



*to Kramer*

FAILED FAMILY PHOTOGRAPHS: ERRORS LEFT OUT FROM THE  
ALGORITHMIC DEFINITION OF PERFECT PHOTOGRAPHS

The Graduate School of Economics and Social Sciences  
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Naile KAŞ

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July 2018

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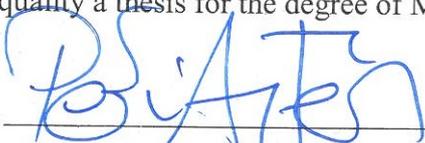
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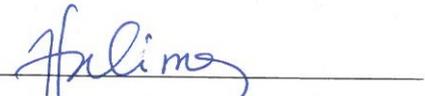
Assist. Prof. Marek Brzozowski  
Examining Committee Member

I certify that I have read this thesis and in my opinion it is fully adequate, in scope and in quality a thesis for the degree of Master of Fine Arts in Media and Design.



Assoc. Prof. Dr. Pelin Aytemiz  
Examining Committee Member

Approval of the Graduate School of Economics and Social Sciences



Prof. Dr. Halime Demirkan  
Director

## **ABSTRACT**

### **FAILED FAMILY PHOTOGRAPHS: ERRORS LEFT OUT FROM THE ALGORITHMIC DEFINITION OF PERFECT PHOTOGRAPHS**

Kaş, Naile

M.F.A., in Media and Design

Supervisor: Asst. Prof. Andreas Treske

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The subject matter of this study is defining and classifying “errors” left out from the algorithmic definition of “perfect photograph” in visual technologies and making understandable their relation with the developments in tools. New features that promote “perfect photographs” are added to cameras and applications and then they start to shape the perceptions. At this point, how the “perfect photograph” is defined is very important because it is very subjective topic varying from person to person and over time. The categorization is made according to algorithms used in digital cameras, cellphone cameras and applications. They are technical errors, timing errors and non-smile errors. The applications, the modes of cameras are exemplified and the predetermined standards of them are explained in this study.

The introduction of advances in the field of image technology starts to change the standards in family photography. As a part of vernacular photographs, the family album takes its share from the effects of algorithms in cameras and applications. With the strong relation to memory, the elimination of errors in family albums has important meaning and results. As a practical side of the thesis, “Failed” is an interactive installation composed of family photographs. For the celebration of imperfections in family albums, an interactive and participative approach is preferred. All these “imperfections” in family albums that we could keep give me an inspiration to pursue the errors definition by algorithms.

Keywords: Algorithm, Error, Family Album, Perfect Photograph, Vernacular Photography.

## ÖZET

### KUSURLU AİLE FOTOĞRAFLARI: ALGORİTMANIN TANIMLADIĞI MÜKEMMEL FOTOĞRAFIN DIŞARDA BIRAKTIĞI HATALAR

Kaş, Naile

Yüksek Lisans, İletişim ve Tasarım Bölümü

Tez Danışmanı: Dr. Öğr. Üyesi Andreas Treske

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Bu çalışmanın amacı, gün geçtikçe dijital kameralara, telefon kameralarına ve uygulamalara yerleşen algoritmaların tanımladığı standartları inceleyerek, bu standartların dışarda bıraktığı hata tanımını ve kategorizasyonunu yapmaktır. “Mükemmel fotoğraf” vaadiyle öne çıkan bu algoritmalar yaygınlaşarak algıyı şekillendirmeye başlamaktadır. Bu noktada “mükemmel fotoğraf” tanımının nasıl yapıldığı oldukça önemlidir çünkü bu kişiden kişiye ve zamanla değişebilen bir yargıdır. Bu tezde hata kategorizasyonu dijital kameralarda, telefon kameralarında ve uygulamalarda kullanılan algoritmalara göre yapılmıştır. Bunlar teknik kusurlar (technical errors) ve zamanlama kusurları (timing errors) ve gülme dışı kusurlardır (non-

smile errors). Bu sınıflandırma sürecinde bahsi geçen uygulamalar ve kamera modları örneklendirilerek, algoritmalarca tanımlanan standartlar incelenmiştir.

Görüntüye dair teknolojik gelişmeler aile fotoğraflarını da değiştirmeye dönüştürmeye başlamıştır. Vernakular fotoğrafa dahil olan aile albümleri kameralardaki bu değişimden payını almaktadır. Hataların tanımlanarak, kodlanarak, dışarda bırakılması hafızayla güçlü etkileşimleri olan aile albümleri için önemli etkileri ve sonuçları bulunmaktadır. Bu tezin bir parçası olan, aile fotoğraflarından oluşan “Failed” isimli enstalasyonda, aile albümündeki mükemmel olmayan fotoğraflar sergilenmiştir. Katılımcılardan toplanan analog döneme ait aile fotoğrafları ile interaktif bir sergi tasarlanmıştır. Aile albümlerindeki tüm bu hatalar, algoritmalar tarafından dışarda bırakılan hata tanımını takip etmem için bana ilham vermiştir.

Anahtar Kelimeler: Aile Albümü, Algoritma, Hata, Mükemmel Fotoğraf, Vernakular Fotoğraf.

## **ACKNOWLEDGEMENTS**

As well as being an academic study, the entire process was a unique experience that I have learned and shared a lot from the beginning. This thesis and project have made me realize once again that the moments I have remembered are always valuable in my life with all the “imperfections” and memory will always keep some mystery in itself.

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## TABLE OF CONTENTS

ABSTRACT .....	III
ÖZET .....	V
ACKNOWLEDGEMENTS .....	VII
TABLE OF CONTENTS .....	IX
LIST OF FIGURES .....	XII
CHAPTER 1. INTRODUCTION.....	1
1.1. The Scope of the Study.....	1
1.2. The Overview of Chapters.....	8
CHAPTER 2. ON FAMILY ALBUMS.....	10
2.1. Family Albums as a Subcategory of the Vernacular Photography .....	10
2.2. Remembering or Recreation of the Past.....	15
2.3. Archive and Dematerialization of Family Albums .....	18
CHAPTER 3. ERRORS AND “PERFECT PHOTOGRAPHS” by ALGORITHMS .....	22
3.1. Elimination of Error, First of All, What is Error?.....	22

3.2. Algorithmic Developments in the Cameras .....	27
3.2.1. Face Detection and Emotion Recognition .....	30
3.2.2. Digital Archives: Where Do All These Suggestions Come from?.....	33
3.2.3. Editing Applications That Claim to Serve “Perfect Photograph” .....	36
3.3. What is “Perfect Photograph”? .....	39
3.3.1. “Smile!” Promotion .....	39
3.3.2. Creating a Perfect Image That Never Exists .....	44
3.3.3. Categorization of Errors.....	47
CHAPTER 4. THE PROJECT: FAILED.....	51
4.1. Artist Statement.....	51
4.2. Related Artworks .....	54
4.2.1. <i>Odd One Out</i> by Caleb Cole .....	54
4.2.2. <i>Album Beauty</i> by Erik Kessels .....	56
4.2. Development Process of “FAILED” .....	59
4.2.1. Collection of the Exhibition Materials .....	59
4.2.2. “Failed Family Photographs” .....	63
4.2.3. Exhibition Design.....	70
CHAPTER 5. CONCLUSION .....	75
REFERENCES .....	79
APPENDICES .....	83

Appendix A .....	83
Appendix B.....	84

## LIST OF FIGURES

Figure 1. Kodak advertisements based on children .....	12
Figure 2. Google Ngram Viewer result about “vernacular photography” .....	13
Figure 3. A scene from the film <i>Album</i> (Mehmet Can Mertoğlu - 2016).....	18
Figure 4. <i>24 Hrs in Photo</i> by Erik Kessels in FOAM Gallery .....	20
Figure 5. <i>24 Hrs in Photo</i> by Erik Kessels.....	21
Figure 6. Example of keeping also errors in albums (courtesy of Sedef Beşkardeşler) ..	24
Figure 7. An example of how the algorithm is working for storage <i>AVG Cleaner</i> .....	28
Figure 8. An example of face evaluation for goodness point.....	32
Figure 9. A suggestion of <i>AVG Cleaner</i> for which one of them is the best one .....	35
Figure 10. Manual of <i>GroupShot</i> application.....	37
Figure 11. Comments by users of <i>GroupShot</i> application .....	38
Figure 12. Kodak advertisement related to smile promotion .....	41
Figure 13. Average images of high school students for each decade of the 20 <sup>th</sup> century	42
Figure 14. An evolution of smile in American high school yearbooks .....	43
Figure 15. The grouping of expressions as inferior and superior .....	45
Figure 16. A composition for the highest point results according to the algorithm .....	46
Figure 17. Automatic mode is explained .....	47

Figure 18. “Perfect moment” selection from a manual of a camera.....	48
Figure 19. Smile detection and capturing the frame by a <i>smile shutter</i> .....	50
Figure 20. Analysis of an analogue family photograph according to an algorithm .....	54
Figure 21. <i>Odd One Out</i> by Caleb Cole.....	55
Figure 22. <i>Odd One Out</i> by Caleb Cole.....	55
Figure 23. Exhibition shot of <i>Album Beauty</i> in FOAM Amsterdam .....	57
Figure 24. Exhibition shot of <i>Album Beauty</i> in FOAM Amsterdam II.....	58
Figure 25. A failed family photograph (courtesy of Melek Cerit) .....	61
Figure 26. A failed family photograph (courtesy of Buket Bilgin) .....	62
Figure 27. A photograph from exhibition that includes technical errors; high blurriness (courtesy of Melek Cerit) .....	64
Figure 28. An example of timing errors (courtesy of Güz Eylem Çakın) .....	65
Figure 29. An example of timing errors from my own family album .....	66
Figure 30. Examples of non-smile errors from the analogue family albums .....	67
Figure 31. Saving erroneous one and the perfect version of it (courtesy of Sedef Beşkardeşler) .....	69
Figure 32. Exhibition area.....	71
Figure 33. Visitors in the exhibition area.....	71
Figure 34. A detail from “FAILED” .....	72
Figure 35. Visitor’s interaction in the exhibition .....	73
Figure 36. Visitors in the exhibition .....	74

# CHAPTER 1

## INTRODUCTION

### 1.1. The Scope of the Study

Narrating our own personal (hi)story by looking at family photographs is a time-honored tradition with which we are also familiar with today. Family albums are a common interest for all, including those who may not be particularly interested in photography. It belongs to the vernacular photography, which is described as non-art photography. It is hard to find a home without one. Nowadays, the form of albums has started to change. Facebook albums, hard disks or cloud storage links have been replacing the tangible family albums. Despite this, the idea and content of family albums remain unchanged. This is due to fact that the key family moments worth capturing has stayed the same. Happy moments of family life have always been the content of the albums. Annette Kuhn highlights this role of family albums and this idealization, “The family album constructs the world of the family as a utopia” (Kuhn, 1995:48).

Family photography is an old and over-discussed topic, however looking at the developments and standards of algorithms in cameras, while looking at the overall changes in family albums can add a new perspective to the literature of photography. In this thesis, I focus on the algorithms used in digital cameras, cellphone cameras and applications.

The algorithms that are mentioned in this study refers to the algorithms in digital cameras, cellphone cameras, and applications. The algorithm consists of a set of rules. As an example, for the algorithm in the automatic modes of cameras, there are so many criteria to meet; focus, exposure, histogram, and color balancing and so on. To capture a photograph, each of the criteria should provide the conditions. Actually, they are pre-determined standards. For another example, for the *smile shutter* mode of cameras, the pre-determined standards are, basically, detection of faces and detection of smile. Without these detections, the photograph cannot be captured. Only after these criteria are meet, can a photograph exist. The algorithms make cameras and applications user-friendly, but they put pre-determined standards.

How do the algorithms used in these tools describe the “perfect photograph” and errors? Due to its strong relationship with the memory, the possible effects of the changes in family on memory are discussed and questioned during the study as well.

The target that I focus on during this study is amateur usage in specific. I keep out the professional usage of cameras and editing tools such as art photography or commercial photography. Ordinary and amateur usage of cameras, the usage that has no need for

special background, is what I focus on. The automatic modes, automated features of cameras and user-friendly applications are suitable for these users. The person behind the camera for family photographs fits this user profile; mother or father, or sometimes a relative.

Year by year, new features are included in digital cameras and they assert that they can take the “perfect photographs” with respect to their algorithms. The question of what the “perfect photograph” is substantial. It is a very subjective topic, varying from person to person and over time, but what I want to focus on is how the algorithms define it. Digital cameras come with automatic modes for preventing errors such as wrong exposure, blurred or unfocused photographs. Continuous or multiple shooting and *burst mode* serve for selection of timing. Face detection and emotion recognition have been developed in recent years and their usages are widely spread out. Correspondingly, what is interesting is that at least eight basic emotions are easily detected but what is promoted in cameras is confounding: happy, is the equivalent of a smile. Shortly, the degree of a smile is established by the goodness or perfection of the image in the smile-based algorithms. In brief, there are a lot of different modes and applications for cameras and cellphones that include pre-determined standards and these algorithms developed for cameras leave no space for errors.

At this point, how the new algorithms in tools affect the standards in family albums is the question that should be asked. The aim of this thesis is to identify and conceptualize the error definitions defined by algorithms and categorization of errors with respect to the critical literature of photography and visual technologies. While doing this, the

standards and definition of “perfect photographs” used in the algorithms of cameras and applications that serve to capture, edit and archive family photographs are questioned.

Around 2000, digital cameras showed up and algorithms started to feed digitalization’s rapid growth. Automatic modes for preventing technical errors, modes for continuous shooting are placed to the cameras. Within ten years, *smile shutter*, which is a camera mode for taking photographs automatically when a smile is detected, had already been added to cellphone cameras. Digital time of family albums, which is frequently used in this thesis, corresponds to the time zone after 2005. Digitalization does not only mean the birth of digital cameras, it also refers to the algorithms that are added to digital cameras and cellphones and applications that serve “perfect photographs”.

The analogue time of photography refers to the time zone where photographic film was used. After digital cameras became widespread, the photography industry started to abandon the film cameras and stopped selling films. They moved to the production for digital photography. This shift was the death to the analogue time of photography that started in the 19<sup>th</sup> century.

For the celebration of errors, the time interval between 1990 and 2005 is preferred for the practical side of the thesis. All the photographs used in the exhibition belongs to the analogue time of family albums. The time zone of 1990-2005 coincides with my own family album. To be more specific, the time we walk through along this study, the shift between these two eras of family photography; a “transition” from analogue tangible beings of albums to digital images of family.

In his book *The Photographic Image in Digital Culture*, Martin Lister uses the term “post-photography”, which starts in the 1990s, for the rapid developments in the technology of photography such as powerful computers, graphic interfaces, and manipulation software (Lister, 1995). He underlines “the loss of reality”. The period that I focused on overlaps with the post-photography era. Mitchell also describes this era, “Today, as we enter the post-photographic era, we must face once again the ineradicable fragility of our ontological distinctions between the imaginary and the real, and the tragic elusiveness of the Cartesian dream” (Mitchell, 1992). Despite the fact that post-photography era had already started in the 1990s, the *transition* was not so sudden in terms of family photography. The period that is taken for this *transition* is from 1990 to 2005. The reason for ending in 2005 is the widespread usage of digital tools in vernacular photography. Digital cameras for the customers started to be sold in 1998 and the first cellphone with a built-in camera came out in 2002. In 2005, the sensors for face detection became available. Moreover, as an inspiration and personal motivation, my tangible family archive, which began in 1990, ended in 2005 by the coming of a digital camera into our home.

The project “Failed”, which is the practical side of this thesis, I aimed to show the imperfections in analogue family albums during the period of 1990 to 2005. It is before digitalization and algorithms start to take place in cameras. The reason for regarding the years between 1990 and 2005 is to investigate the same years within my own family album and figure out the “transition” between the analogue period of family albums and digitalization of family albums with new enhancements in cameras. All the photographs that I collect are analogue family photographs. I made an announcement in the “100. Yıl

Evleri” Facebook group and 18 volunteers contacted me to contribute to my thesis by sharing their “failed family photographs”. Thanks to all the volunteers, who selected and brought “failed photographs” from their family albums, I collected almost 200 failed photographs and I created an interactive exhibition by using them. It was an inspiration for looking for the standards of algorithms in tools after digitalization.

In the light of the critical literature of photography and visual technologies, the categorization of errors defined by algorithms is done and they are technical errors, timing errors, and non-smile errors. When one says technical errors, the first thing that comes to mind is unfocused, wrong frames or blurred images. Clément Chéroux approaches the subject of errors in photography in his book *Fautographie: Petit Histoire de L'erreur Photographique*<sup>1</sup>. He does not think that photographic errors should be avoided and he finds them inspirational. He mentions the terms “photogaffe” and “fausse<sup>2</sup> tographie”, which are used for a photographic accident (Chéroux, 2003).

For the first category, which is technical errors, Clément Chéroux’s error definition, “unexpected variations of the photographic parameters”, is very helpful. This category contains technical malfunctions and accidents such as a wrong angle, framing, shutter speed or exposure, blur or unfocused images. In addition, automatic modes of digital cameras that set the exposure, focus, and temperature are important for this category.

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<sup>1</sup> Brief History of Photographic Mistakes

<sup>2</sup> False photography.

The category of timing errors is the second category consisting of the photographs staying out of the *right* or *decisive moment*. The category of timing errors contains wrongly timed photographs such as unintended gestures, a hand that entered to the frame unwantedly, or an image taken just before faces turn to the camera. The main issue in this category is timing and the algorithms that are coded intention of the timing are focused on. Multiple shooting or *burst modes* of cameras capture multiple frames in a second and serve the choices to select the right moment. Besides, it indicates one of them for the best composition and focus. These modes and algorithms are the key points for this category.

The last category, non-smile errors, has the images including a variety of different facial expressions that is unrecognized by the smile-promoted algorithms in cameras.

Approaching the non-smile errors, applications and modes of cameras editing with the aim of the “perfect photograph” related to smile are selected and focused. With the critical literature of photography, visual technology literature is used for defining this category. In addition, modes such as *smile shutter* and applications are very helpful for this category. All of them are elaborated in the third chapter in detail.

The family photography caught my eye during the happy moment promotion of advertisements while making an essay film in the first year of my graduate studies. I examined the formation of family photographs with the essay film that I made. I titled it as “I’m shooting. Smile!”<sup>3</sup> because I had encountered many videos related to family

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<sup>3</sup> <https://vimeo.com/254224406>

photography promoting people to smile. Memory and standardization are other topics that I focused on throughout the graduate studies. I have always been interested in photography and its effect on memory is a very charming topic for me. Combining all these questions in my mind in an artistic project and academic research has been an exploration for me.

## **1.2. The Overview of Chapters**

This thesis is formed out of five main chapters. After this introduction, second chapter explores the history of family albums as a subcategory of vernacular photography. The huge production of family photographs began with the Kodak movement, which brings cameras to the domestic space. In addition, the similarities between the advertisements and common context and compositions in albums are discussed in this chapter. With the considerable amount of images taken for family albums throughout the years, family photography, and, of course, vernacular photography have a place in scholars, bookshelves, museums, and galleries. The commemorative meeting in company with family albums subjects to the collective memory that is described as a shared pool of knowledge in the memories of members of a social group. As an externalized memory of family, archiving the images is also a changing concept with digitalization and dematerialization.

The third chapter mainly explains the approach of this thesis in the field of family photography. How the developments in cameras affect our photographic production in family albums is questioned in this part. The developments related to the cameras are examined such as modes of cameras, face recognition algorithms, editing group shoots, and archiving optimization. How the algorithms describe the “perfect photograph” is discussed.

The fourth chapter focuses on the practical side of the thesis. As an artistic practice, the imperfections in the family albums are celebrated in the exhibition “Failed”. The chapter begins with the related artworks, giving examples of acceptance family albums as a work of art. Then, how these “failed family photographs” are collected from volunteers is stated. All these “failed family photographs” in the exhibition were a great inspiration to continue the error definition by algorithms of digital tools. The categorization of errors is done based on algorithms used in digital cameras, cellphone cameras and applications. The photographs in the exhibition were opportunities to see the imperfect side of family albums before standards for “perfect photographs” that come out by digitalization. Additionally, details of the exhibition format and the process of the exhibition are given in the last part of this chapter.

The last chapter is reserved for conclusions and further suggestions on the study. The main arguments in this study are summarized. It comes to end with the questions of where the elimination of errors and desire for “perfect photographs” drive us.

## CHAPTER 2

### ON FAMILY ALBUMS

#### 2.1. Family Albums as a Subcategory of the Vernacular Photography

Regardless of whether we are interested in photography or not, we meet on a common ground; the family album. As soon as we open our eyes, even though we have no idea about what a photograph is, our images take place in the family album meticulously. The fragmental records of our life start with the birth and continue with the important frames worth remembering. The person who takes the photographs in the family albums may change but mostly it is a member of the family; an amateur photographer.

Family albums that consist of amateur photographs belong to the vernacular photography. Simply, we can describe vernacular photography as non-art photography. In order to make it more understandable, vernacular photography is described in *Encyclopedia of Nineteenth-Century Photography* as a category of photographs whose subjects are travels, family occasions, and class unions (Hannavy, 2008). Therefore, it

means everyday life. Actually, its description and categorization are pretty wide. When we think about the amount of photographs taken for these purposes, vernacular photography covers a considerable part of the photography history.

Without addressing George Eastman, who is the founder of Eastman Kodak Company and inventor of roll film, it is not possible to speak of vernacular photography. It is a turning point because he carried the photography from the domain of professional studios to easy reach of ordinary people. The Brownie cameras<sup>4</sup> got home with a power to capture memories. Image making became more accessible with the little magical box, which is a long-running popular series of simple and inexpensive cameras in the earlier part of the twentieth century. Cheapness and easy use of these cameras gave rise to the popularity of vernacular photography, especially family photography. Amateur photographers turned their cameras to their surroundings. Unsurprisingly, advertisements were full of family occasions to turn this into an advantage. Which moments are worth recording is motivated by way of advertisements. Nickel has claimed that “Eastman created not just a product, but a culture” (Nickel, 1998:10). They have a kind of function to describe what should be captured. Our ways to recording inner circle have some similarities from the beginning.

In a few words, the family photography forms a big part of vernacular photography.

“Cameras go with family life” as Susan Sontag has mentioned in her book *On*

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<sup>4</sup> Brownie is a simple and inexpensive box made by Eastman Kodak. It is released in February 1900 to introduce the snapshot concept to the masses. It takes its name from the *Palmer Cox* cartoon characters “brownies”.

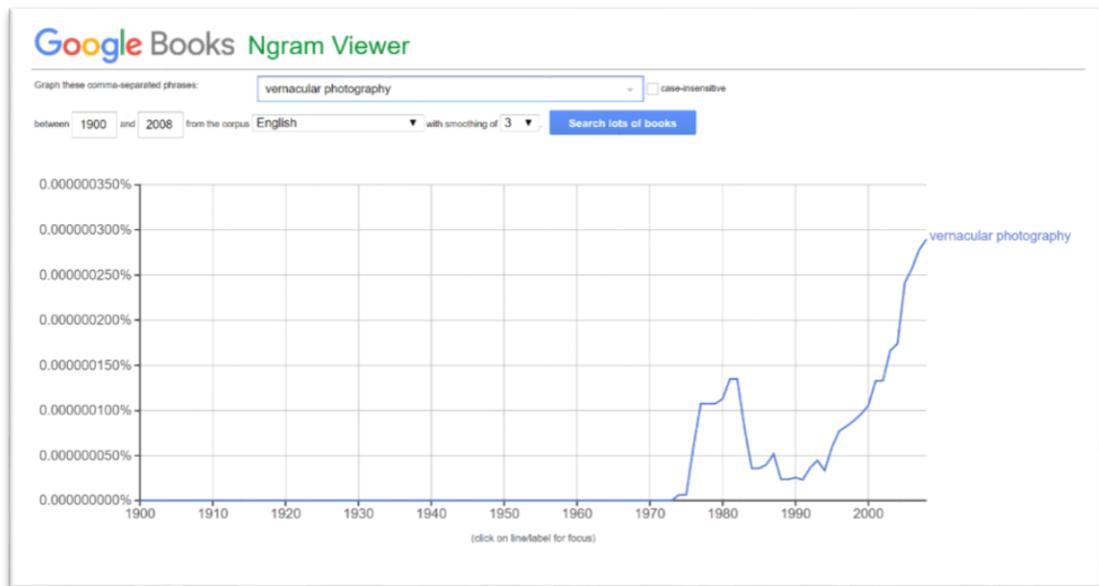
*Photography* (Sontag, 1977:5). In the light of a study done in France, Sontag underlines that a family with children is twice as likely to own a camera than a family without children (Sontag, 1977:5). As she highlights, a considerable amount of family albums devoted to the children of the family as well as in the advertisements, not surprisingly. Therefore, that family with children in a tendency to have a camera is a cause or a result of advertisements is open to argument. To say the least, children are involved in the advertisement of cameras pretty much as in the examples shown in Figure 1. The statement of “I want to remember this moment...” underlines the mnemonic beings of the family photographs. The usage of images from a holiday with children or spending time in a garden with them turns to a manual for recording family.



**Figure 1. Kodak advertisements based on children (Retrieved from: <https://envisioningtheamericandream.com/2016/02/22/the-fading-middle-class/>)**

Throughout the history of photography, but especially after growing popularity of the Brownie cameras, family photographs constitute a considerable part of the photographic production but they are created without any artistic intention. In his book *Fautographie: Petite Histoire de L'erreur Photographique*, Clément Chéroux (2003) points out that in the past years, both scholars and artists have had an increasing interest in vernacular

photography (Ch eroux, 2003). Scholars such as Geoffrey Batchen (2000, 2008), Elizabeth Edwards (2004), Christopher Pinney (1992, 2000) and Gillian Rose (2010) have elaborated their loaded researches on family photography. Furthermore, if we analyze the phrase of “vernacular photography” in Google Ngram Viewer, which is an online search engine using the data of Google Scholar, it can be seen that the attention towards it has been increased year by year after 1990 (Figure 2).



**Figure 2. Google Ngram Viewer result about “vernacular photography”**

Even though vernacular photographs are created outside of the scope of fine art, they are subjected to being looked at as works of art. Several recent exhibitions, talks, and catalogs are devoted to the vernacular photography such as *FLOH*<sup>5</sup> (photobook) by

<sup>5</sup> *FLOH* is a photobook consist of family photographs found in flea markets in Europe and America. It is a twist from a silence of lost objects to an art object. Each copy of the book is signed and numbered by the artist.

Tacita Dean in 2001, *Album Beauty*<sup>6</sup> (exhibition) by Erik Kessels in FOAM in 2012, and *Vernacular Photography as Art*<sup>7</sup> (talk and seminar) in TATE Modern in 2013. In spite of the fact that vernacular photographs have no artistic intention, it is discussed in the academy and subjects to exhibitions, talks, and photobooks.

In conclusion, we are born into the family albums, which are described as “chronicles of family” by Sontag (1977). In simple terms, the family albums is a document. Family dinners, holidays, birthdays always take a place in them. On the other hand, family photographs are not taken to be great works of art. They are shot because they are thought that they have to be remembered in the future. They have a task of being “mnemonic-devices” and “aide-mémories” (Langford, 2001). A considerable amount of production continues along the photography history. Photography accepted vernacular photography as a part of its history, and so did the scholars and the art world.

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<sup>6</sup> *Album Beauty* is an exhibition about the visual anthropology of the family album presented in FOAM, which is a photography museum based in Amsterdam. (<https://www.foam.org/museum/programme/erik-kessels>)

<sup>7</sup> *Everyday and Everywhere: Vernacular Photography Today* is an event in TATE Modern related to the issues surrounding personal and public photography, photography and the internet and social networking sites, changing ideas of the archive and the family album. It also has discussions into the way that artists have utilized found and personal photographs in their artistic practice. (<http://www.tate.org.uk/whats-on/tate-modern/talk/vernacular-photography-art>)

## 2.2. Remembering or Recreation of the Past

Family albums have some common and essential scenes such as birthdays, family gatherings, and holidays as witnesses of happy moments like Bourdieu expressed as “high points of family life” (Bourdieu, 1990). As well as events, we can admit that even some poses and some compositions are repeated in many family albums. In that case, what makes the photographs in our family albums so special? The answer is not hidden on the surface of the image. It is not related to the composition or the print quality of the photographs. Most likely, the answer is hidden somewhere in our memory. As Roland Barthes expresses in his book *Camera Lucida*, “It exists only for me. For you, it would be nothing but an indifferent picture, one of the thousand manifestations of the ‘ordinary’” (Barthes, 1981:73). He looks at photographs of his mother after her death and stresses a photograph of her, which is named as *Winter Garden*, but we have never encountered that photograph as a reader. Since what Barthes talks about is does not reside just in that photograph. He does not feel a need for showing it; he interweaves the image with his memories.

It can be said that the camera images are the most powerful objects associated with memory. There are many researches related to the relationship between photographic image and memory, and how photographing affects memory (Halbwachs, 1992; Hirsch, 1992, 1997). Maria Sturken, who is an American scholar and author, expands on the relationship between memory and image and points out that memory is not implicit in a photograph, or in any photographic image, so much as it is produced by it (Sturken,

1997). In this sense, the photographs in family albums are fragmental records to provoke a remembrance. It is an initiator but the rest comes from us. It comes from narrations and performances while looking at the albums in the family.

People tell stories about their family photographs, expressing more than what you see in the frame as a stranger. It is key to remember and recount our personal histories.

Alternatively, can we say family stories? As Christopher Pinney, who is known for his studies on visual culture, expresses that blank spaces between the photographs are filled with the stories and emotions in the albums (Pinney, 1992). Family albums reveal themselves as a performance. It turns into a kind of commemorative meetings and keeps the memory of the family alive (Halbwachs, 1992).

How much of the memories we remember, is caused by what we have seen in photographs, is a mystery. Chris Marker expresses a reciprocal relationship between memory and images in his film *Sans Soleil* with these sentences; “I remember that month of January in Tokyo, or rather I remember the images I filmed of the month of January in Tokyo. They have substituted themselves for my memory. They are my memory” (Marker, 1983). Since the early ages of us, family albums are reasons to tell the history of family, events, and feelings in the past and today. People actually cannot remember some parts of the past, but the conversations in a family with the help of images construct a memory. Can this idea be possible? The experiences or stories that have been told to us in the family chain are engraved in our collective memory about family. Images are very persuasive to transfer feelings and ideas in the family chain.

Family photography is a powerful tool for what should be remembered or not. Even though the contents of the family albums change from culture to culture, what is the percentage of all these family albums that contain photographs from funerals, sad moments, and divorces? It is explained with the motto; “Kodak knows no dark days” (West, 2000:136). In the opposite way round, births, marriages, family gatherings, holidays, birthdays, and celebrations take priority to become an image and take place in family albums. That is to say, remembering the happiness and togetherness are the building stones of the family.

Family albums loom large in a formation of a collective memory of the family. According to Halbwachs, collective memory is not given but is rather a socially constructed notion (Halbwachs, 1992). If we look at the etymology of the word “album”, it means a white, blank tablet. It comes from the Latin word “albus” in 17<sup>th</sup> century refers to the whiteness of a sheet (Retrieved June, 2018, from <https://en.oxforddictionaries.com/definition/album>). It can be thought of as a promise of a fresh start for the memories.

The family album, it can be thought as a fresh start for the memories, has become subject to many researches, films, series, books, or work of art. As an interesting example, writer-director Mehmet Can Mertoğlu’s film *Album* (2016) which is about a family that creates false family history for their adopted child is an efficacious example to construct a memory with a family album. To make their child remember in the future, they create a history, which includes birth shots in a hospital and pregnancy shots that actually never exist (Figure 3). It occurs while shooting but they are fictitious. The film lies between

bitter realism and absurdism. It is an exaggerated example of memory construction with the help of family albums. In fact, its function is not so different from ours, whether shootings are fictitious or not, our attitude and perceive the albums are similar. It brings to mind the same dilemma; how much of the fragments we remember because of our memory, how much of them is constructed just because of the images we have seen in our family albums.



**Figure 3. A scene from the film *Album* (Mehmet Can Mertoğlu - 2016)**

### **2.3. Archive and Dematerialization of Family Albums**

Family albums, which are material components of family memories, were tangible archives that generally started with the wedding photographs, continued with the birth of first child, holidays, birthdays, and happy moments while funerals, separations, arguments and difficult times generally were not recorded. The important thing is the moment worth remembering. Therefore, it is one of the underlying reasons for why smiling snapshots become the norm for the family albums.

In the analogue time of the family albums, the photographs cannot be seen until they are printed; there is no preview. In these times, the procedure is shooting the film, development process and printing, which generally occurred in the studios and keeping them in physical albums or sometimes in boxes in bulk. The concept of the archive is also transformed with the digitalization. Digital cameras were developed, smartphone photography became widespread and the family photographs spread on the internet through social media and online archives. The archive is scattered to our cellphones' galleries, file folders in laptops, and cloud storing links. Social media is also one part of family photography archive.

From the beginning of the family albums, photographs have been tangible objects that interact with people physically. Edwards describes the materiality of the photographic image by writing, "photographs are both images and physical objects that exist in time and space and thus in social and cultural experience" (Edwards & Hart, 2004:1).

Batchen also emphasizes that those photographic images "can have volume, opacity, tactility, and physical presence in the world" (Batchen, 2000:60). Both of them are binding with the analogue time of archive. After a certain point, by the enhancement of technology, photographs, and associatively archives change their existence; they no longer exist physically. Archives start to be stored as electronic data and this creates digital memories.

Furthermore, the amount of photographs to which we are exposed has dramatically increased and digitally storing them became easier than ever; these are important factors about how much we need to remember with respect to the amount and the relationship

between photography and memory. New ways of remembrance are born on social media, such as Facebook reminders for a photograph from the last year or five years ago.

Dematerialization of photographs is inevitable. While we have several albums in our homes because of the limitation of analogue process, now the huge increase in the numbers of images taken and the developments on storage technologies drive the photographs to the dematerialization. The Dutch artist, Erik Kessels, filled FOAM Gallery from the photographs that upload to the web such as Flickr and Facebook over a period of a day, *24 Hrs in Photos*, in 2011. Mountains of photographs from floor to ceiling of gallery create a feeling like walking over personal memories (Figure 4 and Figure 5). Moreover, like the artist states, we all know that a million of photographs uploaded to the web, but when you download and print all of them, it turns out to be something different.



**Figure 4. *24 Hrs in Photo* by Erik Kessels in FOAM Gallery**



**Figure 5. *24 Hrs in Photo* by Erik Kessels**

While the amount of photographs has increased unbelievably, storing them as data is constantly becoming easier and new techniques such as tagging, categorizing are being built, what changed our relationship in the sense of memorizing them? How do these innovations touch the memory? The developments create new ways to make them be remembered. Tagging the photographs and searching them with keywords, keeping the date as data, notifications of social media in a way that this photograph was from this day 3 years ago are new ways of remembering. Remembering is now partially in the hands of the new tools.

## CHAPTER 3

### ERRORS AND “PERFECT PHOTOGRAPHS” by ALGORITHMS

#### 3.1. Elimination of Error, First of All, What is Error?

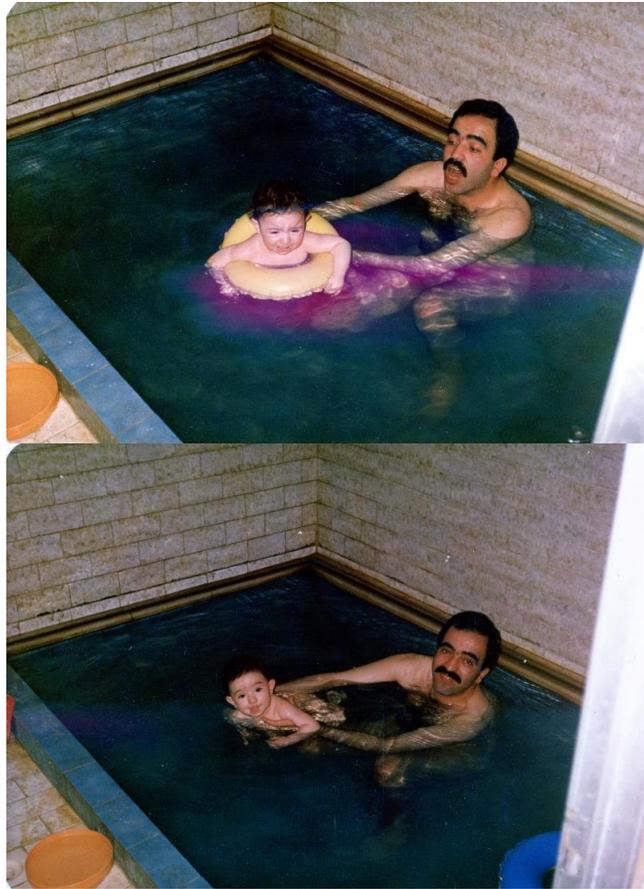
Family albums are powerful tools to create an idealization of a happy, united and intimate family. This idea behind the family photographs reveals itself in the moments captured, such as holidays, birthdays, feasts and trips. Especially during the early days of photography, certain family poses were fictionalized in studios. On the other hand, YouTube is full of videos<sup>8</sup> associated with tips to capture better family portraits today. They act as manuals for capturing or posing such as “How to Create Perfect Family Portraits” (1.6 million views). Between these two times, the family photographs produced in studios that are professionally shot and today's technologically helped family photographs, there are family photographs taken by amateur photographers. After the

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<sup>8</sup> A few examples of videos related to the tips for family photographs on YouTube and review numbers; Tips: How to Create Perfect Family Portraits (1.6 million views), How to Get the Perfect Family Holiday Photo in 18 "Easy" Steps (95 thousands views), 6 Tips To Capture Creative Family Portraits (91 thousands views), Digital Photography Tips for Capturing Perfect Family Photos (79 thousands views).

cameras entered the homes, the photographs were generally captured by family members with the analogue cameras and their physical existence showed itself in the family albums. Before cameras were generally found in homes, family photography was under the safekeeping of professional studios. After digitalization, which started with the production of digital cameras for masses and later continued with cameras on cellphones and new algorithms such as *smile shutter*, family photography is now in the hands of the algorithms. A transition between these two, family albums are in the hands of amateurs who dare to make mistakes.

Even through a selection of favorable moments, some imperfections can be seen. Because of the limitation of 36 poses per ordinary rolls of film and the impossibility to see them before printed, every snapshot takes its place in the album even if they are erroneous. Thus, it is ordinary that erroneous photographs can exist in the family albums, but what is interesting is that the photographs that are taken sequentially; the “faulty” one and the “correct” photo are both kept in the family albums. The usage of the words “faulty” and “correct” is from one of the participants from the project “Failed” to express the photographs in Figure 6.



**Figure 6. Example of keeping also errors in the analogue albums (courtesy of Sedef Beşkardeşler)**

The acceptance of faults, errors, mistakes in the frames, incomplete gestures, and different expressions make non-uniformity possible in the family albums and perhaps family memories. With the rapid replacement of the human eye with the algorithms, applications, and smart cameras, the idea of the “perfect photograph” reveals itself.

With the companion of keeping the photographs that include errors, narratives behind the image can be preserved more easily. The memories were transferred and transformed through a family chain. It is a habit to reminisce about times gone by. The errors in photographs have a resemblance to stumbling blocks. It strengthens to conserve the

narrative layer in the images. According to Kuhn, these narrations are critical for making ourselves (Kuhn, 1995:2). Family photographs are raw materials but they are merged with the narrations in the family and it is interweaved to our memory and identity.

When we look at the family photographs taken with new tools, after digital cameras and smart applications come into our lives, what do we have nowadays? Similar perfect gestures! Where does this similarity in expressions come from? On the other hand, when we look at the family albums in the analogue time, we encounter a diversity of expressions such as angry or neutral faces, crying children, unintended hands in the frame or faces that are not looking at the camera. All these incomplete gestures, different expressions or “imperfections” have a different layer when we look at the family albums repeatedly.

In these days, family archives from the analogue era still preserve different expressions from our past. What about the next family albums? What will happen if we only save perfect, smiling photographs in albums? When we look at the album and remember or construct the old times, only smiling faces will be remembered through images. Are the other expressions not worth remembering? I think that all the expressions belong to us and deserve to be saved. My critical approach is that, if the standards in tools become dominant for recording moments, saving them and they define what erroneous is by pre-determined standards, the standardization would be inescapable.

Geoffrey Batchen who is the author of *Burning with Desire: The Conceptions of Photography* (1999) and *Each Wild Idea: Writing, Photography, History* (2000),

mentioned expressions in portraits in the first 50 years in photography history and explained the reasons for sameness with the technical needs (Batchen, 2000). Therefore, a sameness exists in the early times of photography because of long exposure durations; but today sameness returns to the stage for another reason; idea of perfect photographs.

Can we say that as cameras get smarter, the family photographs change? McLuhan (1964) stated that the medium which carries a message forms that message at least in some levels, since the communication is affected with borders set by medium's physical characteristics. What is in the images and the technical side of the cameras are not completely separated. Therefore, turning into Flusser for this point would be a good option (Vilem Flusser, 2006:1),

The change would be fundamental because our thinking, feeling, desiring, acting, and even our perceiving and conceptualizing are to a high degree shaped by the structure of the code in which we experience the world and ourselves.

The tools used for recording moments have undeniable effects on the images and they gain new members with time such as that cellphone cameras participate in the playground in the last 15 years. On the other side, cameras are in a race for presenting upgraded models or better images. As Flusser points out in his book, *Towards a Philosophy of Photography*, “apparatus”, which can be considered as a camera, is programmed to give one of the possibilities that is programmed in the codes. The power is moved from the photographer to the programmer (Vilém Flusser, 1983). If the possibilities start to become narrow, the standardization is inevitable. The automatic modes in cameras, application with pre-determined standards decrease these possibilities. The code behind the lens should not be underestimated or forgotten.

### 3.2. Algorithmic Developments in the Cameras

Facial recognition systems became popular over time in different areas such as security systems, robotics, and marketing. The photography is just one area of them and it started to become detached from human eyes within the past decade because significant effort has occurred in automatic recognition of facial expressions in cameras. How does this technological development affect family photography, which is a part of vernacular photographs? The reasons to look at the family albums to see the effects of new developments in visual technologies are its continuousness through photography history, its user profile that is formed generally from amateur photographers whose usage is more dependent on algorithms. In addition to this, family albums have a strong relation with remembrance and the radical changes in family albums can affect how we will remember in the future.

Nowadays, there are numerous applications that strongly advice or impose which one of your shots is the perfect one to use. At this point, we should ask the question of how they define the “perfect photograph”. How does the algorithm work behind the screen? Firstly, technical standards such as right exposure or focus are evaluated. It is generally the first step for algorithms that are used in cameras. If multiple shooting, continuous shooting or *burst modes* are selected, they are coded to serve options for best timing. The algorithms for optimizing the storage capacity decide which one of them is the perfect one to store. Their suggestions on which one to keep is exemplified in Figure 7.

Upgrade now to get [Smart Photo Cleaner](#), which scans your entire photo gallery and allows you to identify & clean:

- **Similar photos:** Since the dawn of digital photography, the practice of carefully framing and taking pictures are long gone. Now we take 5 photos of our lunch, but only post one to social media or send to our friends. Smart Photo Cleaner doesn't just identify similar-looking photos, but also figures out the best ones from the group – and allows you to get rid of the rest!
- **Bad photos:** AVG Cleaner for Android also knows which photos are under- or over-exposed and blurry, giving you an instant way to de-clutter your photo gallery. It analyzes various aspects of a photo, such as sharpness, color, and lighting, and gives you the choice of what to keep and what to get rid of.

**Figure 7. An example of how the algorithm is working for storage *AVG Cleaner*<sup>9</sup>**  
(Retrieved from: <https://now.avg.com/detox-your-messy-photo-gallery-with-avg-cleaner-for-android/>)

Algorithms can decide the “perfect photographs” and poses while shooting, editing or saving. In the digital algorithms, a moment definition input device defining a moment at which an anticipated event is to be photographed. In the digital flawlessness, family albums turn to a visual similarity when images can so easily be perfected and a code of standards runs behind the shutter.

In recent years, the developments gained speed in visual technologies. Correspondingly, our approach and pro-consumption of family photographs received its share. Nowadays,

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<sup>9</sup> AVG Cleaner is an android application and its main purpose is to help you make space on your smartphone by automatically deleting any duplicate, similar, or poor quality photographs with respect to its standards.

pulling our smartphones from our pocket, taking a snapshot in our coffee break with our mother, maybe adding some filters and sharing it on social media is considered very ordinary, almost cliché. However, in reality, even though this common behavior seems old and cliché, it has only been around for ten years. The first Fuji digital cameras for customers is introduced in 1998 and the first cellphone with a built-in camera entered the market in 2002. In 2005, OMRON Corporation, which is a global leader in automation, sensing and control technology, announced "OKAO Vision Face Recognition Sensor", a world first in face recognition technology that can be implemented in mobile phones with a camera function. It has not taken a long time to add the emotions and selection of emotions to these enhancements. Sony was the first to market for *smile shutter* in 2007.

Advances in the field of image technologies press forward and it causes a new era; “post-photography” (Lister, 1995; Mitchell, 1992). As well as changing the rules of shooting a photographic-image; new ways of storing, archiving, and sharing them are born. From tangible beings of the family albums, a move starts to the dematerialization of them. According to Stoney, who has valuable works on the history of photography and digital culture, the emergence of digital photography has led to a variety of changes in photography such as production of photograph technically, ways of shooting, storing and sharing. (Stoney, 2016). *Burst modes* for continuous shooting and *smile shutter*, which watches for a smile to take a shoot, are a few examples of new features in algorithms. Sharing has moved from a way that family narrations accompanied by albums to social media posts with family hashtags. All these changes are quite recent but they are normalized because of their widespread usage.

### 3.2.1. Face Detection and Emotion Recognition

Facial expressions constitute a big part of the gestures. A definition of gesture is expressed as a concept that is fundamental to the creation and reception of visual images for locating an understanding of creation of meaning in visual culture (Grønstad, Gustafsson, & Vågnes, 2017). The word gesture contains all bodily actions to communicate, such as finger signs, handshakes, salutations, eye rolling, and headshakes. In the light of developments in cameras, the focus of this study is facial expressions. The facial expressions drive us to emotions and so the culture of emotions, also known as "emotionology", which consists of the collective emotional standards of a society (Stearns & Stearns, 2016). Emotion values can change through history related to important shifts in culture.

To understand the relation of modifying gestures, especially facial expression according to cameras in vernacular photography, to consult film studies is a rational and alternative way because of the rich studies on gestures. For the conceptualization of gestures, the writers make a link between gestures and films. Grønstad, who is a professor, author, and director of the Nomadikon Center for Visual Culture, states in his book that film produces an aesthetic that can document and modify gesture (Grønstad et al., 2017).

Under the title "narrative of feelings", Balazs conveys his thoughts on facial expressions in words "And looks can express every shade of feeling far more precisely than a description! Facial expressions are vastly more numerous than words!" (Balazs, 2010:33). In cinema, the transition between gestures creates affections, on the other

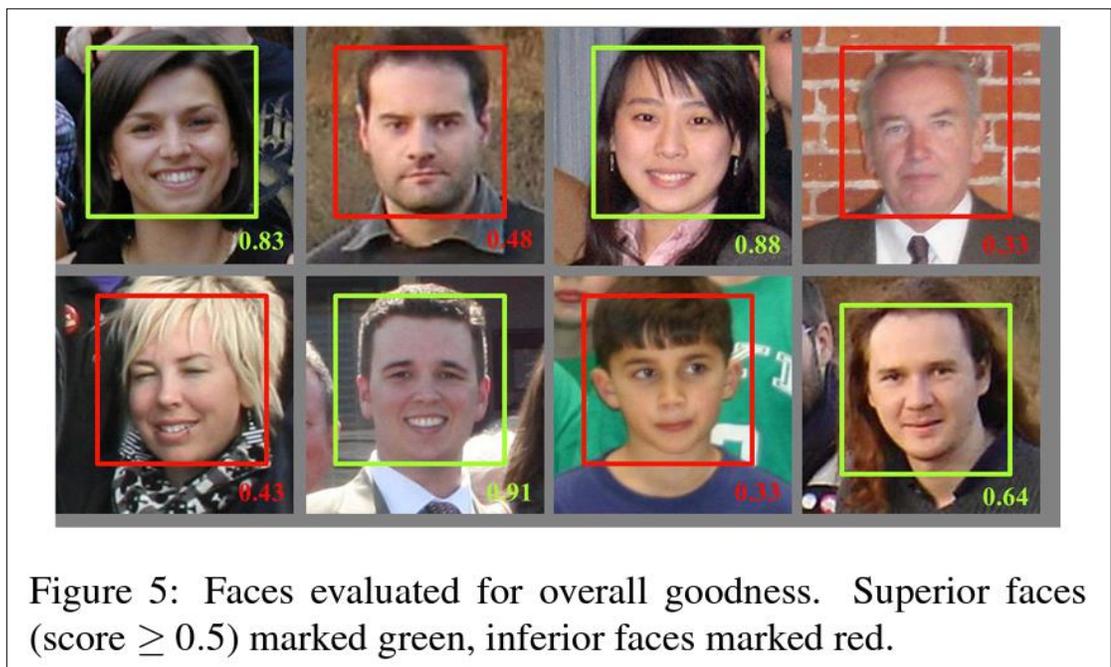
hand, in photography, the selected gestures, and facial expressions are still. Contempt, anger, neutral, surprised, happy, fear, sadness, and disgust are eight basic emotions that are conveyed through facial expressions.

When we look at the photography studies, Kotchemidova searches the history of the toothy smile as a standard expression in snapshots in her essay and she finds out that the standards of facial expression are subject to cultural and historical changes (Kotchemidova, 2005). In the beginning of photography, while serious faces are common, as time goes on, the smile starts to take its place. From serious faces, the standards pass to the motto of “say prune” for the intention of small mouths and then to better-scored faces with bigger smiles.

To figure out the beauty standards in smart tools, it is better to focus on the algorithms in visual technologies. After face detection is possible, emotion analysis is added to the algorithms. A lot of emotion channels are used to detect these feelings such as brow furrow, brow raise, lip corner depressor, inner brow raise, eye closure, nose wrinkle, upper lip raise, lip suck, lip pucker, lip press, mouth open, lip corner depressor and chin raise (Retrieved June, 2018, from <https://imotions.com/facial-expressions/>). Apart from reaching the “perfect photographs”, emotion recognition is used to record human interactions and interviews and to observe group dynamics.

In one of research on algorithms, *Automatic Photo Enhancement by Facial Expression Analysis*, they use a scoring function for evaluating the *goodness* of a face, based on smile degree and open/closed eyes. It creates the “perfect” composite from a given set of

group photographs. Firstly, face detection is completed and the grouping of the faces for the same person is done. Secondly, a goodness score is assigned to each face. As it can be seen in Figure 8, the degree of smile and the state of eyes (closed or open) are measures for the *goodness score* and the categorization of superior and inferior faces. Finally, it selects a target photograph based on the overall scores and replaces any low scoring faces in the target with high scoring ones from other photographs (Shah & Kwatra, 2012).



**Figure 8. An example of face evaluation for goodness point**

Briefly, to achieve a higher score and therefore to be best photograph, everyone in the photograph should have a big smile. Thus, the goodness is established on the “smile”. This algorithm, which is developed for cameras and smart applications, built its beauty standards on open eyes and the degree of smile. Does bigger smile mean better photographs or perfect images anymore? According to algorithms, the answer seems like

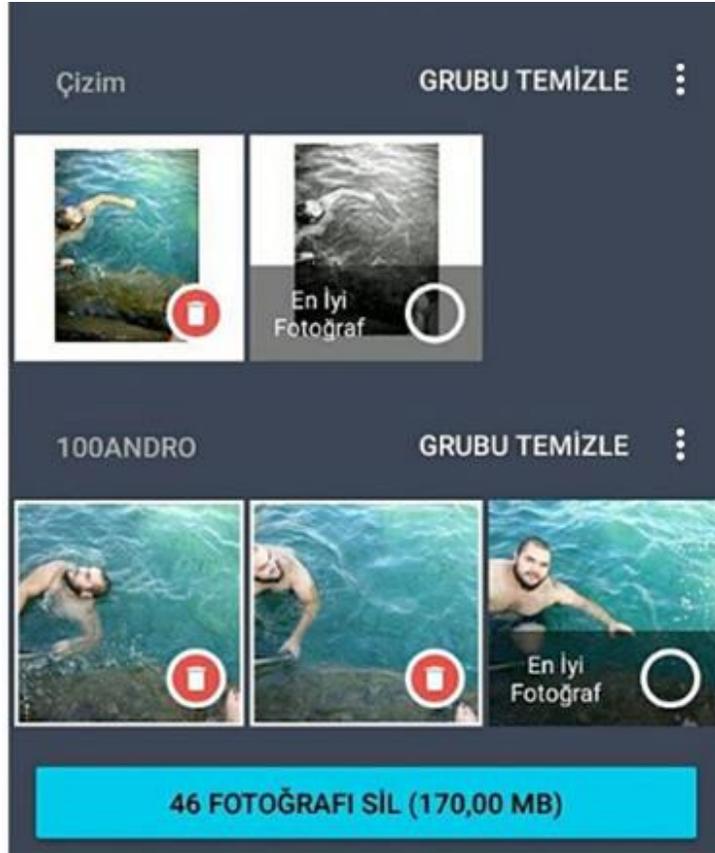
yes, but I think that it is a biased standard because the perfect photograph is a subjective topic.

All these algorithms and applications direct and shape us towards the “perfect” and idealized photographs. Mark Godfrey, who is the curator of International Art at Tate Modern, underlines the elimination of imperfections, “Digitalization discourages people from saving or printing out mistaken photographs- they can be erased from camera's memory before they have a physical presence, erased without any superstitious misgivings” (Godfrey, 2005:114). This idealization shapes our perception. It turns into a goal of “perfect photographs”, which is the approach of our era, even though without using any application. Using pre-determined standards in cameras carries us to a sameness. After a point, these algorithms and the idea of perfectness suppress our eyes.

### **3.2.2. Digital Archives: Where Do All These Suggestions Come from?**

As well as shooting and editing, algorithms are also used in archiving. Developments in storage technologies continue without ceasing, nonetheless, there is a limited capacity in memory cards of smartphones or cameras. Especially for the *burst mode*, which is a standard feature in smartphones for continuous shooting, or the similar photographs taken one after the other, the suggestions in order to save space in the memory card are made with respect to some pre-determined standards.

The suggestions for the similar photographs are made and are put forward about which one of them should be kept and which others can be deleted. As it can be seen in Figure 9, the selected photograph is the one where the face is fully visible. There is a decision in the backside about which photograph should continue to be stored, others not. For the archiving process, suggestions are made with respect to the idea of perfectness. Furthermore, suggestions about which photograph is the best one are made by applications such as “AVG Cleaner” which is a smart device manager and optimization tool. It is titled as speed, battery and memory booster in smartphones. It suggests the best photograph to save and “the others” for deletion because “the others” resemble the best one but they are not as good. It is advertised that your smartphone will run faster, free up memory by cleaning junk, and stay charged for longer (Retrieved February 2018, from <https://play.google.com/store/apps/details?id=com.avg.cleaner&hl=en>).



**Figure 9. A suggestion of AVG Cleaner for which one of them is the best one<sup>10</sup>**

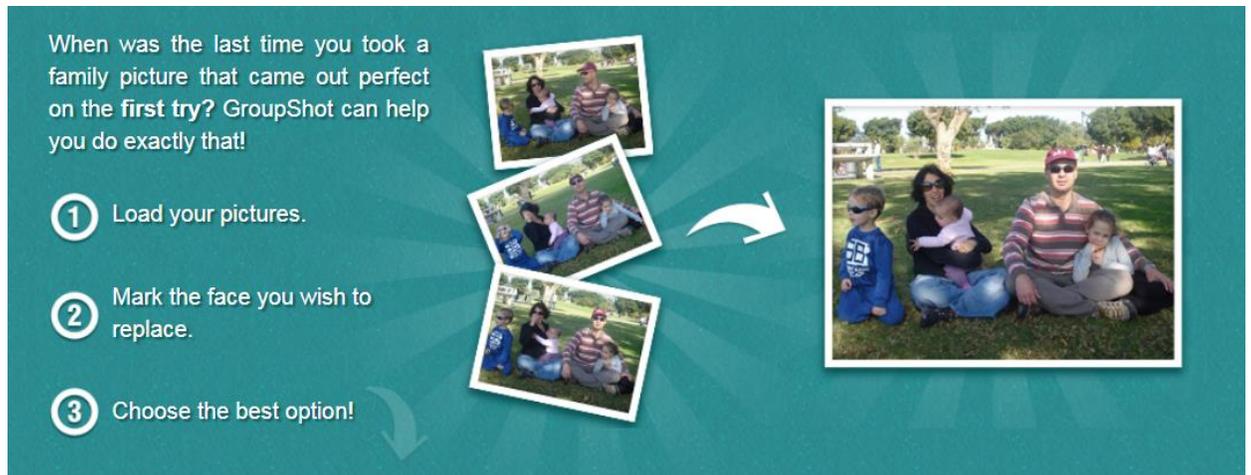
Susan Sontag explains how we connect with the portraits in an interview. We all have portraits from childhood and they are records of what we looked like. The same is also true for our parents or grandparents (Sontag & Poague, 1995). With Sontag's stressed point, we can question this: frames in the family albums construct our imagination and thoughts about our appearances, gestures, and expressions, even personalities from our childhood or relatives'. Does not which photographs are shot or saved affect our memory about personal or family history?

<sup>10</sup> "Delete this group", "Best photographs", and "Delete 46 photographs" is written in the figure in Turkish.

### **3.2.3. Editing Applications That Claim to Serve “Perfect Photograph”**

Mitchell uses the term “pseudo-photographic assemblages” for images that are created by addition, deletion or substitutions and points out its effects of creating false beliefs. He expresses that it becomes much easier with digitalization (Mitchell, 1992). Editing applications can be considered as tools for pseudo-photographs. Editing and manipulating photographs exist also in the early times of photography in dark rooms but, now, it is very achievable with user-friendly tools and the pre-determined options from the viewpoint of vernacular photography. Besides, professional digital editing tools are available for a long time but they are generally used by professionals, not by every ordinary user. On the other hand, these algorithms placed in cameras make everything easier for amateur user. The critical part is pre-determined standards in line with this purpose of “perfect photographs”.

To examine the editing applications, one example is the *GroupShot* application, which is a fixing application for family photographs. It is an application for combining different photographs by selecting best parts from each one and combining them into a final photograph with the motto of “Make your family picture perfect” (Figure 10). In the advertisement, they describe a problem for family photographs; a person is not facing the camera or has an expression that does not fit the rest. “Usually, we take several shots with the hope that one will be perfect. With GroupShot, people can pick and choose the best photo of them and integrate it in high quality” ([www.groupshot.com](http://www.groupshot.com), n.d.).

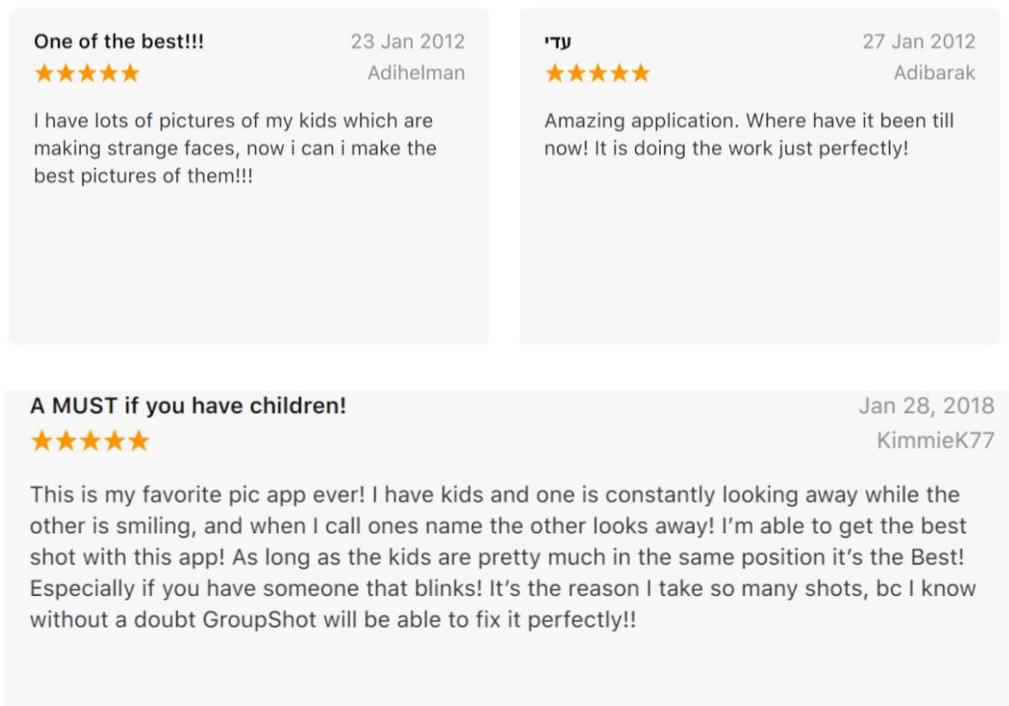


**Figure 10. Manual of *GroupShot* application**

With this kind of application, the final image we see, never actually happened in any time or any space. The reality in photography is always a much-discussed issue in terms of subjectivity, but with this attitude for the sake of the “perfect family photograph”, the reality in the image turns into a bigger problem. The usage of “perfect photo” word repeats in the comments and the advertisements of the application coincides with how I critically used “perfect photograph” through the thesis such as,

- a new iPhone app that enables people to take the **perfect group photo** without the worry of one person in the group messing it up.
- Sarah Perez from TechCrunch states GroupShot, “... does something pretty special. The resulting photo is the **perfect picture**, where everyone is smiling, facing the camera, and looking their best. It’s magic!”
- PC Magazine: “With Group Shot, you can skip the fancy photo editing software and create the **perfect group shot** right on your iPhone.”

What's more interesting is one of the user's experience and comment. S/he wrote about the application; "I have lots of pictures of my kids which are making strange faces, now I can I make the best pictures of them." as it can be seen in Figure 11. It can be thought very innocent and kindly comment for expressing nice pictures of their children, but if we ask the question of what will happen if only "perfect photographs" of the children are kept for the future? Should a "perfect photograph" be depended on smiley faces? On second thoughts, if the children construct their memories out of just "perfect photograph", would not it be manipulative?



**Figure 11. Comments by users of *GroupShot* application**

From this viewpoint, if the mother has changed all the facial expressions of her kids, which she called as strange faces, with the smiling ones, when the kids will grow up and encounter with just smiling faces of themselves in their family's externalized memory,

these expressions will become a base for their memory. Other faces of children can be forgotten because they are though not worth remembering despite of that it is not the children's choice.

### **3.3. What is “Perfect Photograph”?**

#### **3.3.1. “Smile!” Promotion**

It is obvious that exposure duration has an effect on photographs until the beginning of the 20<sup>th</sup> century because it is not fast enough to freeze a smile. Nevertheless, the shutter speed cannot be regarded as the only one responsible for the whole journey of the smile. Every new feature or code added to cameras affects the journey of family photography. The latest is the smile-based algorithms that underestimate all the other facial expressions except the happy one.

Today's “Say cheese!” directive was not always the case in spite of that it becomes almost the first social reflex when we encounter a camera. In place of this, “Say prunes” which can be an inheritance from Victorian Era was the one in the studios to form a small mouth. Smile in the photographs instead of small mouth was accepted as a sign of the self-consciousness (Kotchemidova, 2005).

Occurring at the same time as the birth of photography, Charles Dickens gave a voice to a portrait painter character about a problem in facial expressions and expectations

(Dickens, 1839):

In fact, there are only two styles of portrait painting; the serious and the smirk; and we always use the serious for professional people (except actors sometimes), and the smirk for private ladies and gentlemen who don't care so much about looking clever.

Besides the discriminative approach, a part of a fiction can provide an insight opinion about which facial expression is approved in those years. Additionally, it helps to understand that the smile is not always related to the “perfect image”, while it has become a reflex to the camera. It is also a sign of the changeable meaning of facial expressions.

The phrase “Say cheese” appears to have been first used in this way around the 1940s, with one of the earliest references appearing in The Big Spring Herald in 1943 based in Texas:

Now here is something worth knowing. It is a formula for smiling when you have your picture taken. It comes from former Ambassador Joseph E. Davies and it is guaranteed to make you look pleasant no matter what you are thinking. Mr. Davies disclosed the formula while having his own picture taken on the set of his “Mission to Moscow.” It is simple. Just say “Cheese,” it is an automatic smile. “I learned that from a politician but, of course, I cannot tell you who he was...”

With the Kodak culture, the expression of smiling has started to be encouraged more with the help of advertisements (Figure 12). Kodak has educated the public through advertisements with capturing the happy occasions. Even if people are not in a happy

mood like a soldier in war, smiley portraits are recorded in spite of tragic realms. It does not have to be a war example. In the daily life, whatever people's moods, there is an undeniable tendency to smile for the camera. Even the little kids show a big smile when they encounter it at first sight.

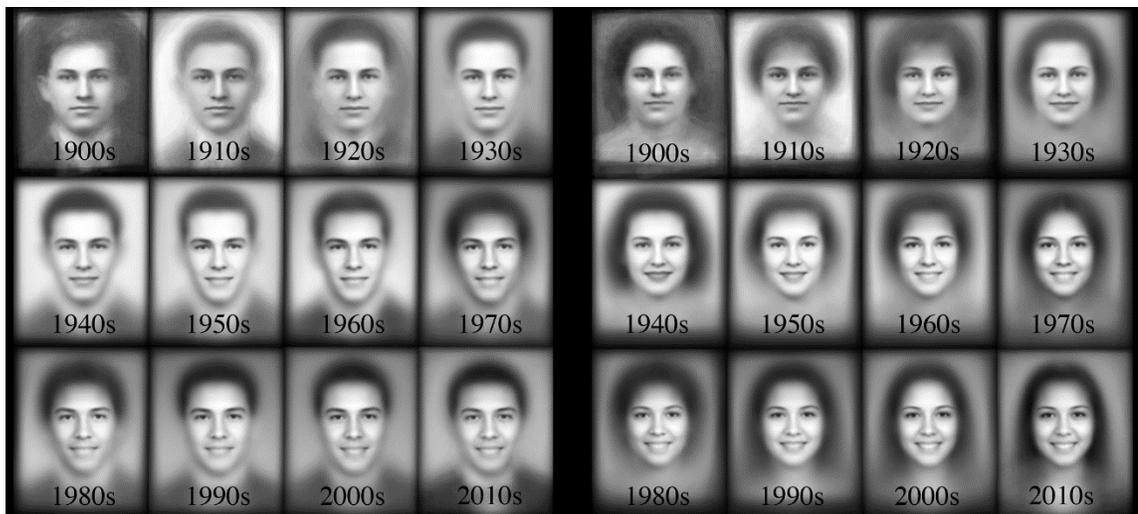


**Figure 12. Kodak advertisement related to smile promotion**

A team of computer scientists has used deep learning algorithms on a dataset of yearbook portraits to perform a visual-historical analysis of school yearbooks.

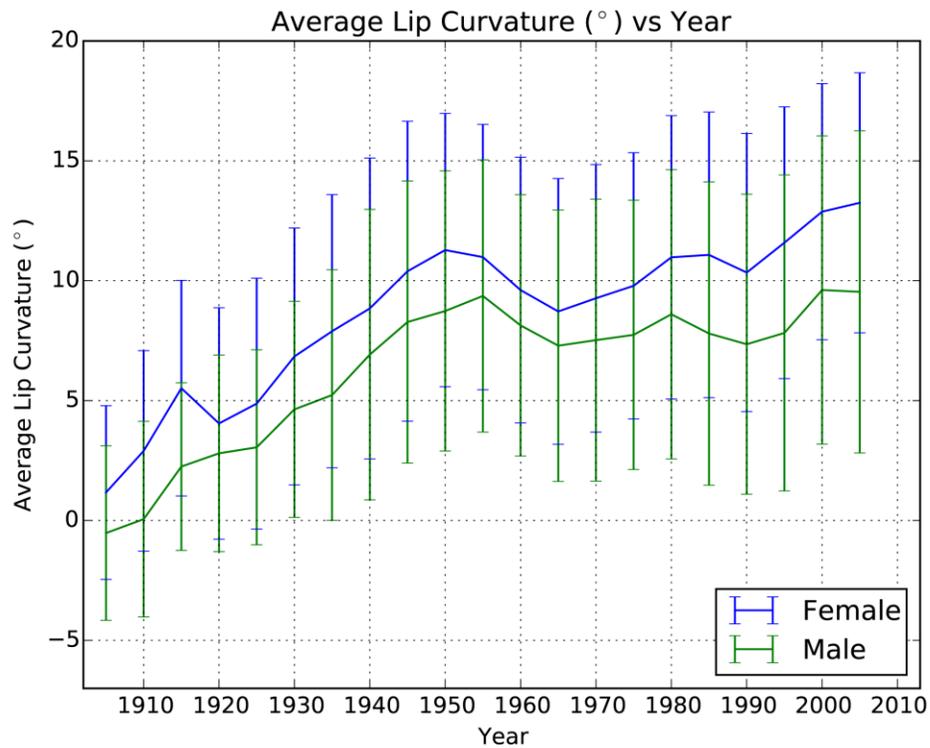
Ginosar explains how these photographs have helped us to gain new insights into everything from fashion to the evolution of the smile (Ginosar, Rakelly, Sachs, Yin, &

Efros, 2016). An intriguing analysis of visual historical data using a dataset of 37921 portraits from 115 high schools in the United States to understand the evolution of school portraits that are a part of vernacular photographs. In the research, there are some data visualizations for hairstyles or accessories through years, however the intriguing one is smiling. The results of data analysis are organized chronologically and average facial expression for decades is formed in the categorization of male and female students (Figure 13).



**Figure 13. Average images of high school students for each decade of the 20<sup>th</sup> century (Ginosar et al., 2016)**

The obvious result is that the smiling degree increases through the years. The question of why there is no smiling face in old photographs is usually explained by the longer shutter speed or “bad” teeth conditions. However, this explanation is not enough for the whole journey of smile in the vernacular photography. As we know, by the beginning of the twentieth century, the desired shutter speed for non-neutral poses is reached. Besides visualization of portraits, the smiling degree with respect to lips curvature is shown in graphical representation (Figure 14).



**Figure 14. An evolution of smile in American high school yearbooks (Ginosar et al., 2016)**

Above all, top of promotion of smile comes with the algorithms in the cameras and editing tools. There is a strong competition between cameras, smartphones and applications to provide better images for you. *Smile shutter* becomes almost an ordinary feature for cameras, especially smartphones. If you are not smiling in a photograph, editing applications come to the images rescue by putting a smile on your face easily. These are not professional editing tools, the main focus of these tools are vernacular photography, everyday photography, for any amateur person. It is an easy tool to assert to make “perfect photographs”. It is particularly promoted for group shoots like family photographs, which are not easy to control everybody’s mood.

Nowadays, smiley faces are seen as an initial condition for photographs; even if they do not exist, they are almost forced to exist with some wide-spreading tools. By looking back to a little to last century, we can see that the expectation of a smile on photographs is socially changeable. With the tools, it is easy to manipulate the pro-consumption.

### **3.3.2. Creating a Perfect Image That Never Exists**

When we think the editing applications that change the people's faces with the smiling ones or better smiles, the final image is actually an image that never existed anytime or in any space. Since the algorithm finds everybody's "perfect" pose and put together the others' best poses. Can we say that it is an idealization of a group image based on individual people's expressions?

The claim of a need for automatically synthesizing the perfect composite comes from the idea that *smile shutter* or *burst mode* do not always give good results for group photographs. In one of the studies about automatic photo enhancement by facial expression analysis explained the algorithms working process like this (Shah & Kwatra, 2012);

This scoring function is based on classifiers for facial expressions such as smiles and eye-closure, trained over a large set of annotated photographs. Given these scores, the best composite for the set is synthesized by

- selecting the photograph with the best overall score, and

- replacing any low-scoring faces in that photo with high-scoring faces of the same person from other photographs, using alignment and seamless composition.

New beauty standards in the hands of the algorithms are also coded based upon “smile”. To improve the algorithm, a dataset that is composed of a huge number of photographs taken previously should be used. The used dataset to improve the algorithm is family photographs, convocation, and friends outing from the web. An example of the grouping according to goodness point of the faces is given in the Figure 15. Their smile degrees make the photographs a superior or inferior one. These pre-determined standards that are developed for cameras have a power on pro-consumption of vernacular photographs.



Figure 2: Examples of inferior (top) and superior (bottom) faces.

**Figure 15. The grouping of expressions as inferior and superior (Shah & Kwatra, 2012)**

Even the images that are not taken subsequently are united to reach a high-scored image (Figure 16). The photographs can be from different times and places. The important thing is whether a bigger smile is there or not. The final composition literally is never happened.

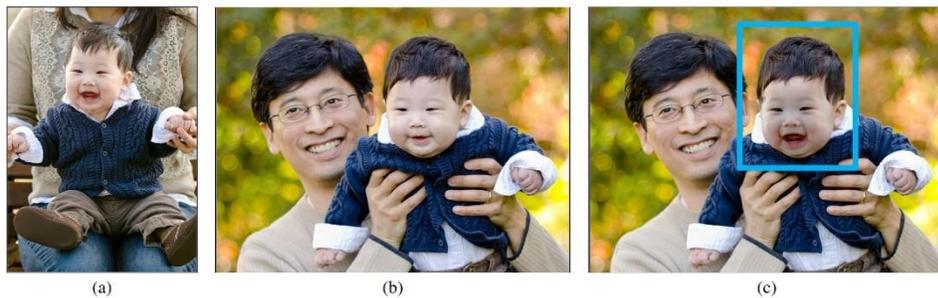


Figure 9: Example demonstrating robustness of our technique. Source (a) and target (b) photos were taken farther apart in time than a typical “burst”. (c) Composition.

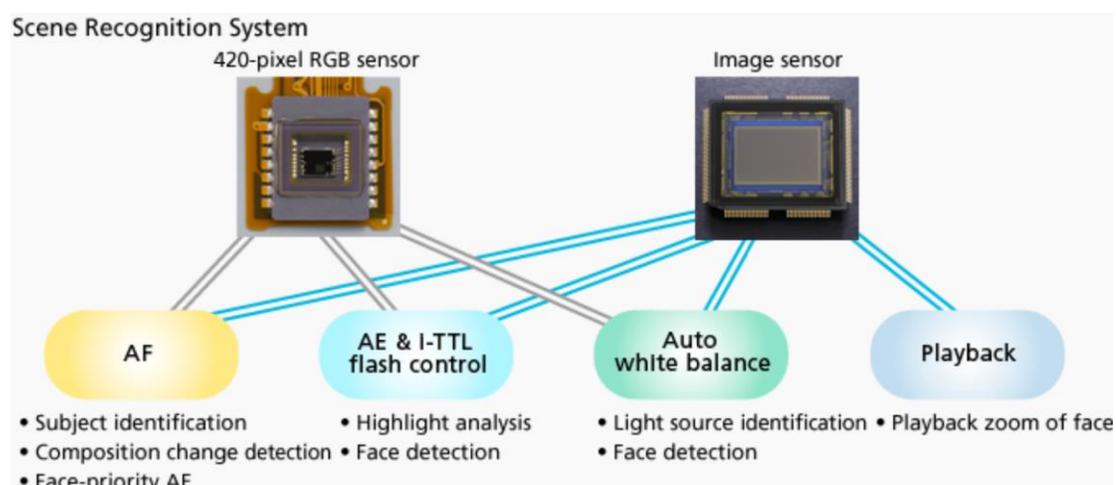
**Figure 16. A composition for the highest point results according to the algorithm (Shah & Kwatra, 2012)**

The answer of that perfect photograph is very personal. Despite this, associating it with smiling degree as well as technical standards and selection of right timing very is very biased and closed approach. The tools that algorithms take place in are very user-friendly and serves for amateur usage. They also promote that they enable the users to reach “perfect photographs” by their manuals and advertisements. By this way, the code behind the cameras and applications start to replace with the human eye. They assert that they can create a “perfect photograph” by combining “best” poses of people. Which moment does the final composite refer? I cannot answer this question easily. It is a combination of moments with respect to standards of algorithms.

### 3.3.3. Categorization of Errors

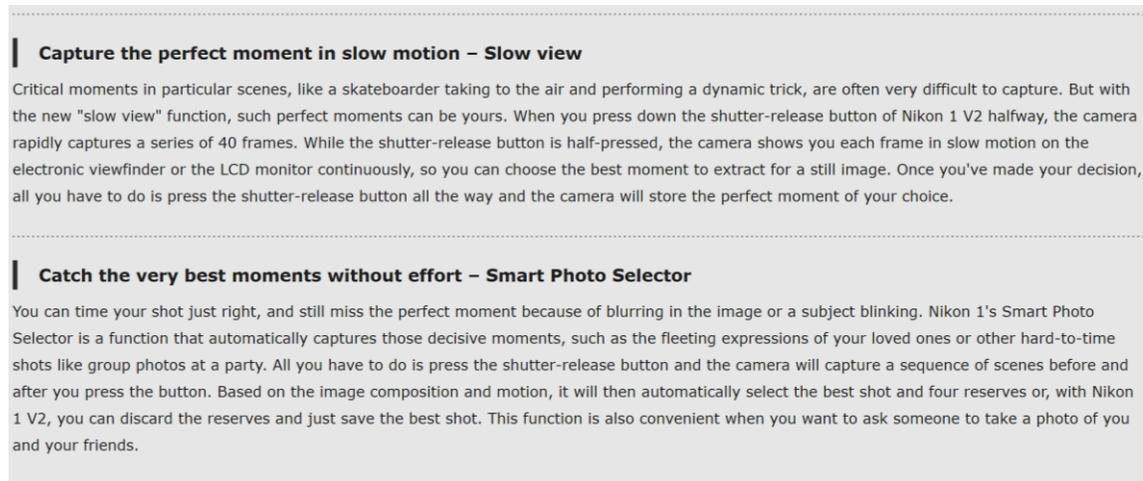
What an error is in photography depends on how it is defined according to the tools that we use to take photographs. To understand what they escape from, I look at the algorithms behind them. The exhibition “Failed”, which is full of imperfections of family albums, was an inspiration to pursue what is considered as an error in algorithms.

With the help of literature (Ch eroux, 2003; Godfrey, 2005), and the algorithms behind the automatic modes of digital cameras, the first category is born; which is technical errors. They are “transgressions of the dogma of the photography” such as wrong angle, temperature, framing, shutter speed or exposure (Ch eroux, 2003). The automatic modes of cameras come with a promise to prevent this type of errors by choosing the right temperature, shutter speed, exposure, and focus (Figure 17). The unfocused, blurry or wrong exposure photographs are prevented by them. These standards are also used as the primary criteria for other algorithms.



**Figure 17. Automatic mode is explained** (Retrieved from: <http://imaging.nikon.com/lineup/dslr/d5100/features04.htm>)

The second category is the category of timing errors. It is related to the algorithms behind multiple, continuous shooting, and *burst modes*. To be able to reach the “perfect moment” these modes enable the users to shoot many frames in a second. As exemplified from a manual in Figure 18, multiple shooting creates possibilities of “perfect moment”. Next big thing is the selection of it from possibilities. “Smart Photo Selector” decides that which one should be kept based upon technical standards and composition.



**Figure 18. “Perfect moment” selection from a manual of a camera** (Retrieved from <http://imaging.nikon.com/lineup/acil/bodies/v2/features01.htm>)

Another example for timing errors comes from the *burst mode* of cellphone cameras.

With this mode, a series of frames at a rate of 10 frames per second is captured. Then, a grey dot appears under the “perfect” one. That grey dot indicates best clarity, sharpness, and composition.

In one article of a magazine, *Tip of the Week: Get the Perfect Picture with Burst Mode*<sup>11</sup>, these modes and “perfect timing” are expressed in this way;

So instead of posing everyone or waiting for the "perfect" shot (that you end up missing by a second), play around with Burst Mode. Here is where a little bit of that magic comes in. You see that grey dot underneath the thumbnail picture for the collection. That is there because the Photo app's algorithms have determined that is the best picture of the bunch. This will be the photo where people's eyes aren't closed or the subjects aren't blurry or the picture was clearer than the others. It's kind of awesome.

All these tools are against the timing errors. Actually, they define the timing errors by selecting which moment should be preserved.

The last category is non-smile errors. It is a very interesting category that one expression is promoted while others are not. With the developments of face detection and smile detection algorithms, smile is promoted by camera modes and applications. *Smile shutter* is the first one for the formation of this category. It is a camera mode for digital cameras and cellphones that the photograph is automatically captured when a smile is detected (Figure 19). All the other smile-based algorithms such as editing tools for bigger smiles are important factors for this category. This categorization is figured in the Appendix A.

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<sup>11</sup> (Retrieved from: <https://www.forbes.com/sites/anthonykarcz/2016/02/26/ios-tip-burst-mode/#346e17d549c4>)



Smile not detected.  
No picture taken.



Smile Detected! Picture taken.

**Figure 19. Smile detection and capturing the frame by a *smile shutter*** (Retrieved from: <http://www.samys.com/p/US-Only-Shipping/DSC-H400/B/Cyber-shot-DSC-H400-Digital-Camera-Black/143976.html>)

## **CHAPTER 4**

### **THE PROJECT: FAILED**

#### **4.1. Artist Statement**

What makes a photograph erroneous or not depends on how an error is defined. Bearing in mind the idea of “perfect photographs” and the line between erroneous or not, I look at the family photographs taken after digitalization. They are victims of digital flawlessness because the photographer looks at the frame immediately and retakes or she/he already has already taken several versions of them and selects the best one. Thus, others are deleted, cannot survive. Moreover, applications and camera modes with pre-determined standards are the other possibilities. The codes behind the camera modes and applications have standards to determine the photograph.

My aim is questioning the elimination of errors in the family albums with the new developments in the cameras such as smile detection algorithms and auto-editing applications. Can the widespread usage of applications and smart cameras eliminate the

need for the human eye? The definition of a “perfect photograph” in the algorithms has a power on which images will be kept for the future. Thus, it affects how we remember by looking at images. Family photographs evoke memories and cause the narrations produced by images in a family.

To make everything so picture-perfect fits the beauty standards of our time, leaving no room for mistakes. Thus, the gestures and expressions are idealized or standardized. The algorithms tend to take the place of the human eye. Let us think of the opposite for a second, if a person looks at their family albums and cannot see any smiles, how would s/he remember her/his past? With these questions in my mind, I started to look at my family albums repeatedly. All the different facial expressions, gestures, uncontrolled movements, and imperfections add richness to the memory of the past and the family history. This richness resembles the human memory, which is also fallible and imperfections manifest itself from time to time (Schacter, 2001). The mistakes, failures, errors, different facial expressions, all this richness is the starting point in the practical side of this thesis, which is entitled “Failed”.

I have elaborated on the algorithms behind the cameras and applications and I encountered with the standards aiming for “perfect photographs”. The algorithms work with the pre-determined standards in the post-photography era and the final photograph is produced based on these standards. Errors and “perfect photographs” are coded in algorithms, there is a filtering process according to them, and errors are eliminated by those filters. Contrary to the elimination of errors, my artistic approach is collecting the photographs produced before these algorithms were placed in cameras, which could

include errors. If the algorithms would evaluate the analogue photographs in family albums, some of them, which included errors, could not survive. They have no value according to the algorithms in post-photography era. As shown in Figure 20, I give a family photograph from my own family album to the algorithm of *Microsoft Face API*<sup>12</sup> as an input. According to results, blur level is very high; it can be interpreted as a technical error. Just one of the faces are detected because of that the other faces do not look at the camera and the blurriness level. Additionally, the emotion is evaluated as neutral, which would be a non-smile error in the algorithms that promote “perfect photographs”. This photograph would not keep if it captured by the tools including these algorithms but it was from 1994 and captured by an analogue camera. It has value for us and we keep it in our album. My mother talks about how much I cried in these ages. I value this photograph as much as the photographs that are technically fine and that include smiles. It refers to a fragment in my memory. I think that it deserves to be kept in our album even though it has a lower score according to an algorithm.

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<sup>12</sup> It a service using powerful machine learning algorithms to provide application developers. It is retrieved from: <https://azure.microsoft.com/en-us/services/cognitive-services/face/?v=18.05>

← → ↻ Secure | <https://azure.microsoft.com/en-us/services/cognitive-services/face/?v=18.05>

Why Azure ▾ Solutions Products ▾ Documentation Pricing Training Marketplace ▾ Partners ▾ Support ▾ Blog More ▾

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},

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Image URL

**Figure 20. Analysis of an analogue family photograph according to an algorithm**

## 4.2. Related Artworks

### 4.2.1. *Odd One Out* by Caleb Cole

In his series *Odd One Out*, Caleb Cole who is an American visual and performing artist, uses found footage photographs from flea markets and he chooses to segregate one from the others by isolating the person from them by a field of white (Figure 21 and Figure 22). He works with vernacular photographs in this work, generally group shoots such as family gatherings, class portraits, and reunions. He has started in 2010 and he continues to add new members to this series.



**Figure 21.** *Odd One Out* by Caleb Cole



**Figure 22.** *Odd One Out* by Caleb Cole

He describes his artistic statement with the words “I select images of people who, unlike the rest of the smiling faces in the frame, bear looks of loneliness and longing that stop me in my tracks” (Retrieved May, 2018, from <http://calebcolephoto.com/odd-one-out--statement>). In every image, we are encountered with “abnormal” poses. The remaining people in photographs are the ones that catch the attention of Caleb Cole. We are encouraged to smile and have a right gesture such as everyone is facing the camera but for other emotions and poses cannot be accepted as good photographs, even if they are part of our natural moments of our life. He focuses on these very natural abnormalities in *Odd One Out*.

This work is very inspirational for my own project “Failed” because of highlighting of the odd faces or poses. I use the words “failed photographs” to describe a similar approach to Cole's work. My point is while all our emotions, expressions and gestures inherently exist; the images of these emotions cannot be acceptable and vanish over time. I also question the line between abnormal and normal.

#### **4.2.2. *Album Beauty* by Erik Kessels**

*Album Beauty* consists of found footage family photographs collected by Erik Kessels, who is a Dutch photographer, designer, and curator. Erik Kessels’s interest in this work is the imperfect side of family photographs. As a designer and art director whose working area is close to perfection, he is inspired by amateur images where people dare

to make mistakes. Erik Kessels states “Creativity, in general, doesn't come from perfection, it comes more from imperfection” (Retrieved May, 2018, from <https://www.fastcompany.com/3017076/what-old-family-photo-albums-teach-us-about-creativity#6>).

Erik Kessels is well known for his unorthodox choices for installations. The exhibition serves an experience that visitors can walk through the family album with installations of human-size photographs (Figure 23 and Figure 24).



**Figure 23. Exhibition shot of *Album Beauty* in FOAM Amsterdam**



**Figure 24. Exhibition shot of *Album Beauty* in FOAM Amsterdam II**

As Erik Kessels points out also in his books, *Wonder: Rejected Photos Rescued By* (Verschueren & Kessels, 2006), *Failed It!* (Kessels, 2016), he finds that today's family photography resembles a kind of propaganda. With the influence of digital editing possibilities and the nature of social media, family photographs are more public than ever before. Kessels expresses that family image is wanted to be perfect because, it like advertising for family (Retrieved May, 2018, from <https://www.fastcompany.com/3017076/what-old-family-photo-albums-teach-us-about-creativity#6>).

Besides his content, Erik Kessels's choices about the scale and installation of photographs are very clever moves to create an interesting exhibition. His installation choice is also inspiring for my own project. I also find that the imperfections are very

natural and human-specific and I search the underlying causes of the elimination of the imperfections. The important question is that; is there something lost in that perfection? Thanks to all the smart, user-friendly and accessible tools, photographing, editing or printing an image is so much easier compared with the analogue time, but these enhancements have an effect that many of our photographs start to look similar. It cannot be denied the technical side of the elimination of errors, but my approach is to figure out the other reasons for a desire to have photographs without any errors. Moreover, what is considered as an error is also an important issue to discuss.

## **4.2. Development Process of “FAILED”**

### **4.2.1. Collection of the Exhibition Materials**

In the beginning, while looking through my family albums, the errors that attracted me and touched me were my starting points and I followed this attraction. With the idea of the celebration of errors in the family albums, I preferred a more participative and interactive way rather than a single source project to create an exhibition from my own family archive. My solution was a combination of found-footage family photographs with my own family archive. Found footage is a general concept that changes with how the images are collected and where they are found. Collecting from flea markets or second-hand shops is one option. It can be also a single source work of art like a family album found by coincidence. Another possibility can be an online archive or open database. The way that I choose for my project is a more participative one. By

explaining my ideas and approach to the family albums about imperfections, I have tried to collect photographs from different people whose ages ranged from 20 and 30 years old. The reason for this choice about age is that their family albums correspond the “transition” between analogue snapshots and smartness of digitalization. What is more, it refers to the period of my own family album. I made a little announcement and got in contact with the volunteers whose albums are full of images from the same years with mine.

Thus and so, in an artistic way, my aim in the thesis project is to create a feeling of imperfections in the family photographs against the standards of new algorithms because it is those flaws that make us human and gives us character and narrative.

When the participants brought in their photographs, they started to tell me about the narratives automatically. This performance is a kind of externalizing family memory. Fortunately, there are errors that we could keep and we still possess the diversity, different layers, and attractiveness of errors as our memories (Figure 25 and Figure 26). As an example, the photograph in Figure 25 is from one of the participants, Melek Cerit. She told the story of why it is blurred. She was the one who took the photograph of her mother but she was 5 years old and had no idea about the usage of a camera. Even it is highly blurred, her mother kept it in their family album. She was grateful that mother kept that erroneous photograph.



**Figure 25. A failed family photograph (courtesy of Melek Cerit)**

In the Figure 26, the photograph is from another participant, Buket Bilgin. She brought this photograph of her brother and cousins as an erroneous photograph. Her brother and the youngest cousin were crying because they were forced to take photographs. This photograph reminds me a comment of a mother who used the “GroupShot” application to change the faces of her children with the smiling ones (Figure 11). With those applications, face recognition, or smile shutter, this photograph would probably be an erroneous photograph and needs to change or retaken.



**Figure 26. A failed family photograph (courtesy of Buket Bilgin)**

I have collected almost 200 “failed photographs” from 18 volunteers aged from 20-30 years old. The participants are Aybüke Balahun Çoban, Batuhan Tezcan, Bengisu Büyükkız, Buket Bilgin, Cihan Akdeniz, Emre Kağan Ayaz, Esra Can Gülsat, Gülper Alp, Güz Eylem Çakın, İlknur Genç, Melek Cerit, Mert Dereli, Merve Sivil, Nisan Aktürk, Sedef Beşkardeşler, Tanya Varer, Tuğçe Güdük, and Ümit Bulut. The photographs that they brought are given in the Appendix B. They shared their family photographs that include errors and shared their feelings and narratives according to them.

#### 4.2.2. “Failed Family Photographs”

I thought that categorization could be helpful to understand and define the errors in family photographs. For the categorization of errors in family photographs, the critical literature of photography (Batchen, 2000; Chéroux, 2003; Kotchemidova, 2000; Kuhn, 1995) is used together with the literature on visual technologies (Olszanowski, Pochwatko, Grzegorz; , Kuklinski, Krzysztof; Scibor-Rylski, Peter, & Rafal K, 2015; Shah & Kwatra, 2012; Stoney, 2016; Szeliski, 2010). Besides, I checked the manuals, advertisements, codes of the applications and camera modes. After understanding how an error is defined in algorithms, how they vanish away in current family photographs is more accessible. All of these refers to the photographs after digitalization. What we have had in the family albums before the digital cameras and applications is no algorithmic filter and elimination. We can see that how the errors are kept in the albums. According to the algorithms in new tools, they would be low-scored photographs.

Many photographs that I encountered while collecting would be erroneous according to the technical errors of algorithms. Additionally, in the literature, like Chéroux describes “photographic error” in his book *Fautographie*, technical malfunctions, accidents, a wrong angle, framing, focus, shutter speed or exposure, a distorted or unusual use of shadows are the transgressions of the dogma of the photography (Chéroux, 2003). Figure 27 is the photograph that one of the participants brought. It is an example of technical errors but it could survive because it was shot before digitalization. It has a value according to owners but according to algorithms, the value would be lower.



**Figure 27. A photograph from exhibition that includes technical errors; high blurriness (courtesy of Melek Cerit)**

The photograph shown in Figure 28 coincides with the timing errors that are described by the algorithms used in multi-shooting, continuous shooting, and *burst modes*. The owner of the photograph, Güz Eylem Çakın told the story about it when she brought it. She expressed how their dog Merlin jumped to the frame at the last moment, but her mother has already captured. Then, she expressed her feelings about the dog. The narratives came in company with the error.



**Figure 28. An example of timing errors (courtesy of Güz Eylem Çakın)**

Another photograph from the exhibition is in Figure 29 from my own family album. While capturing it, in the last moment, my mother's hand entered to the frame to hold me. New modes of cameras with multiple shooting try to prevent this kind of errors while serving many shoots from a moment and indicating the best composition.



**Figure 29. An example of timing errors from my own family album**

The last category is the non-smile errors and it is a very important part of my research. Especially, facial expressions are strongly related to the latest developments in the cameras. Face recognition algorithms and then smile detection algorithms are added to cameras. Firstly, fully visible faces are preferred and then smiley faces are promoted (Shah & Kwatra, 2012).

Anger, contempt, disgust, fear, happiness, neutral, sadness, and surprise are describable and are studied by software scholars. Smile recognition open source codes in GitHub and API's such as Microsoft FACE<sup>13</sup> have become very trendy in recent years. Even though these eight emotions can be easily identified by these opportunities, cameras and

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<sup>13</sup> A cloud-based service to detect faces and set of emotions created by Microsoft. Detection of the number of faces, the positions of them and then the degree of emotions, which is 0 to 1, are supplied by the software for an image. (Retrieved January, 2018, from <https://azure.microsoft.com/en-us/services/cognitive-services/emotion/>)

applications are programmed based on one emotion; happy. This smile-based approach ends up with the standardization and decreases the diversity of facial expressions in the images. Before the smile-based algorithm such as *smile shutter* or other opportunities, it is easy to see the diversity in the facial expressions in family photographs. In the project “Failed” there are many examples coinciding with “non-smile errors” like in Figure 30. All of them refer to a feeling for their owners and I think that all of them has a value.



**Figure 30. Examples of non-smile errors from the analogue family albums**

Some erroneous photographs fall at the intersection of two categories or stay out of the categories. Nevertheless, it provides insight about the errors in family albums. Saving mistakes and failures is also a consequence of the analogue process. The shots cannot be seen before printing and every shot has a value. Accepting errors has a different meaning more than technical aspects. Enhancements in cameras and algorithms behind the camera modes tend to desire of a “perfect photograph” and an idealization; the approach of our era. This idealization shapes our perception. After a point, these algorithms and the idea of “perfect photograph” suppress our eye. The famous quotation which is stated by John Culkin in *A schoolman’s Guide to Marshall McLuhan*, " We shape our tools and, thereafter, they shape us "(Culkin, 1967) is a good summary about the effects of

tools on the context. The new features added to cameras start to become default and dominate the images that will be kept for the future.

The imperfect photographs could take part in family albums in spite of the fact that their perfect versions are also there. In the same album, the erroneous one and perfect version of it can be seen. Both of them are preserved in the physical family albums. Some participants brought them together (Figure 31).



**Figure 31. Saving erroneous one and the perfect version of it (courtesy of Sedef Beşkardeşler)**

This one is also another layer of the research. They own the correct version of that image but they also keep the failed one. Is it possible that our eyes are educated and put out of action, the new algorithms suppress our eye and can our attitude to the acceptance of all the errors in the images be changed? The photographs from the exhibition “Failed” are erroneous photographs with respect to today’s algorithms in cameras. They cannot meet the standards of new tools. They can survive because they are not subject to them.

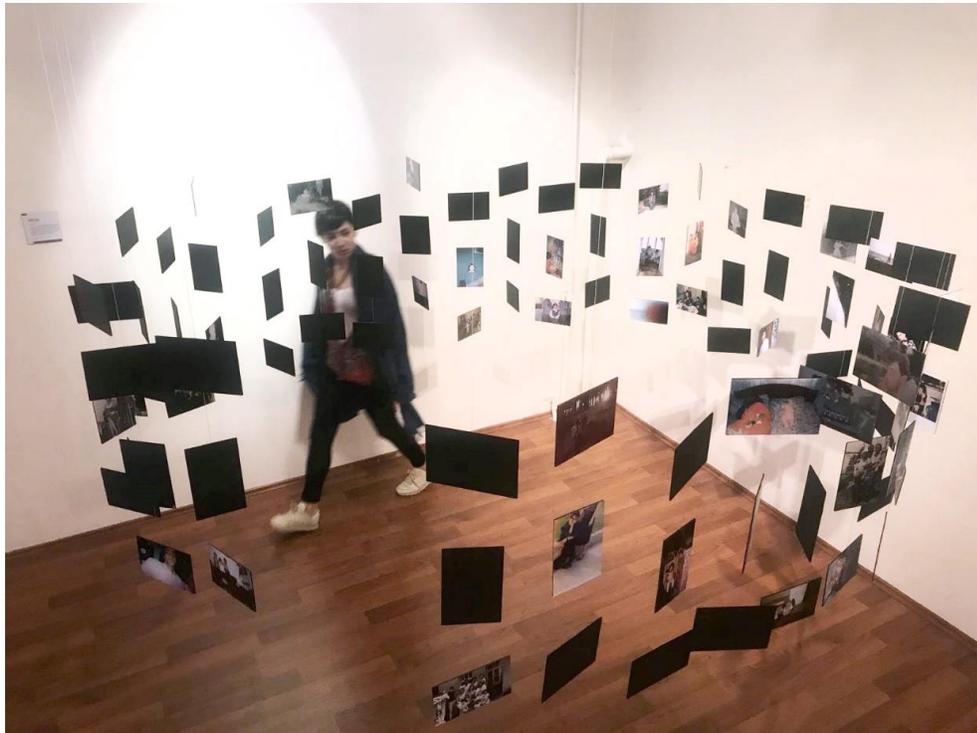
### **4.2.3. Exhibition Design**

Family photographs generally come into existence in a standard format and we are used to seeing them in hand-size scale in the albums or boxes. Physical existence, tangibility, and interactivity are the important keys that I lay stress on while deciding on the format of the exhibition. In the analogue period of the photography, the family albums were tangible and in countable numbers. With the digitalization, the number of photographs exponentially increases and archive moved to cloud storage links or external memories. Therefore, the physical appearance of family photographs starts to decrease. On the other side, new technologies give us plenty of possibilities for storing and printing.

My approach is that all the collected photographs are worth playing a part in the exhibition. With this intention, creating a space with all these errors is an outstanding solution. Hanging all these imperfect photographs from the ceiling in a circular way creates a space that people can walk through them and interact with them (Figure 32, Figure 33 and Figure 34).



**Figure 32. Exhibition area**



**Figure 33. Visitors in the exhibition area**



**Figure 34. A detail from “FAILED”**

In spite of all the photographs belong to different albums; visitors could connect a relation to their own albums because of the repetitions of the same poses and errors. Some of them are the clichés of the family photographs. Nevertheless, these clichés turn to a special space for looking our past how we record and remember them with all imperfections.

What is perfect or imperfect is also changeable in terms of photographic image. Sontag underlines the recycling meanings of photographs, which change the distinction between beautiful and ugly (Sontag, 1977:137),

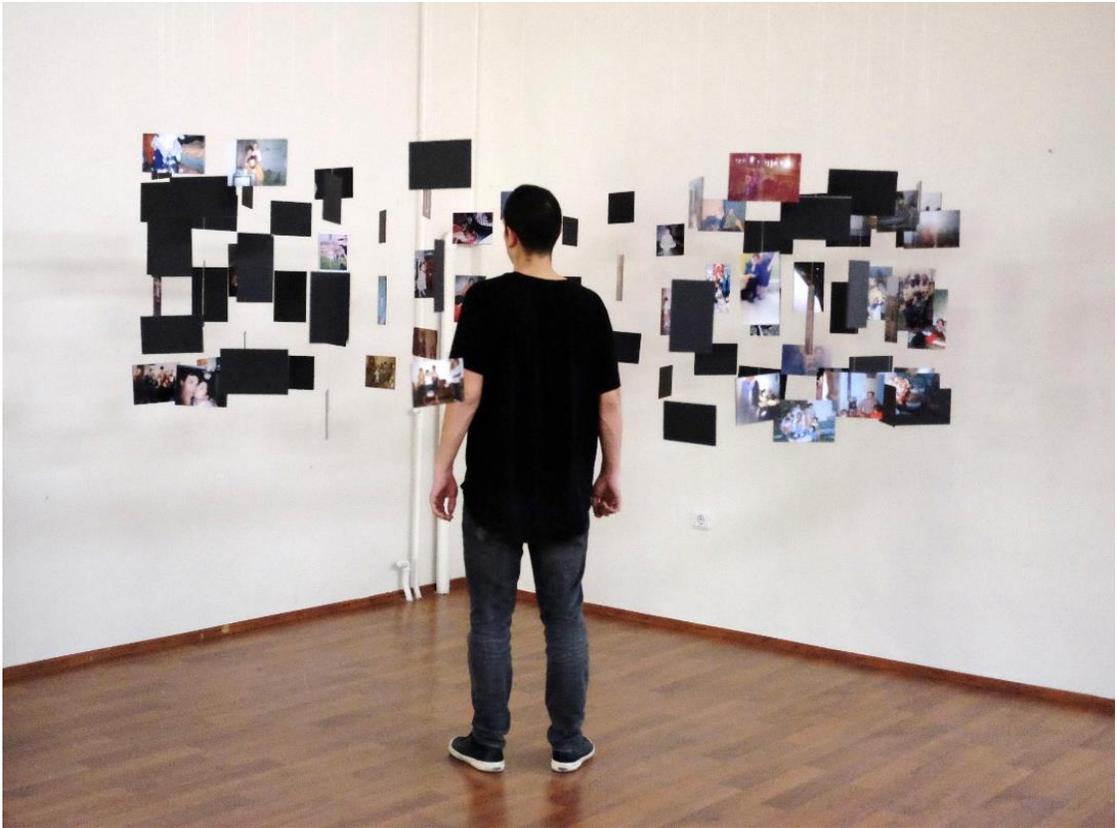
What makes something interesting is that it can be seen to be like, or analogous to, something else. There is an art and there are fashions of seeing things in order to make them interesting; and to supply this art, these fashions, there is a steady recycling of the artifacts and tastes of the past. Clichés, recycled, become meta-

clichés. The photographic recycling makes clichés out of unique objects, distinctive and vivid artifacts out of clichés.

Designing this exhibition was about creating a space for the celebration of errors and evoking memories. With people could enter the inside of the circle, touch the photographs, and look at them; it creates more interactions. Additionally, the photographs were one-sided and with the people walking around, images started turning, come in and out of sight (Figure 35 and Figure 36). We can interpret these glimpses like a memory.



**Figure 35. Visitor's interaction in the exhibition**



**Figure 36. Visitors in the exhibition**

## CHAPTER 5

### CONCLUSION

From the beginning of the journey, all the errors gave me a great inspiration for my thesis. Erik Kessels, who is a Dutch artist, designer, and curator with a particular interest in failures in photography and writer of “Failed It!”, gave me the courage to chase up the errors, which are described as “transgressions of the dogma of the photography”. Firstly, I was attracted by the errors in my own family albums. All of them were like stumbling blocks that keep narratives with them in my memory. Then I was surprised with the participants that answered my call for collecting erroneous family photographs. When volunteers brought their photographs, their (hi)stories came together with them. Their albums were from the same period with mine, from 1990 to 2005. They have experienced the analogue time of family albums with the tangible existences. They have also lived through the *transition* between the analogue time of family albums and digitalization of them. They have experienced starting and becoming widespread usage of digital cameras, automatic modes of cameras like *smile shutter*, cellphone cameras, application for shooting and editing photographs in smartphones. The exhibition

“Failed” was an important inspiration for focusing on errors with respect to algorithms and categorization of them.

The categorization of errors is made according to the algorithms used in cameras, critical literature of photography and researches in visual technologies. They are defined as technical errors, timing errors and non-smile errors. Technical errors are the most common and cliché errors that I have encountered in both literatures such as unfocused or highly exposure photographs. Besides, in the exhibition “Failed”, which is a participant-based photography installation, technical errors are frequently there. The definition for technical errors is “transgressions of the dogma of the photography” such as wrong framing or exposure blur of unfocused photographs.

The second category is timing errors. It is tried to be prevented with *burst mode*, which is an automatic mode for cellphone cameras to have multiple options for perfect timing or continuous shooting for cameras. The examples of timing errors can be an unintended hand in the frame or a dog jumps into the frame while shooting or a face that not looking at the camera. These timing errors are very common in the analogue time of family albums as I encounter while designing the exhibition.

The third and last category is non-smile errors, which I am most passionate. In the algorithms for visual technologies, the face detection and emotion detection are easily done but one expression is promoted, which is unsurprisingly, smiling. First one and most common one is *smile shutter*. It was first added to the cameras in 2007 by Sony, but nowadays it is a usual feature for all cellphone cameras. The algorithms developed

make it much easier to change any expression with the smiley faces. The applications, which are very easy to use, serve editing photographs by changing the expressions with smiling ones or bigger smiles with the promise of “perfect photographs”. When I look at the algorithms closer, I encounter with the pre-determined standards to reach “perfect photographs”. The perfectness is coded related with the technical standards such as focus or exposure, right timing and degree of smile.

The technical errors are easy to prevent by automatic modes by arranging right exposure or focus on faces detected. Multiple shooting or *burst mode* are developed for avoiding timing errors. Face detection and emotion detection are used to promote smiling faces in the photographs. The other expression rather than the smile is not accepted as good photographs by these algorithms. I found this exploration very interesting but also frightening. The features or modes added to the tools are based on the errorless photographs. They serve “perfect photographs”. Actually, perfectness is a huge description as well as it is rather objective. At this juncture, the pre-determined standards for “perfect photographs” are very important. These pre-determined standards, which describe the “perfect photograph”, drive us to an idealization and standardization.

If the tools are designed to serve “perfect photographs”, described as technically fine, with perfect timing and bigger smiles as much as possible, is it carry us to the standardization? These pre-determined standards in the tools could suppress our eye. All these algorithms are designed to be very user-friendly with aiming amateur photographers. Through this study, the amateur photographers, the creators of family albums are considered. They are part of vernacular photography, which is defined as

non-art photography or everyday photography. They are a considerable part of photography production. I realized that my memory starts with the photographs in my own family albums fragmentarily. The narrations based upon family albums through family chain are interweaved to my remembrance. Like Kuhn says, the narrations in company with family photographs are critical for making ourselves (Kuhn, 1995). I realized that the big part of my memory is constructed as she says. In this point, I am greatly thankful for all the errors that we have able to keep in our own family albums. They give a diversification of feeling, moments, narratives and, of course, remembrance. The standards in algorithms define them as errors and try to prevent them but I admit the errors as diversification.

This study has an open-ended nature because new cameras and applications come to stage with the promise of “perfect photographs” every day. How they define “perfect” designates the photographic culture. Further researches after this study can be done in data analysis of family photographs according to standards in these tools. The advances in the field of image technology can be used to understand the changes of the new standards in family albums. I hope to continue and explore the connection between the developments in tools and their effects on family albums.

I want to conclude my thesis by quoting Bram Ieven, who writes on Vilém Flusser's media theory, “Freedom is here not understood as something independent from apparatuses, but as the ability to rule the apparatuses instead of letting the apparatuses rule us.” (Ieven, 2003:6).

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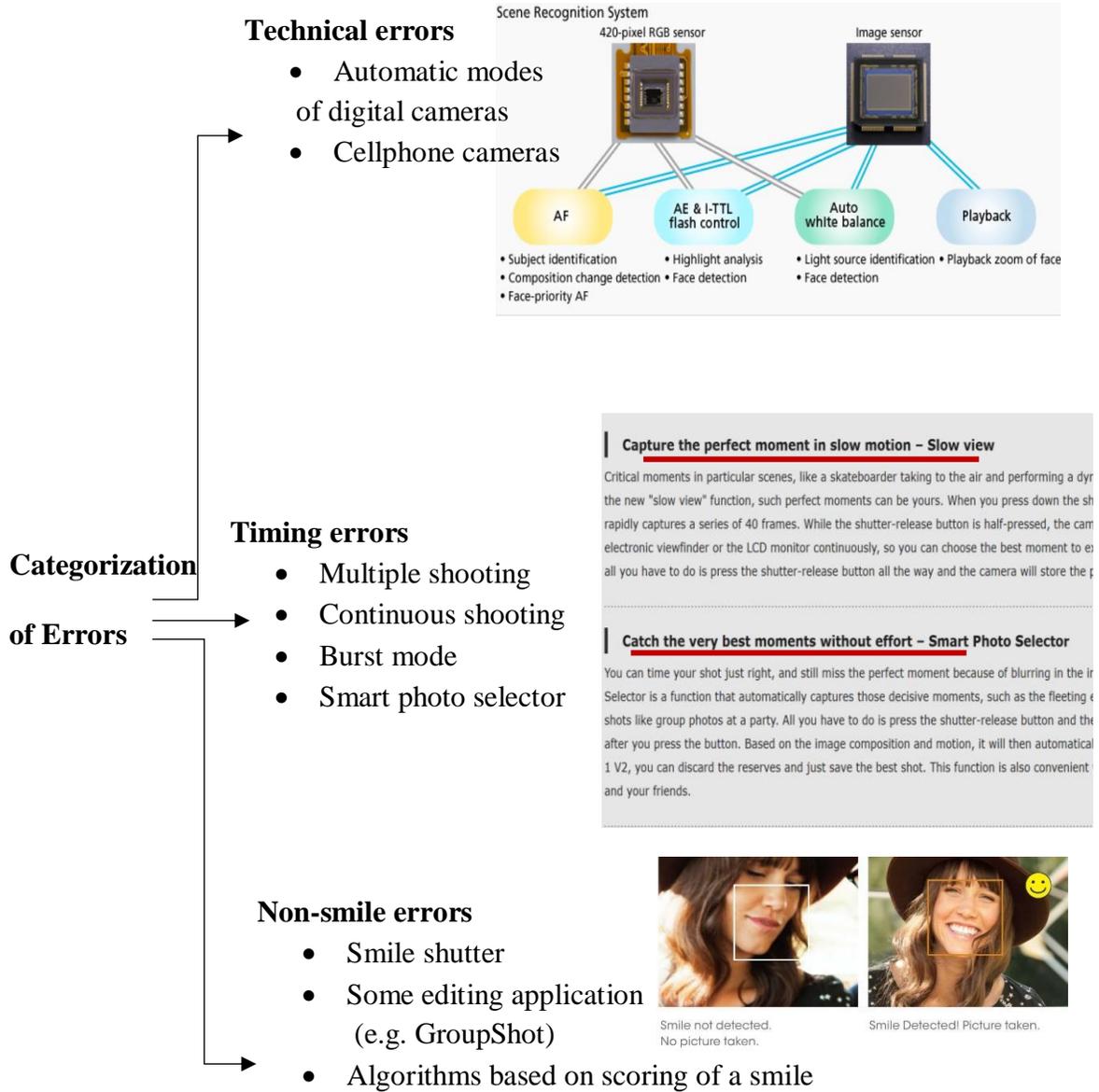
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# APPENDICES

## Appendix A

### Categorization of errors according to the algorithms



## Appendix B

### Participants' photographs in "Failed"



Ümit Bulut (1).jpg



Ümit Bulut (4).jpg

Ümit Bulut (2).jpg



Ümit Bulut (5).jpg

Ümit Bulut (3).jpg



Ümit Bulut (6).jpg



Ümit Bulut (7).jpg



Ümit Bulut (8).jpg



Ümit Bulut (9).jpg



İlknur Genç (1).jpg



İlknur Genç (2).jpg



İlknur Genç (3).jpg



İlknur Genç (4).jpg



İlknur Genç (5).jpg



İlknur Genç (6).jpg



İlknur Genç (7).jpg



Aybüke Balahun Çoban (1).jpg



Aybüke Balahun Çoban (2).jpg



Aybüke Balahun Çoban (3).jpg



Aybüke Balahun Çoban (4).jpg



Aybüke Balahun Çoban (5).jpg



Aybüke Balahun Çoban (6).jpg



Batuhan Tezcan (1).jpeg



Batuhan Tezcan (2).jpeg



Batuhan Tezcan (3).jpeg



Batuhan Tezcan (4).jpeg



Bengisu Büyükikiz (1).jpeg



Bengisu Büyükikiz (10).jpeg



Bengisu Büyükikiz (11).jpeg



Bengisu Büyükikiz (2).jpeg



Bengisu Büyükikiz (3).jpeg



Bengisu Büyükikiz (4).jpeg



Bengisu Büyükikiz (5).jpeg



Bengisu Büyükikiz (6).jpeg



Bengisu Büyükikiz (7).jpeg



Bengisu Büyükikiz (8).jpeg



Bengisu Büyükikiz (9).jpeg



Buket Bilgin.jpeg



Cihan Akdeniz.jpg



Emre Kağan Ayaz (1).jpg



Emre Kağan Ayaz (2).jpg



Esra Can Gülsat.jpg



Gülper Alp.jpeg



Güz Eylem Çakın (1).jpg



Güz Eylem Çakın (2).jpg



Güz Eylem Çakın (3).jpg



Melek Cerit (1).jpg



Melek Cerit (10).jpg



Melek Cerit (11).jpg



Melek Cerit (12).jpg



Melek Cerit (13).jpg



Melek Cerit (14).jpg



Melek Cerit (2).jpg



Melek Cerit (3).jpg



Melek Cerit (4).jpg



Melek Cerit (5).jpg



Melek Cerit (6).jpg



Melek Cerit (7).jpg



Melek Cerit (8).jpg



Melek Cerit (9).jpg



Mert Dereli (1).jpg



Mert Dereli (2).jpg



Mert Dereli (3).jpg



Mert Dereli (4).jpg



Merve Sivil (1).jpeg



Merve Sivil (2).jpeg



Naile Kaş (1).jpg



Naile Kaş (10).jpg



Naile Kaş (11).jpg



Naile Kaş (12).jpg



Naile Kaş (13).jpg



Naile Kaş (14).jpg



Naile Kaş (15).jpg



Naile Kaş (16).jpg



Naile Kaş (17).jpg



Naile Kaş (18).jpg



Naile Kaş (19).jpg



Naile Kaş (2).jpg



Naile Kaş (20).jpg



Naile Kaş (21).jpg



Naile Kaş (22).jpg



Naile Kaş (23).jpg



Naile Kaş (24).jpg



Naile Kaş (25).jpg



Naile Kaş (26).jpg



Naile Kaş (27).jpg



Naile Kaş (28).jpg



Naile Kaş (29).jpg



Naile Kaş (3).jpg



Naile Kaş (30).jpg



Naile Kaş (31).jpg



Naile Kaş (32).jpg



Naile Kaş (4).jpg



Naile Kaş (5).jpg



Naile Kaş (6).jpg



Naile Kaş (7).jpg



Naile Kaş (8).jpg



Nisan Aktürk (1).jpg



Nisan Aktürk (10).jpg



Nisan Aktürk (11).jpg



Nisan Aktürk (12).jpg



Nisan Aktürk (13).jpg



Nisan Aktürk (14).jpg



Nisan Aktürk (15).jpg



Nisan Aktürk (16).jpg



Nisan Aktürk (17).jpg



Nisan Aktürk (18).jpg



Nisan Aktürk (19).jpg



Nisan Aktürk (2).jpg



Nisan Aktürk (20).jpg



Nisan Aktürk (21).jpg



Nisan Aktürk (22).jpg



Nisan Aktürk (23).jpg



Nisan Aktürk (24).jpg



Nisan Aktürk (25).jpg



Nisan Aktürk (26).jpg



Nisan Aktürk (27).jpg



Nisan Aktürk (28).jpg



Nisan Aktürk (29).jpg



Nisan Aktürk (3).jpg



Nisan Aktürk (30).jpg



Nisan Aktürk (31).jpg



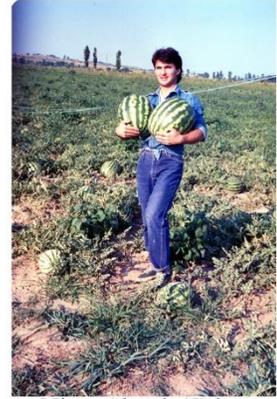
Nisan Aktürk (32).jpg



Nisan Aktürk (33).jpg



Nisan Aktürk (4).jpg



Nisan Aktürk (5).jpg



Nisan Aktürk (6).jpg



Nisan Aktürk (7).jpg



Nisan Aktürk (8).jpg



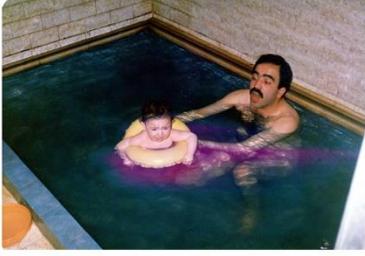
Nisan Aktürk (9).jpg



Sedef Beşkardeşler (1).jpg



Sedef Beşkardeşler (10).jpg



Sedef Beşkardeşler (11).jpg



Sedef Beşkardeşler (2).jpg



Sedef Beşkardeşler (3).jpg



Sedef Beşkardeşler (4).jpg



Sedef Beşkardeşler (5).jpg



Sedef Beşkardeşler (6).jpg



Sedef Beşkardeşler (7).jpg



Sedef Beşkardeşler (8).jpg



Sedef Beşkardeşler (9).jpg



Tanya Varer (1).png



Tanya Varer (2).png



Tanya Varer (3).png



Tanya Varer (4).png



Tanya Varer (5).png



Tanya Varer (6).png



Tuğçe Güdük (2).jpg



Tuğçe Güdük (3).jpg



Tuğçe Güdük (1).jpg



Tuğçe Güdük (10).jpg



Tuğçe Güdük (11).jpg



Tuğçe Güdük (12).jpg



Tuğçe Güdük (13).jpg



Tuğçe Güdük (2).jpg



Tuğçe Güdük (3).jpg



Tuğçe Gdk (4).jpg



Tuğçe Gdk (5).jpg



Tuğçe Gdk (6).jpg



Tuğçe Gdk (7).jpg



Tuğçe Gdk (8).jpg



Tuğçe Gdk (9).jpg



Tuğçe Gdk.jpg

