

DEGREE PROJECT
EXPERIMENTAL ANIMATION

Submitted in partial fulfillment of the requirements of the degree of

Master of Design, Animation

By

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Guide:
Prof. Nina Sabnani



Animation and Film Design
Industrial Design Centre

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY
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Declaration

I declare that this written submission represents the work done by me, summarized in my own words. Wherever other images and texts have been included, they have been adequately referred to their original sources.

I also declare that I have adhered to all principles of academic honesty and integrity and I have not fabricated or falsified any of the data/ facts/ contents in my submission.

I understand that any violation of the above-mentioned will be cause for disciplinary action by the Institute and also evoke penal action from the sources that have not been properly cited, or from whom proper permission has not been sought.

Signature: 

Name: Udbhav Jain

Roll No: 156340011

Date: 27/06/2017

APPROVAL

The Report committee for Animation design, Industrial Design Centre, IIT Bombay Certifies that this is approval version of following report on

EXPERIMENTAL ANIMATION

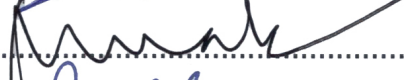
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ACKNOWLEDGEMENT

I would like to sincerely express my gratitude to my guide Prof. Nina Sabnani for giving me her invaluable guidance and support throughout the project, without which the development of the project would not have gone so smoothly.

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I am also grateful to all my batchmates and seniors at IDC for their encouragement and support.

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ABSTRACT

This report is intended to exhibit the documentation and exploration of the P2 project in all its extended pathways throughout the semester. The pathway includes the initial processes of research and explorations and their analysis towards the final style/technique that shall be carried out further in the next semester.

The P2/P3 topic of ‘Experimental Animation in this report is treated more as an academic research topic for the individual rather than a genre of animation. In consideration of this, the basic aim of the project is to study the different aspects of the medium and use that to experiment on various levels (mediums, media and style) in the final project.

All the trials and study have been done keeping these practicalities in mind.

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INTRODUCTION

Experimental Animation as a keyword is a new age genre of animation as compared with the already existing ones i.e. 2D, 3D, Traditional, stop motion and Motion graphics. By definition it refers to any animation which employs methodology different from the traditional/well established ones. Actually, there are no defined peripheries of the genre as it largely depends on the idea and the way of implementation. Experimental animation can use a new method entirely or use the existing ones in a different light. That makes experimental animation a genre of negation, such that whatever doesn't fall in any other category falls here. Even the traditional techniques ones were experimental when they were first tried out and many of the established experimental techniques have now become too common.

As a genre or a field Experimental Animation spreads in a far wider area that one can cover as an academic project. My motive for the project was to study as many experimental techniques as the semester time would allow me and see in what ways I can modify and/or hybridize and see if in that way the combined style could emerge as something new.

DATA COLLECTION

Since as a genre itself the topic is so spread so vastly and in such un-organized manner that a proper research was required. The research for the topic was intended towards the better understanding of the topic and also to understand the extent of the term 'experimental' and in how many ways can an animation could be experimental.

My research for the topic included studying the references in the following categories:

- **Videos:** The video research included watching various short films related to the genre, to better understand the kind of experimentations that can be done. Some of these included classic works of Oscar Fischinger, Jordon belson, James whitney, Larry Cuba, Norman McLaren and some modern works of Caleb wood, PES etc.

Some movies include Waking life, Sita sings the blues, Tatami galaxy, Melancholy of Haruhi suzumia, Millenium actress. All these movies had different experimentations in narrative structure.
- **Literature:** Some fiction books were also read to understand the experimentations in the flow of narrative, which includes *Einstein's dreams (Alan Lightman)*, *If on a winter's night a Traveller (Italo Calvino)*, *Slaughterhouse 5 (Kurt Vonnegut)* and *God's debris (Scott Adams)*.
- **Research Papers:** Some research paper that I read were *Content and Meaning in Abstract Animation (Pamela Taylor Turner Assistant Professor, Kinetic Imaging Communication Arts and Design Virginia Commonwealth University)* and *The American Pioneers of Abstract Animation*. They gave some idea in the history and structure of early experimental animation.

ANALYSIS AND STRUCTURIZATION

During the research I found out that there is no well established structure for the genre of Experimental animation. The data is varied and spread unevenly. So the next step for me was to structurize the data that I could gather so as to better understand the topic and analyse it better.

I divided my structurization for the topic in two parts, mainly 'Chronological history' and 'Categorization'.

CHRONOLOGICAL HISTORY^[1]

Experimental Film making started in Europe with the avant-garde revolution where film makers were using matured cinema as a counterattack on mass entertainment genre. Later it moved to American cinema around world war 2.

Early explorations of Experimental animation came around 1930 when some film-makers, painters and commercial artists started experimenting with various mediums in animation with a motive for aesthetic and emotional approach. The approach here was to use animated visuals in a way to evoke certain sense or emotion without necessarily with a narrative.

Some primary forefathers of abstract animation includes **Oskar Fischinger, Jordan Belson and Harry Smith**. Their initial works included experimenting with forms and shapes as an analogue to music and to create an absolute language.

Later this moved to experimentation with styles, methods and materials to tell narratives.

CATEGORIZATION

With the data collection I categorized the genre as following.

- Based on structure
 - Non-narrative (abstract)
 - Narrative
 - Interactive
- Based on medium

Based on structure

- Non-narrative^[1]

Abstract animation is one of the earliest tried experimentations. It started after world war 2, when artists and filmmakers considered the need to evoke intricate emotions or give visual aesthetics to sound. For this they employed imagery completely liberated from icon and symbol, and utilized instead form, light, color, movement and time. Some of them followed a drive, an impulse, or a line of visual, and sometimes even an urge for mystical, exploration. One other reason was also to represent new emerging theories of relativity, archetypes and the unconscious.

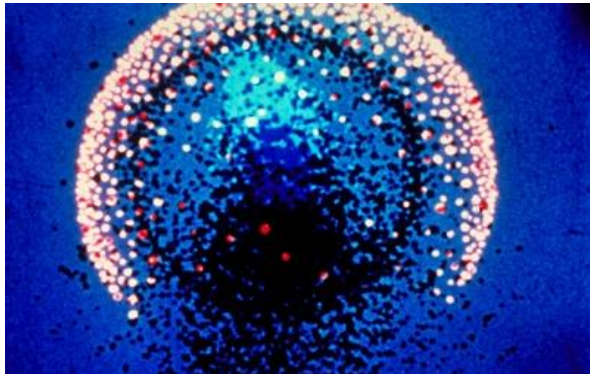
Notable Examples

1. An Optical Poem (1938) by Oskar Fischinger



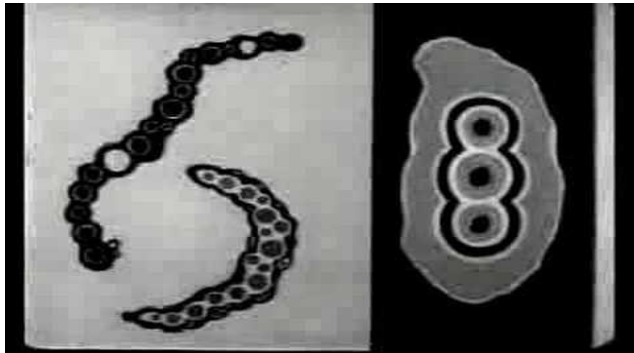
Hundreds of cutouts animated to sync with Franz Liszt's "2nd Hungarian Rhapsody."

2. Yantra - James Whitney (1957)



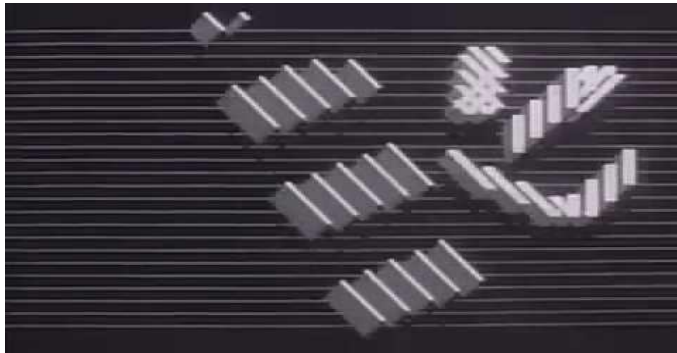
Produced entirely by hand-punching grid patterns in 5" by 7" cards with a pin, and painting through these pinholes onto other 5" x 7" cards, to create images of rich complexity

3 Len Lye – Tusulva



Imagines the beginning of life on earth, as single-cell creatures evolve into species with distinct identities.

4. Calculated Movements by Larry Cuba



Example of early video art using software developed. The video has a minimalist/ambient original sound piece.

- Narrative

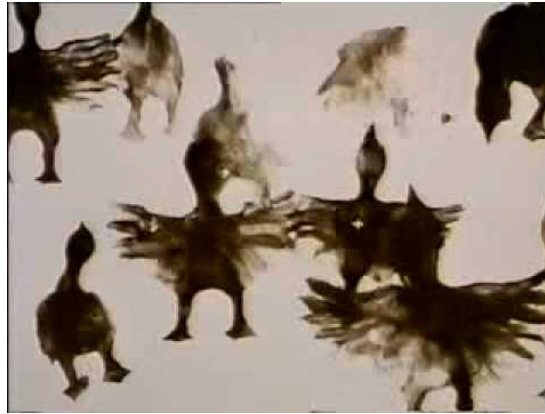
Experimentation on narrative can be on form, style and /or technique. Experimentation on form implies using traditional methods differently. Experimentation in style includes non linear ways of storytelling, for eg. metafiction, perspective storytelling etc. Experimentation on technique refers to how the use of different mediums can be used to advance the narrative.

Notable Animators

1. Norman McLaren-one of the pioneers in experimental animation. Known for his highly innovative technical experiments and perfect binding on narrative. Narrative examples include Neighbors, A chairy tale, Pas de deux etc



2. Caroline Leaf- Caroline Leaf (born August 12, 1946 in Seattle, Washington) is a Canadian-American filmmaker, animator, director, producer, and tutor. She has produced numerous short animated films and her work has been recognized worldwide. She created the sand animation and paint-on-glass animation techniques. Her works include *The Owl Who Married a Goose*, *The Street* etc.



3. Paul Driessen-His experimentation is in both in form and style. Driessen's unique style can be easily recognised by the delicate quality of his ever-moving and wiggling lines, as well as by the fluid but awkward movements of his characters. His storytelling sometimes splits up the screen into three or even six different parts, with all actions nicely woven into each other. Notable examples include *3 misses*, *Spiegeleiland*, *Home on the rails* etc.



4. Jan Svankmajer- He incorporated abstractive experimentations in narrative. Examples include Dimensions of dialogue, Lunch, Dark and light.



- Interactive:

They may be Input based which may need input of some kind to continue, either from audience or data and will deliver output accordingly.

I came across this animation, Metaville^[2] which was interactive in nature. Contained within a life-size version of the familiar childhood board game Operation, everytime user made a mistake, the animation would be shown progressing. In this way it explored loss and memory.

Other type is Output or media based using different kinds of media or mix media may it be Virtual reality, puppetry or Kawad storytelling etc

EARLY IDEA EXPLORATIONS

- Experimentations on different narrative explorations through the use of abstract imagery
- To work on an interactive system in advancing an animation, either on a narrative basis or output basis
- Exploring different mediums to create a mix medium animation in conjunction of metafiction
- Some themes-Psychology of people and how they interact, narratives experimentations (in style i.e epistolary, non linear etc, mediums and media), performance or expressive arts.

TECHNIQUE EXPLORATIONS

Some technique explorations were done in the later part of the semester in order to understand the different experimental techniques better and to use that knowledge in deciding my own style. Following is the brief discussions about each one of them

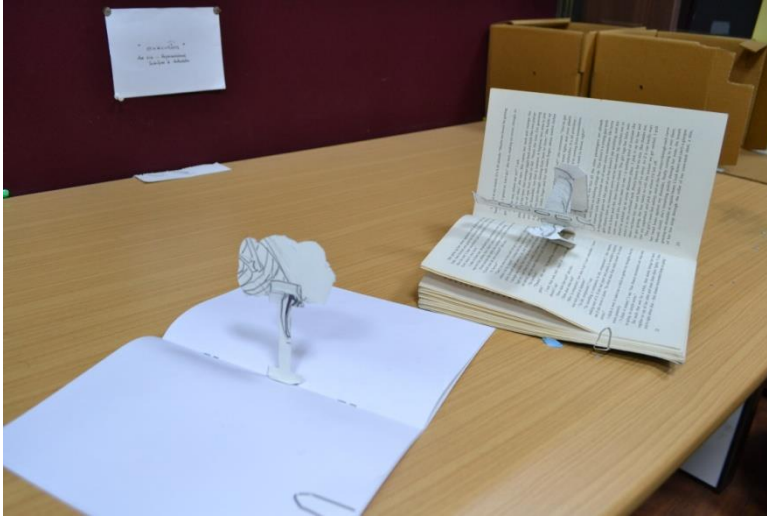
1. Paint on glass

I tried a basic mono color trial on paint on glass of a very short sequence.



2. Popup Book Animation

This style was inspired from the concept of Popup books. A sequence was animated by using subsequent popups and running them with each page flip. It gave a staccato feel to the animation. Clips, blue tac and other tactics were employed to incorporate page flipping.



3. Using Magnetic Sheet

Magnetic sheet was cut into different forms and was use to move and animate small iron particles. The magnetic sheet parts were placed in the background (behind the screen) while the iron particles were in the foreground.



4. Dadaism style

This experimentation was more on style rather than the technique. Inspired from the Dadaism style of pop art, the similar element/s (buildings, plane) were constantly being transformed into one another. In this way every element was constantly changing with the animation. This style gave an entirely different aesthetic feel.



5. Pixilation with juxtaposition of elements^[3]

Basic pixilation technique was employed with modification of certain elements. Some elements were combined while others were replaced.



6. 2D Light Extrusion^[4]

This technique included employing the extrusion process whereby a particular shape was shown through a strip in a short time and this sequence on a screen was passed through and clicked by a camera with the same setting as used for light animation. The final result was a 2d image formation in 3D space. A sequence of these images was used for animation.



7. 3D Extrusion^[4]

The technique of 3D extrusion is quite different from the 2D one. In this technique the 3D image was divided into many sub images of sliced parts and these 2D sliced parts were projected on a screen rapidly one after the other and shot continuously with a zero aperture camera (as employed in light animation). The final result was a 3D image in open space. A sequence of these images was used for animation.



8. Viscous liquids in water^[3]

Different viscous liquids were mixed with water and the motion was observed. We tried adding a piece of poetry and music to the animation to see if we can add a rhythm to something as uncontrollable as ink.



9. Light animation^[3]

Some basic light animations was carried out in the same module and studied under the same module .



10. Projection animation^[3]

A digitally created animated sequence was projected on a screen and a live action sequence was carried out together with that sequence.



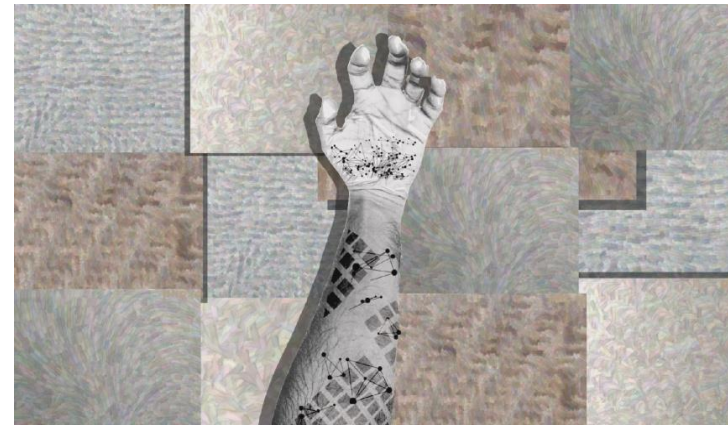
11. Rotoscopy^[3]

A live video sequence selected which was rotoscoped using different techniques, sketching, paper cutouts etc.



12. Video juxtaposition in animation

Different live action elements were juxtaposed with animation in different ways. In one sub technique, a live video was taken as a foreground interacting with an animated background of digital paper cutouts. In other a static photo was manipulated and animated. In other different elements were incorporated in a live video, modifying it.



EXPERIMENTATIONS WITH PAPER FOLDING AND HYBRIDIZATION

Various elements were composed using continuous paper folding. Different elements were planned out, their folds, joints, etc, individual elements were animated, merged and composited in 3d space.



Hybridization Trials

Motive here was to select existing or tried out experimentations and to decide upon a common visual style, eventually merging them.

Following hybridizations were done:

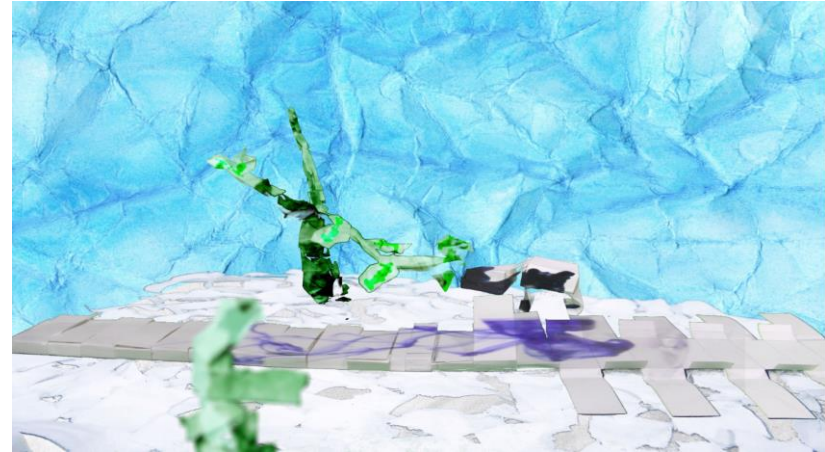
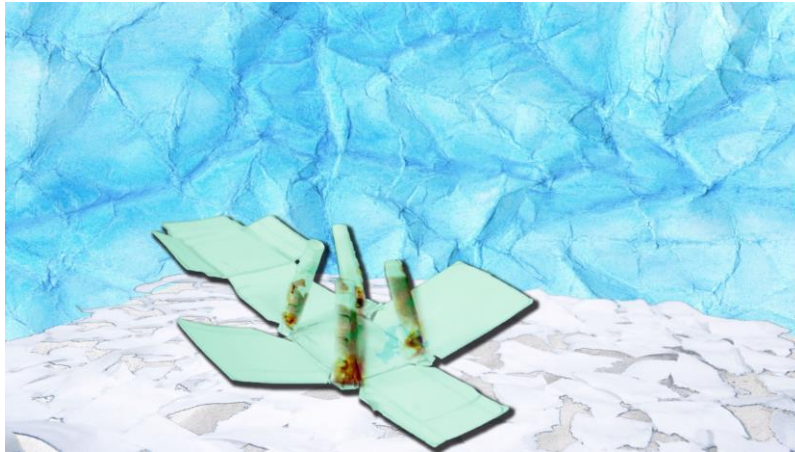
1st sequence

- Digital paper cutout
- Rotoscopy
- Alternating elements



2nd sequence

- Paper folding
- Ink on water



Though the compositing of the individual elements did not come out as expected in terms of overall arrangement, but the paper folding experiments gave me a scope for further advancement in techniques related to paper.

Also there felt a need to narrow down the experiments. The approach first-theme later till now felt more cold and sterile. One major problem that I faced was that trying random experimental techniques was quite overwhelming. There was an overall lack of direction. Hence, a theme was needed to be decided so as to have a quantifiable number of constraints to work on. The whole of the next semester was directed towards working on a theme based experimentations.

THEME BASED EXPERIMENTATIONS

After much introspection, the theme selected for further experimentations was 'Book and its elements'. One major reason for that was the fact that I have an inclination towards books and how reading a book is such an amazing experience. There was a lot of scope of experimentation on the theme itself, the act of reading and visualizing.

Considering book as a system, following constants could be experimented upon:

1. Its elements (paper, words/text, ink)
2. Structure and alignment of those elements in it
3. The mechanism of these elements

Some experiments performed using these elements of the book were:

1. Paper Quilling

Paper quills were made out of book sheets. The shape formed by the quills and the portion of the back sheet revealed forms an interesting pattern to work on.



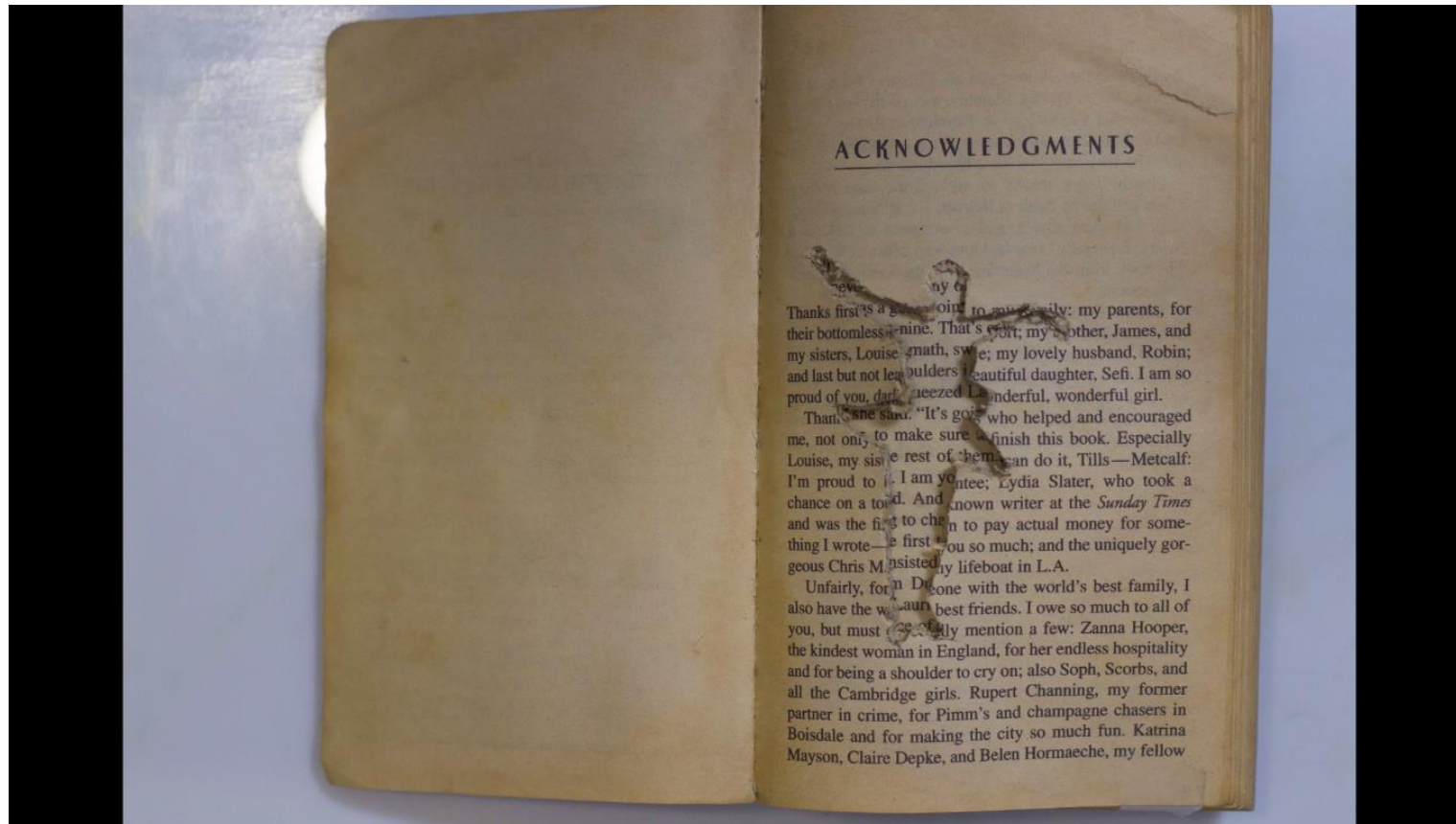
2. Text as images

Text and its alignment were used to form different imagery. The animation was performed by movement of the text in the corresponding shape or movement of the shape on a corresponding text. Also by using negative space on text as well as appearance/disappearance of text.



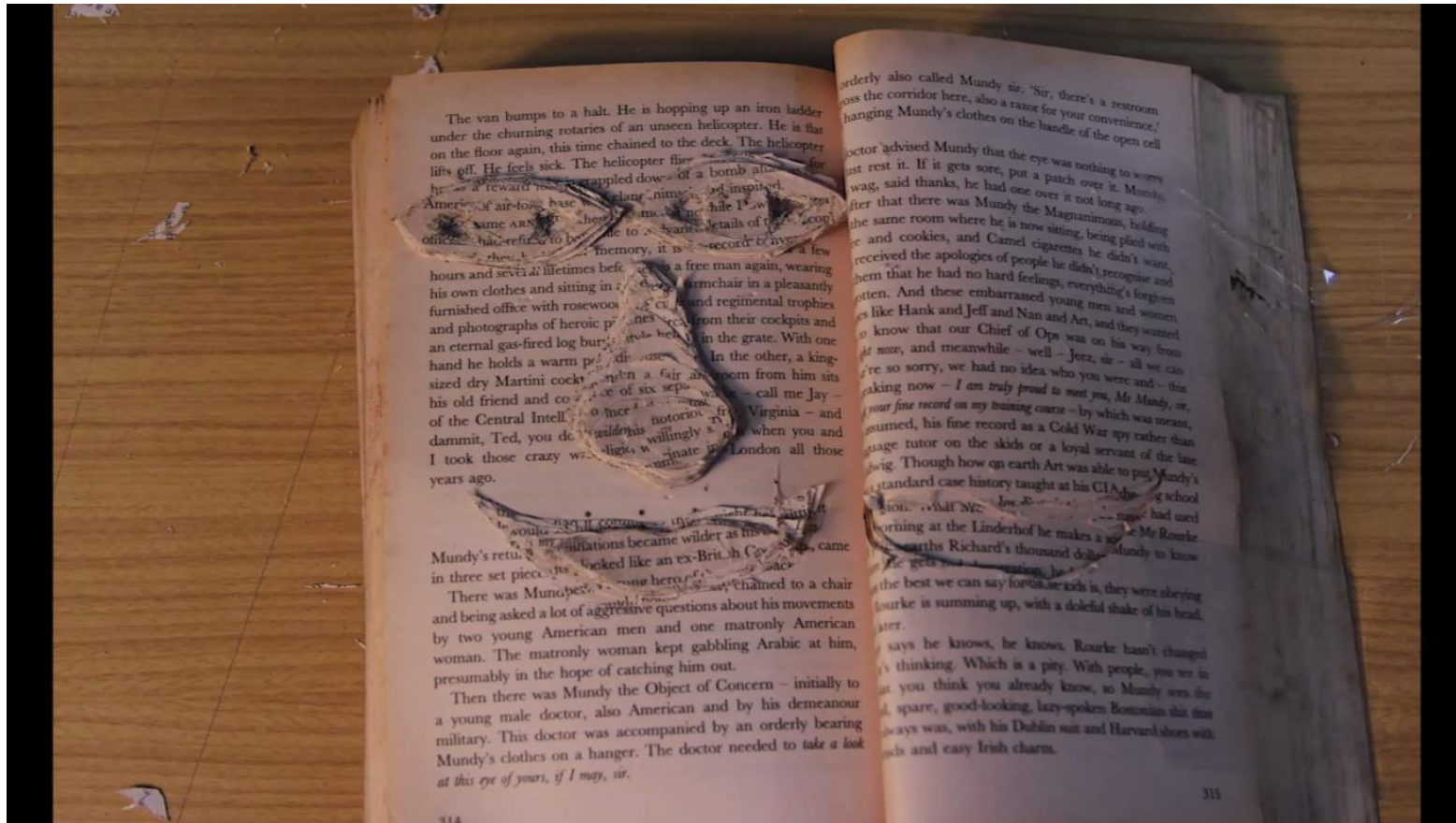
3. Carving

In this method, every single frame was carved on different pages of the book. The resulting form was different shapes in depth with different text inside and outside. Consequently these shapes were animated to get an entirely different visual.



4. Extrusion

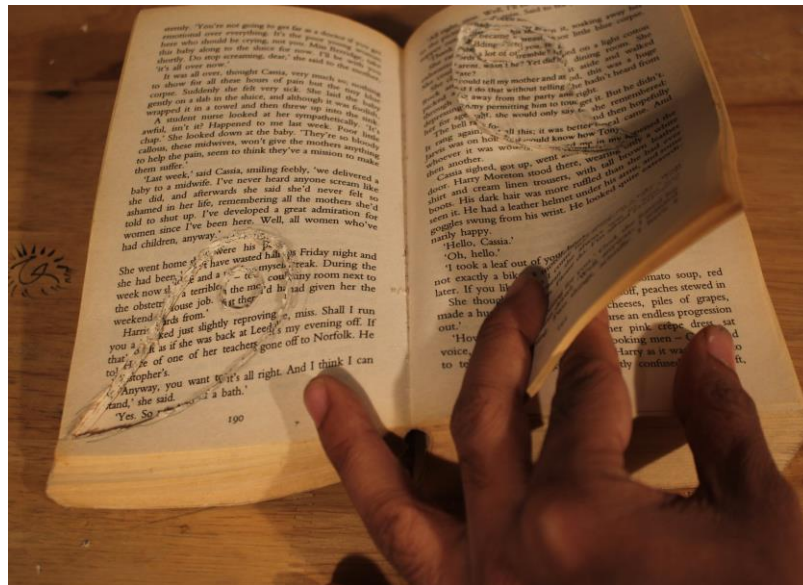
In this technique, layers of paper were stacked over each other to form a frame. The extruded frames were then animated accordingly.

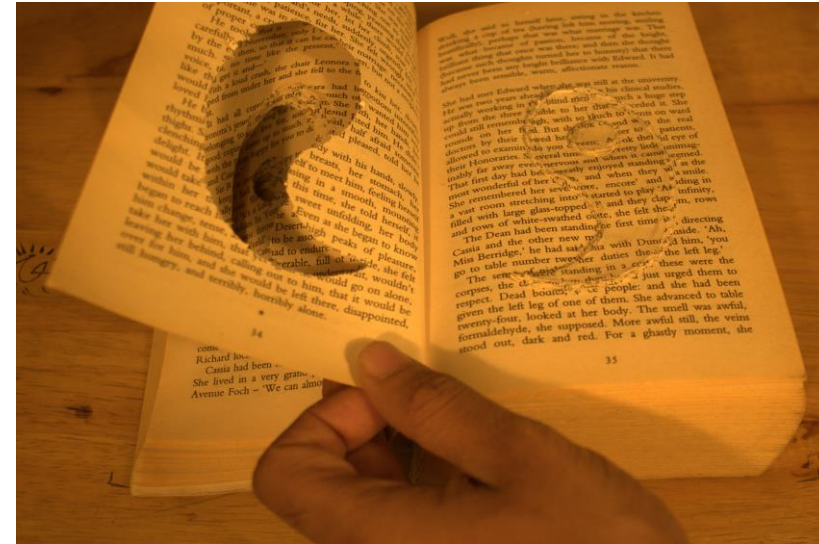


Other techniques that were decided upon with the theme of book were:

- Popup art
- Paper folding
- Origami
- Alternating elements

These techniques explored were then expanded upon as further transitions between these techniques, combinations and modifications were worked upon.





SELECTING A NARRATIVE

A narrative was to be selected so as to direct the thematic based experimentations of a 'book'. Since the experimentations were so meta in their approach, the narrative was also to be selected to be something about the act of reading, creating or writing.

Considering this, a work of the poet Pablo Neruda titled 'Poetry' was selected which consists enough imagery so as to allow the abovementioned experimentations to be worked upon.

REFERENCES

- ^[1]Some of the points of analysis and structurization have been taken from the following research papers:
 - Content and Meaning in Abstract Animation (Pamela Taylor Turner Assistant Professor, Kinetic Imaging Communication Arts and Design Virginia Commonwealth University)
 - The American Pioneers of Abstract Animation
- ^[2]MetaVille: an interactive experimental animation installation by Scott Amos (<https://www.youtube.com/watch?v=RPBfT3PkdIg>)
- ^[3]Some of the explorations were performed under the academic module of 'Experimental animation' taken by Prof. Nina Sabnani
- ^[4]The idea was inspired from a technique available, where photographic and animation techniques that were developed to draw moving 3-dimensional typography and objects were used with an iPad. This technique was slightly modified and reciprocated using After Effects. For further reference:
Making Future Magic: iPad light painting (<https://vimeo.com/14958082>)
- Some additional references were taken from : wikipedia.com, Blog-Edge of Frame (<http://www.edgeofframe.co.uk/>)