organization for post laborers which has been a major setback against preventing precarious employment tendency of employers in the industry's digital era. Therefore, post laborers try to cope with problems of low wages, long working hours, job insecurity and excessive stress individually, without being represented by a union. As trade unions play a vital role in enhancing lives of laborers by uniting and representing them legally (Cornfield & Fletcher, as cited in Kalleberg, 2009, p. 14), it may be claimed that the hope for opposing exploitative conditions in post processes can be provided by raising awareness about the benefits of organization among workers in the industry.

5. CONCLUSION

Digital cinema has altered the creation of image and sound, and the ways these two are merged, delivered and presented to the audience, not only as a technological innovation, but also as an evolution in the perception of filmmaking and watching (Ganz and Khatib, 2006, p. 21). It is a common stance that digital cinema has ensured various benefits to filmmakers, distributors and even the audience by enabling a series of positive changes. After transition to entirely digital cinema system, many difficulties that were faced in traditional practices of cinema could be overcome. Digital cinema has ensured to preserve a film with the same quality of image and sound without noticing how many times the film has been screened or how much manipulation has been done in the film, decreased the costs of filmmaking including production and post production, eased the distribution operation which also provided a serious saving with the disappearance of shipping costs for prints and enabled the rise of independent filmmaking via lowering costs in every stage of a film from pre-production to exhibition (Swartz, 2005). While the mentioned aspects of digital cinema refer to a revolution for film industries all over the world, specifically focusing on Turkey and post professionals as framed in this thesis, the changes occurred in the labor processes do not only indicate positive developments. As Dina Berkeley (2003) emphasizes, the structure of production chain has been transformed with technological improvements and the digital technologies embarked in post production processes have led to a decrease in the number of people needed both in production and post production (p. 113). Janet Willis and Shirley Dex (2003) also draw attention to how technological changes affect the culture of the work environment, sometimes leading to rivalry among workers with more stressful and intensified working practices (p. 138). So, it is possible to argue that the effects of a huge technological transformation like digital cinema may bring a series of problems along with opportunities if we look at digital cinema from the point of view of labor processes.

This thesis has investigated the influences of transition to digital cinema on post production workers' in Turkey's film industry, relying on theoretical approaches and in-depth interviews. It is convenient to mention that from all in-depth interviews of this study, it

becomes obvious that the time efficient, flexible and practical structure of entirely digital post workflow has often been exploited and various problems have emerged in the working processes. The participants of the interviews have mentioned issues about extension of working days to manage short post schedules, the rise of noncreative workload handed from production teams, the increasing demands of executives for changes until the last moment of post schedules. As Caldwell (2013) states, the speeding work practices put laborers under intensive pressures as well (p. 96).

In addition to these problems, all the interviewees point out to concerns about the growing precarious employment tendency in the industry, referring to a constant sense of job insecurity for laborers. As Gill (2013) remarks, for many laborers of creative industries, precarity has become the unofficial rule and workers experience insecurity most of the time which intensively affects their own lives with the concerns of how to survive after the end of a project and the need to keep their eyes open for the possibility of a future work (p. 194). Gill (2013) also draws attention to the distressing feature of precarity even in social life of a worker: “Precariousness, long hours, bulimic patterns of working, and the constant need to “keep up”—stay literate and re-skill in fields that are rapidly changing both through fashion and technological innovation—can be experienced as very difficult to fit with other aspects of life, such as friendships, intimate relationships, or caring” (p. 196).

As mentioned with reference to Beck (2003) in the previous chapter, the film industry has a distinctive feature for enabling employers to trick workers with the implications of “being a part of a special job” while exploiting them. Similarly, interviewee 7 states that the film industry in Turkey has been working with “superhuman efforts of the laborers” who love their jobs and endure the continuously challenging physical, economic, social and psychological conditions of the job.

All participants of in-depth interviews refer to the importance of unionization to struggle with these common problems of post laborers in the industry. The low participation rate of post laborers in the union has been one of the major setbacks in offering a collective solution to labor problems for post production processes in Turkey. It should be acknowledged that the perception of the digital cinema systems’ convenience to be

exploited easily in favor of the executives and employers and against the workers may be broken with unionization. If the necessity of unionization becomes a widely adopted approach by post laborers, it may be possible to discuss solutions in addition to the problems of the labor processes.

Going back to Caldwell's (2009) interview with Paul Malcolm on the labor process in Hollywood, it may be considered that digital cinema may have affected labor processes of post production workers in similar ways in various countries' film industries. In order to reach a wider collection of data about the working conditions of post production teams in the digital era, further research should be done including the issues covered in this thesis on the labor processes of several countries. As the focus of this study is the film industry in Turkey, these research areas are not included in this thesis. In addition, the study on labor problems can be extended through the inquiry of the term "reproductive insecurity" referring to a form of precarity consisting of concerns about forming family (Chan and Tweedie, 2015, p. 7). Also, the effects of digital cinema could be investigated with respect to the relation of the mentioned transition on ownership of production, distribution and exhibition companies. However, as this study is a master's thesis, its scope is limited to more closely related effects of transition to digital cinema. Therefore, this issue was not covered within this study.

This study investigated how digital cinema -as a technological revolution- has been turned against laborers through misusing the benefits of it, scrutinizing the post production workers in Turkey's film industry and try to understand the dominant working practices in post production area probing the power relations between employers and employees. The thesis purposes to fill a gap in the literature of Turkey's film studies and to give inspiration and encouragement for further studies on different labor processes of Turkey's film and television industry.

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APPENDIX A

1. What is your profession, how long have you been working on this job?
2. Did you choose your job intentionally or coincidentally?
3. Do you work as a freelancer or as a fulltime employee?
4. Do you receive your payment on weekly/monthly basis or project based? How is your health insurance provided?
5. How many hours do you work a day? Do you have an off day in the week?
6. Are you paid your wages regularly? Do the working hours affect the wage you receive? Do you ever receive overtime payments?
7. Do you have any concerns about the sustainability of your job?
8. Do you think you have job security?
9. What is the best and worst sides of doing this job?
10. Have you ever worked in analog post production workflow (including digital intermediate)? If you have, what do you think the difficulties were in the analog process? Can you think of any advantages of analog post workflow in comparison to digital post workflow?
11. Have you ever had any difficulties in adapting to digital cinema system?
12. What do you think about the effects of transition to digital cinema system on post production processes? How has this transformation affected the labor processes? What are the advantages and disadvantages of the digital post workflow in terms of working conditions for you?
13. Do you see a direct relation between transition to digital cinema system and working hours of post processes?
14. What do you think about the effects of transition to digital cinema system on the quality of the jobs?
15. (If any disadvantages of the transition on labor processes are mentioned by the participant) Do you think the disadvantages you refer to can be eliminated and how?

APPENDIX B

1. How many members does Film and TV Union have? What is the rate of the members to the whole number of workers of the industry? How many post production laborers are members to the union?
2. Can we say that the participant of post production laborers to union is lower in comparison to production? Why do you think it is lower?
3. What kind of studies have been made for post production area in the union?
4. Film and TV Union has made job definitions for directors, cinematographers, directors' assistants, production designers and costume designers so far. What is the reason of other jobs definitions' not being made yet?
5. Is there a demand for post production job definitions by the laborers?
6. It is known that there has been a legal limit on the working hours of set laborers today with the efforts the union has put. Is there a similar arrangement being prepared for post laborers?
7. Providing a health insurance to workers has been an obligation in the working principals list for television serials, why is this principle eliminated for commercials and feature films?
8. How can the number of post members of the union be raised?
9. What do you think the main obstacle for post laborers to unionize is?
10. What is the main setback for the union to alter the working conditions of the laborers?