

Understanding the filmic portrayal of elements in space through the study of Satyajit Ray's films to examine the human emotional relationship with built environment

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Abstract

The representative power of architecture to portray spatiality in films can capture a broad cultural and emotional comprehension of our lived spaces. Filmic space can propose a different relationship between architecture and people. Films act as a mirror for architects to see buildings. Although cinema is a two-dimensional, limited representation of architectural space, it is a deconstruction of spatial reality. Films act as a means to interpret real world outputs. The basic visual elements represented in space such as line, shape, color, movement define the overall visual and emotional character of it. This study is essentially a pragmatic and qualitative approach to understanding the human emotional relationship with the built environment through the lens of cinema.

Keywords: cinema, architecture, filmic space, emotion

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Introduction

The interplay between cinema and architecture

To proceed with the study, we must first understand the concepts shared between architecture and cinema. Some of the shared concepts are – art, reality, dimension, depth, perspective, experience, space and light. Vidler (1998) writes, “The obvious role of architecture in the construction of sets (and the eager participation of architects themselves in this enterprise), as well as film's equally obvious ability to "construct" its own architecture in light and shade, scale and movement, allowed for a mutual intersection of these two "spatial arts" from the start.”

Referring to the term “spatial arts” with respect to architecture and cinema, it is important to emphasize on the term “space”. Toy (1994) says that there is an inextricable link between the creation of films and the growth of our built environment, at least in terms of the study of volumetric space in time, whether actual or imagined. This study is limited within the boundaries of space and the elements in it: how is it approached, how is it created, what does it represent, how does it affect the human emotions.

‘Cinaplastics’, the term first used by art historian Elie Faure, refers to the beauty of cinema that binds to architecture and cinema. He goes on to give examples of early cineplastic practices from German Expressionist films; Paul Wegener's *Der Golem, Wie er in die Welt kam* (The Golem), Karl-Heinz Martin's *Von Morgens bis Mitternachts* (From Morning Till Midnight), Robert Dene's *Das Cabinet Des Doctor Caligari* (The Cabinet of Dr. Caligari). All were made shortly after the war, in 1920. German art critic and New York Times journalist Hermann G. Scheffauer celebrates the birth of a new space in an analysis published in the late

1920s, stating that space on the screen is no longer treated as dead and dry but enters life, movement and function as part of emotion (Hacıömeroğlu, 2008; Vidler, 1998)

Representation of architectural space in films becomes a notion on which the relation between architecture and cinema can be based. Here, by “representation” it means the abstraction, addition, or transformation of objects to another medium. Film is seldom studied as a mode of representation of architecture. So the answer to the question of “why cinema with respect to architecture” is that both disciplines have the ability to learn from each other. Architects can learn from the filmmakers ability to represent and move through space. They may benefit to understand that three-dimensional representations are a ‘natural set’ for the exploration of spaces in movement. Space is never empty, it always embodies a meaning. Cinematic space can be seen as a representation of architectural space (Hacıömeroğlu, 2008). In cinema the director aims to express his thoughts, interpretations or stories, to create a certain meaning, to organize an order for understanding or resisting the chaos of life. To achieve this, the director uses all aspects of the cinematic medium. These aspects function as the visual and auditory tools in the transfer of meaning. Hence it is apt that we relate the cinematic medium to architecture as a means of creating new design possibilities in various academic fields.

For a better understanding of this interplay between architecture and cinema, a still from the famous director Stanley Kubrick’s movie ‘The Shining’ is given below. Fig 1.



Source: images2.minutemediacdn.com

Fig 1. A still from The Shining depicting the hotel, i.e., the main location where the movie was shot

The hotel in Shining is an excellent illustration of how to create environments that help to emphasise suspense and disorder in the context of the story. The huge open expanses add to the suspense of the developing events, making them even more powerful and fascinating. The hotel is known to be a real place where the film was shot, which adds to the suspense and intrigue of the film. The hotel's décor also contributed significantly to the film's atmospheric setting. In this film, the concept of employing a single structure that is literally isolated from the rest of the world is incredible.

So now we must answer the question, what are the aspects that induce human emotion in movies? They are:

-Camera movement

-Sound (music)

-Editing

-Story

-Cinematography

-Set design

It is a well-known fact that art provokes sensations in humans, that these sensations are of varied types. These sorts of somatic reactions can, to some extent, be increased, perfected, strengthened, cultivated, refined and educated. Films work as “technologies designed to open the locks that safeguard our buttons of pleasure”.

Filmic emotion



Skill with which movie imitates reality

Many scholars have argued with almost certainty that films evoke emotions in viewers to the point where they are, the imitation of life. The emotions caused by the films are based on the same processes that produce the emotions of the real world. Greg M. Smith (2003) aptly summarizes the beauty of the psychological process when he states that the study of film emotions should be dealt with in detail by all means that irritate them, from light to genre, including product, character movement, camera work, sound, music, narrative aids, etc.

Aim

To understand the representative power of architecture in cinema in relation to the human emotions. To accomplish this goal, Satyajit Ray's films are particularly chosen. Realistic in approach, his films serve as an apparatus that fused the different elements to drive home a plethora of significations.

Objectives

- i. To analyse Satyajit Ray's films from an architectural standpoint.
- ii. To understand the emotional dynamics of the scenes in the film
- iii. To identify the principles of architecture in the frames of the film.

- iv. To associate the emotional dynamics of the scene to the corresponding elements represented in space in the scene
- v. To compile a list of elements and their associated emotion

Scope

- i. The scope of the study is Satyajit Ray's films between the years 1950-1970, covering six movies that have been selected according to certain parameters defined in the methodology. The study embodies the general approach of the directors to space and the elements in space. The selection of the films is due to the potential they provide for analysis and reflection. These films are 'worth' studying since they showcase Ray's exemplary artistic talents. Both the director and film are specific examples, and not a representation of dominant approaches to spaces in cinema.
- ii. The frames have been selected based on a qualitative approach. 4 members have been selected and were asked to pick frames that were the most emotionally compelling to filter out the data.

Limitations

- i. This study deals with the interaction between architecture and cinema. Cinema is read within the field of architecture, from an architectural point of view. This is then associated to the human emotional relationship to the built environment. This is not an overall research that covers everything related to the two art forms, rather it focuses on the elements portrayed in the filmic space to get a deeper insight on the impact of these elements on the human emotion.

- ii. Out of the 13 basic emotions, only 11 are identified due to the limited selection of movies

Literature study

S.no.	Reference	Focus of study	Research question	Methodology	Outcome	Inference
1.	1. Al-Saati, M. Z., Botta, D., & Woodbury, R. (2012). Depictions of Architectural Spaces in Film. <i>The International Journal of the Image</i> , 2(3), 107–118. https://doi.org/10.18848/2154-8560/cgp/v02i03/44056	Types of spaces constructed in films and the experience they convey	What abstract spaces are available to be represented in film?	Spatial archetypes have been gathered based on form and experience, and a ‘close reading’ of film scenes was done to understand sequential revelation.	A basic vocabulary was provided to understand spatial archetypes and their conveyance of mood and emotion	This vocabulary assists in the communication of spatial experiences through moving images manifested in films
2.	Alvarado, R. G. (2008). Analysis of filmmaking techniques for architectural animations. <i>Metu Journal of the Faculty of Architecture</i> , 25(2), 133–149.	Film making techniques for architectural animations	What are the guidelines for creating animated presentations of building projects?	Analysis of films was done on 3 scales: the individual image, sequences of takes, general montage of scene, using derived plans and sections	The cinematographic characteristics suggest that animated presentation of architectural models could achieve a level of expression that embraces spatial conditions and relevant meanings of the environment.	Exhibitions on time should evolve from a mere chronological prolongation to become an expressive construction. This paper also gives insight into how a general analysis of films must be done.
3.	C.G. Shyamala 32. (1989). A Deconstructive Reading of Satyajit Ray’s Pather Panchali	Analysis of Satyajit Ray’s	What is a plausible interpretation of the film	Discussions about film, socially, culturally,	Ray’s films objectively portray	The film, has deconstructed the

	(Song of the Little Road)32–38.	Pather Panchali	to draw its true essence?	spatially, understanding its essence	India and its condition during the post-colonial period.	time and culture represented in contemporary culture.
4.	Cairns, G. (2012). Crossing the boundaries of film and architectural pedagogy. <i>Journal of Pedagogic Development</i> , 16–23.	The role of film as an educational tool in the field of architectural design, relationship between film and spatial design	What is the potential of interdisciplinary design thinking in an education context?	Author conducted workshops with students of architecture and interior design in both the UK and Spain to examine how a film should be analysed and the directorial techniques used to understand films.	Examples of 'design vocabulary' were presented with a series of visual and spatial effects that result from a deep engagement with the visual language of the film.	The composition of the scenes can be translated into a design language. For example, treating a wall as a visual effect analogous to a 'fade'.
5.	Canepa, E., Scelsi, V., Fassio, A., Avanzino, L., Lagravinese, G., & Chiorri, C. (2019). Atmospheres: Feeling Architecture by Emotions. <i>Ambiances</i> , 5, 0–29. https://doi.org/10.4000/ambiances.2907	Analysing the atmosphere dynamics with two interrelated academic disciplines: architecture and neuroscience	How should architects approach the complex term 'atmosphere'?	Scientific approach: Participants were asked to enter and walk in a 1:1 wooden construction (the physical set-up for experimental sessions that they named the 'atmospheres box'), wearing a VR headset equipped with a touch controller, parameter studied: Interpersonal Reactivity Index, called B-IRI	When used in an architectural context, the term atmosphere refers to a condition of resonance and identification (sensorimotor, emotive, and cognitive) between a person and their constructed environment.	Atmospheres become the primary research tool for determining how we 'experience' architecture through our emotions and for delving into the meaning of experiencing the architectural essence of constructed space.
6.	Clarke, A. (2012). Spatial Experience, Narrative and Architecture - Byera Hadley Award Report. <i>Byera Hadley Scholarship Foundation and the NSW Architects Registration Board</i> , 31.	Understanding the various ways film and architecture intersect	How can the link between film and architecture create an expanded conception in the field of architecture?	Case study approach: 3 case studies from the intersecting worlds of film, art and architecture were analysed.	The practitioners who merge the disciplines of architecture, art and film as their practice explore	Filmic space can propose a different relationship between architecture and people based on a broader

					new ways to negotiate architectural design problems in the present.	range of sensory, social and temporal qualities.
7.	Hacıömeroğlu, T. N. (2008). <i>Reconstruction of Architectural Image in Science Fiction Cinema: a Case Study on New York</i> . May, 79.	Examines the relationship between architecture and science fiction film in order to comprehend architecture's fictitious and representative power.	How can the architectural images in science fiction movies be interpreted?	Architectural image in architecture and cinema were studied under 3 categories; City as an Image, City Scale, Corporeal Experiences, Movement in the City	Understanding the impact of science fiction films on architectural advancements and developments by giving an appropriate setting in which architecture can freely experiment, speculate, and play around.	The prosperity of an architectural design cannot be evaluated only by its physical functionality but also the fictional and representative power of it.
8.	Universitatis, F. (2015). <i>Katarina Andjelković</i> . 13, 123–135. https://doi.org/10.2298/FUACE15020123A	Presenting the possibilities of adopting the cinematic qualities of architecture as an approach to tracing current modifications in contemporary architectural discourse	How can the cinematic aspect of architecture in theory, practice and education, be applied in practice, in pursuance of detecting new thought-models both in the design process and in the evaluation of architectural practice and urban environments?	Inter-disciplinary approach: author came up with a conceptual design model based on 3 conditions-analysis of architectural space, principles of architectural space and physical and visual articulation of buildings.	Verified that the spatial quality of urban continuity corresponds to the cinematographic continuity reconstructed by spatial means.	The analysis provides new contexts for the continuous monitoring of paradigmatic change between conceptualization and issues concerning the experience of architectural space, which are considered to be the future of architecture.
9.	Mehndiratta, R. R. (2002). <i>Film as urban</i>	Through Satyajit	Can the interplay	Analysis of film	The parameters	Ray was successful

	<i>investigator: Satyajit Ray's Aparajito and Banaras.</i>	Ray's film <i>Aparajito</i> (1957), the author explores a method of analysing the city of Banaras, which is located in India's north-central region.	between film and built environment disengage the all-subsuming sacred aura of Banaras to reveal underlying historic and cultural formations?	1. Splitting of the frame to reveal hidden tensions or forms of relationships embodied in a given space. 2. Simultaneous doubling or tripling of frames that contextualize a given character through the depiction of different spaces. 3. Exploration and revelation of different facets of a space that situates a given character.	that formed the film, the cultural practices it represented and its aesthetics that depicted Banaras to ideological ends allowed for a successful interplay of Banaras and the film	in re-situating Banaras into the psychology of the individual.
10.	Norman, D. A., Diego, S., & Ortony, A. (2020). <i>Designers and Users: Two Perspectives on Emotion and Design. Theories and Practice in Interaction Design, January 2006</i> , 125–138. https://doi.org/10.1201/9781482269536-15	Two perspectives on products: designer and user. There	Can designers shape the emotional response of users on their products?	Examining theory on two aspects of products: utilitarian aspect and appearance, from two perspectives: user and designer.	Designers must work within a complex realm of multidimensional requirements and constraints in order to shape the emotional responses of the users	Designers can attempt to control the users' Visceral, Behavioural, and Reflective responses through the different features of their design and through the affordances they provide.
11.	Qadir, N. (2011). <i>SPATIAL EFFECTS : Narrative Structure in Architecture.</i>	Investigating the function of narrative in Architecture and Cinema and its development from symbolism to spatial formation.	Can narrative structures be heightened through architectural symbolic and communicative buildings and spaces?	After a comprehensive study on the existing symbolism in architecture, case studies of present-day structures were analysed to understand the symbolic value in the project and its translation to the form	This project demonstrates the ability of architecture to heighten our sense of shared history and generating spaces that are informed by stories of our society	Storytelling and narrative illustrate the importance of constructing meaningful and ethereal spaces that touch upon the sensorial and

						cerebral sphere.
12.	Schupp, J., Lu, A., & Penz, F. (2019). Cinematic Interpretation of Spatiality. <i>Cambridge Journal of China Studies</i> , 13(4), 24–52.	Selection of spaces to capture an individuals comprehension of lived spaces around the globe.	How can fiction films be used to uncover spatial cultural differences?	Author conducted workshops- 1. Participants were divided into ten groups and given the job of exploring a certain concept of space using the medium of video in Nanjing's Zhan Garden. 2. Participants screened their filmic results and discussed the theme of “cinema as a culture of space”	Characterization of a location through a structured dramatic narrative, utilising character-based storylines presented in the built environment in order to show the emotional resonances of occupied spaces in connection with the relationships and actions of the characters.	Individual or broader cultural understandings of our daily locations can be captured in filmic depictions of spatiality, revealing deeper culturally embedded understandings of everyday situations.
13.	Wiley, N. (2003). Emotion and Film Theory. <i>Studies in Symbolic Interaction</i> , 26, 169–187. https://doi.org/10.1016/S0163-2396(02)26012-3	The feelings we experience when viewing a movie are compared to those we experience in everyday life.	How are the emotions evoked in movies different from ‘real-life’ emotions?	Analysis of 17 parameters such as context, clarity, frequency, etc w.r.t movies and real life to create a comparison	Translating cinema theory into emotion sociology and vice versa.	Movies contain the ideal resources for providing symbolic or fictional answers, giving us the escapist joy of living in a better world for a short time.

Film and Emotion —————> Film and Architecture —————> Architecture and Emotion

CINEMA – Why movies?

Our perceptions of space, both built and natural space, may be audio-visually caught, conveyed, and even recreated on the cinematic screen, therefore the medium of film can be used to analyse and illustrate our understandings of space.

The selection of shot scales, camera motions, sound design, set design, and editing, as well as the spaces included in the camera's gaze, can capture individual or broader cultural understandings of our inhabited spaces around the world.

Film, as a visual and temporal medium, can aid in the preservation of these spatial and temporal understandings of our world. (Schupp 2019)

Cinema as a mode of representation does not represent things completely, it adds new qualities to them.

How do films create an emotional impact?

One way we perceive emotion in film is through a process called the Mirror Rule, which says that the artist must try to mimic the visual input that we're seeing. So, if one walks up to someone and they smile at you, it's good to smile back.

When watching someone in the theatre and seeing a smiling face on the screen, the majority of the audience will smile a little bit.

We tend to feel happy when we smile. We tend to feel more enraged when we frown. As a result, the Mirror Rule combined with the brain's assessment of emotion based on the current condition of the body is sufficient to elicit emotion.

In cinema, a filmmaker has the potential to tightly blend those elements. He has complete control over what parts of the face are visible and what else is present. And the audience has a lot less freedom to go away or focus on anything else.

Mirror rule



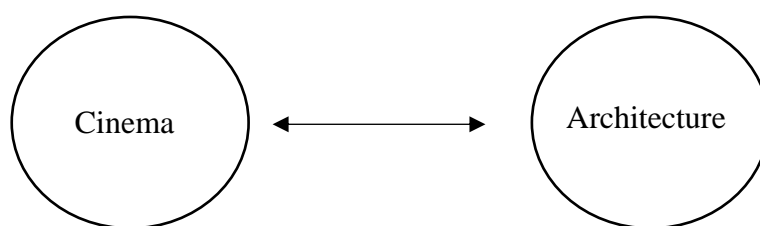
Mimic the visual input one is seeing

Cinema and Architecture

Jahani Pallasmaa states –

“There are hardly any films that do not include images of architecture. This statement holds regardless of whether buildings are actually shown in the film or not, because already the framing of the image, or the depiction of scale or illumination, implies the establishment of a distinct place” (Pallasmaa, 2007, p. 20).

From this statement, Pallasmaa has identified a relationship between cinema and architecture, while also identifying that they remain as separate art forms. This connection of the two art forms is a distinct link of cinema's use of architecture and its ability to create time and place within its filmic imagery. Building off this concept – Anthony Vidler discussed, that there is an obvious role of generic architecture within the construction of sets but further acknowledges that it equally has the ability “to ‘construct’ its own architecture of light and shade, scale and movement, from the outset allowed for a mutual intersection of these two ‘spatial arts’” (Vidler, 1993, p. 46).



How does architecture trigger human emotion?

One of the principal roles of architecture is to trigger emotions, it influences how one feels spiritually and mentally. It helps in surviving the chaos of our daily life and plays an important role in making us experience real-time situations with different design

interventions. When an architecture exudes a 'sense of place' then the occupants can connect with the place.

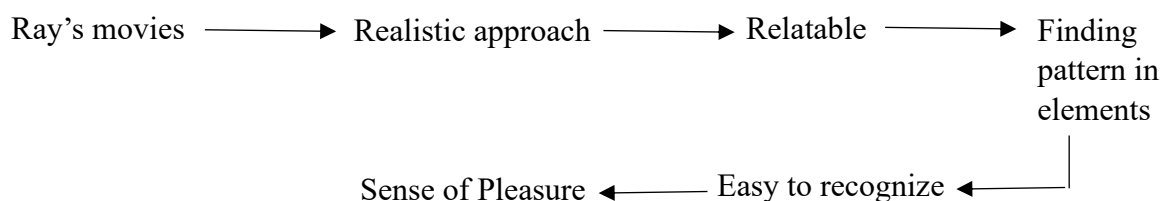
Observe how monuments can elicit emotions such as pride, sadness, or appreciation. Other architectural kinds, likewise, can surprise or even mellow one's attitude. It all boils down to how a space is built to elicit an emotional response from those who enter it.

Emotion in architecture is frequently linked to how well an architecture emits a "feeling of place," with a "sense of place" shaping the emotion experienced by a particular architecture. "Sense of place" may often assist architecture take on a personality of its own, and this personality can serve to elicit emotion in its occupants by connecting with them.

But the question remains: why is human emotion such a crucial consideration in architectural design?

Our architecture can achieve a higher level of poetics by aiming for an emotional reaction from its users. When your architecture can emotionally connect with its users, its message and meaning can be felt more deeply, producing a more lasting effect.

Satyajit Ray



After understanding why cinema with respect to architecture, we must understand why Satyajit Ray. Ray says that "When I write my own story, I use characters and milieus I am familiar with. I can deal with something I do not know at first hand only with the help of someone who does." he wrote. Ray's choice of subjects was one of his most important contributions to the world of cinema. He experimented with a variety of people and

circumstances. Many of them were not deemed good film subjects in India, hence they were unfamiliar to mainstream Indian cinema. He brought to the screen the actual worries of real people — villages, city middle-classes, intellectuals, the wealthy and famous, detectives, and kings. His films encompass a wide range of moods, methods, and genres, including comedies, satires, fantasy, and tragedy. Fig 2.



Source: satyajitray.org/design-and-art-direction/

Fig 2. A sketch of Outram's Study by Satyajit Ray

Set design and direction

Ray preferred to shoot outdoor scenes on location and indoor shoots in the studio. The sets were created to complement the settings, with no trace of artificiality or studio quality. His team worked with low resources but a great deal of technical ingenuity. "Simulated natural backgrounds are no longer used, and exteriors are now shot on location. When interiors are photographed in realistic situations, the quality of verisimilitude is achieved. However, there are limitations such as poor sound recording (which necessitates the always unpleasant process of dubbing), limited camera movement, and bystander interference, to name a few. "In general, I prefer to shoot interiors in the studio, where I can almost always achieve what I want thanks to the great partnership of my designer and filmmaker," he wrote in 1966. His movies not only resonated with Indians but people around the world.

Satyajit Ray Org: Life, films and filmmaking of Satyajit Ray.

Methodology

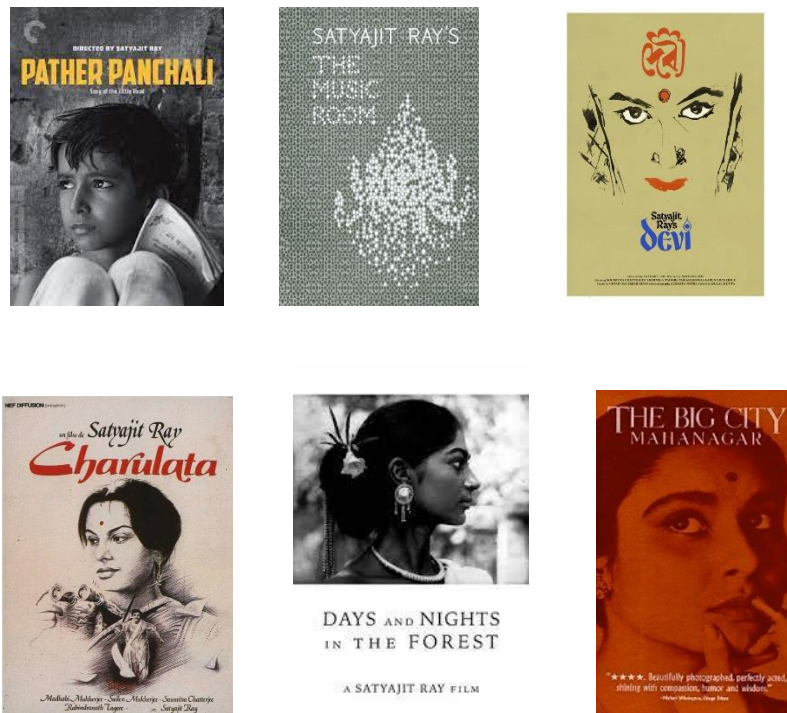
In this study, the concept of relating the architectural elements of the space in the set of the film to their corresponding human emotion will be done. Initially the study will be based on the identifying and classifying of the elements in the filmic space to come up with a set of standard design vocabulary. Subsequently, the emotional dynamics of the scenes selected will be interpreted and will respectively be associated to the elements identified.

1. **Selection of films:** The first step of the study is the identification of the appropriate films for analysis. This was done on certain parameters – set location, plot, theme, cinematic content, architectural content and popularity.

Defining the parameters

- Set location – the movies picked have been shot in a variety of locations, mostly in and around West Bengal, where Satyajit Ray is from. The movies picked cover both indoor and outdoor locations to understand a larger set of elements.
- Plot – understanding the plot helps us look into what the overall emotion the movie is trying to convey. Hence the movies picked cover a wide range of emotions such as anger, pride, lust, etc.
- Theme – the theme of the movie helps us identify the theme of the elements chosen to be represented in the filmic space.
- Cinematic content – all of Satyajit Ray's films are rich in cinematic content. By cinematic content, it means how rich are the frames. Each frame needs to be analysed on the basis of story, characters, what they are trying to convey, how well is the movie doing this.

- Architectural content – how much architecture is depicted in the space, how have they used the architectural elements to convey certain emotions.



Source: satyajitray.org

Fig 3. Posters of movies of Satyajit Ray

i. Pather Panchali, 1955

Film set location: Boral village, outskirts of Bengal

The scenes in the movie make an attempt to represent the changes of modernity.

The beautiful elements of the village are weaved into the larger picture of poverty as a backdrop.

ii. The Music Room, 1958

Film set location: Nimita Raajbhari, Nimita village (10km from Murshidabad)

While the movie Pather Panchali depicts “hope”, this movie evokes a level of “doom”. There is an incandescent depiction of the clash between tradition and modernity.

iii. Devi, 1960

Film set location: Bengal

Its melodramatic plot twisted with culture and patriarchy make this movie a 'psychologically realistic' movie.

iv. The Big City, 1963

This was Ray's first picture, set entirely in his hometown of Calcutta, and it reflected present realities of the urban middle class, where women going to work is no longer driven by aspirations of freedom but has become a financial necessity. This film provides us a feeling of "power."

v. Charulata, 1964

Film set location: Gopalpur

Set during the pre-independence era, this movie depicts artistic and romantic emotions.

vi. Days and nights in the forest, 1970

This is one of Ray's movies that does not focus on one central theme, which was probably why it did not resonate with the Indian viewers at first. Shot mostly in the forest, this movie evokes a comical but dramatic emotion.

2. Identification of emotions:

PART I

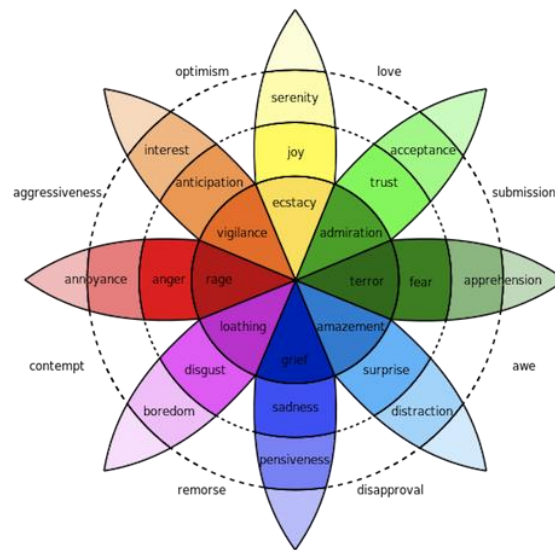
Nava signifies nine in Sanskrit, while Rasa refers to a sense of "emotional state."

Since they were established in the Natyasastra (written between 200 BC and 300 AD), the nine Rasas have been (and continue to be) the backbone of Indian aesthetics, forming the foundation from which the traditions of dance, music, theatre, art, and literature have emerged. The main purpose of the performances and artwork was to elicit the Rasas in the audience. The 9 Rasas, as described in ancient Indian aesthetic

philosophy, are representative of the most basic human emotions. Each Rasa is a reservoir of Prana-derived energy (life force).

- i. Sringara (Love) is the ultimate Rasa; it is the crown feeling that heals all. This Rasa ties us to devotional love and frees the ego.
- ii. Hasya (Joy) - Through laughter, happiness, and contentment, this Rasa connects us to our sense of humour.
- iii. Adhuta (Wonder) - Curiosity, mystery, and amazement that arise when we get enthralled by the concept of life. This Rasa represents our childishness and innocence. We enter a state of total appreciation and transform into explorers or adventurers. It appears to be a work of magic.
- iv. Vira (Courage) — Also boldness, self-assurance, resolve, and valour. When you summon the warrior who is within you, Vira emerges. It's powerful and vivacious.
- v. Shanta (Peace) - This Rasa is associated with deep relaxation and tranquillity. We are so full with serenity when we become still, quiet, and at peace that we are empty of everything else.
- vi. Karuna (Compassion) - We experience compassion when we can feel another's grief and reflect it back to the cosmos. Compassion is what binds us all together.
- vii. Raudra (Anger) - When we are angry, we throw ourselves into the flames. Respect for fury because one moment of rage can undo a lifetime of good deeds. Anger that isn't respected can lead to frustration, aggression, and hatred.
- viii. Bhayanaka (Fear) — Also doubt, concern, insecurity, and other negative emotions. We shut down totally when we live our lives in fear. With inner power, love, and truth, defeat Bhayanaka.
- ix. Vibhasta (Disgust) — Self-pity, contempt, and loathing. The judging mind is symbolised by this Rasa.

PART II



Classical taxonomy of Robert Plutchik, 1981

Robert Plutchik is a psychologist who developed a psychoevolutionary theory of emotion. According to the late psychologist, emotions are much more complex than most people realize. He developed 10 postulates out of which the ones relevant to the study are listed below:

- Basic Emotions: There are just a few prototypes, primary, or basic emotions that have been recognised.
- Combinations: All other emotions are the consequence of a mixing of the basic emotions, or combinations of them. Love, for example, is a mixture of joy (the primary feeling) and trust (primary emotion).

List of emotions that will be included in the study to be identified from the movies –

1. Joy
2. Fear
3. Anger
4. Disgust
5. Wonder
8. Compassion
9. Love
10. Trust
11. Sadness
12. Surprise
13. Anticipation

6. Courage

7. Peace

3. Grouping the emotions: The emotions in the various scenes in the films will be identified and grouped together. For example, all the scenes depicting fear in the six movies will be grouped together to be able to identify all the common elements depicted in the filmic space.

4. Linking the spatial design to the principles of architectural composition: The frames will first need to be analysed based on what principles of architecture is being implemented to understand how the elements to be identified play a role in affecting the human emotion.

Principles of architectural composition:

1. Focus
2. Unity
3. Balance
4. Rhythm
5. Harmony
6. Discord
7. Texture
8. Contrast
9. Monotony
10. Scale
11. Proportion
12. Colour
13. Character

Emotion	Frame	Principle of architecture



Source: Ching (1979): *Form, space and order*

5. Identification of elements in space in each frame for each emotion:

Architectural elements will be identified in the selected frames in the films and will accordingly be associated to the emotion the scene is trying to capture. Given below is a sample analysis. Fig 4.

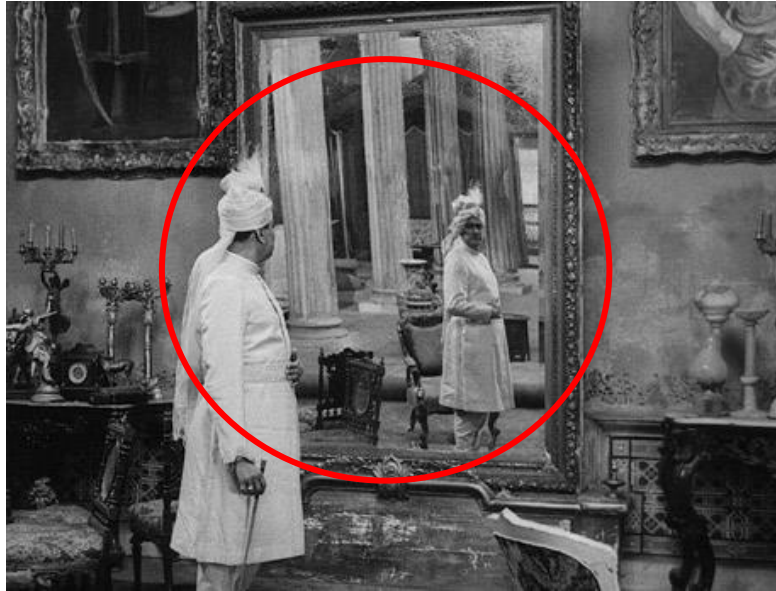
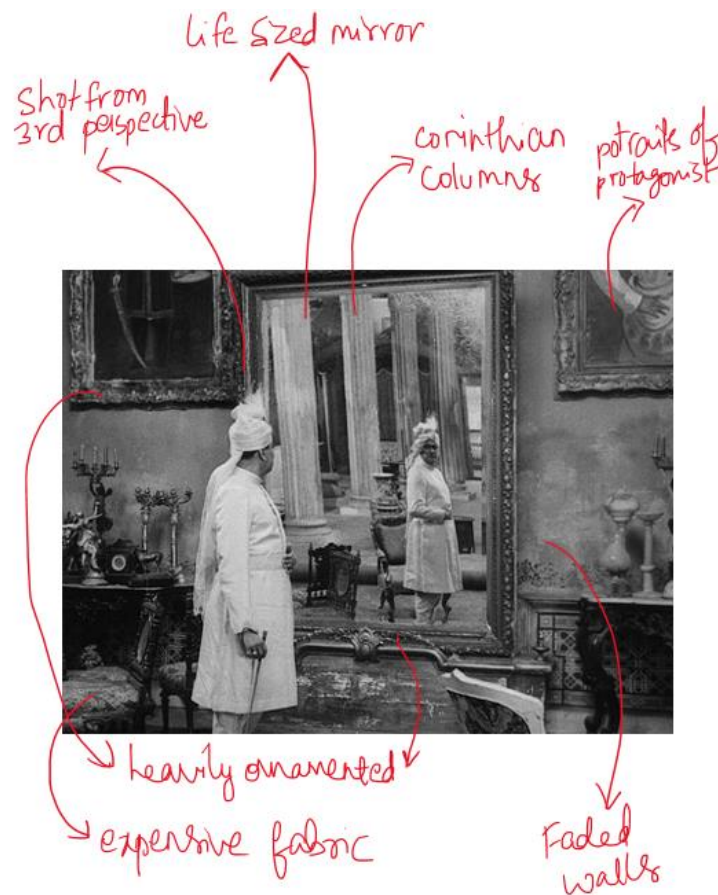


Fig 4. A still from the movie 'The Music Room'

The plot follows Biswambhar Roy, an aging *zamindar* (landowner) who jealously clings to his self-importance.



- What objects or pictures appear in the film multiple times?
- How does the director associate a character with minor details like colour, clothes, cuisine, or language usage?
- What is the link between the signs in the film? How does a symbol or item relate to other symbols or objects?
- What's in the shot and what's not?
- Where's the camera and what's its perspective?

6. Classification of data based on emotion after frame analysis

Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
			Day/ Night	Indoor/ Outdoor			




Analysis example

Given below is an analysis after watching the first 20 minutes of the movie ‘Pather Panchali’.

The emotion identified is anger, and two frames depicting two scenes under this category of emotion has been analyzed.

EMOTION – Anger

















SUB EMOTION - Annoyance

Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
Pather Panchali Frame 1 – 10:47 Frame 2 – 12:08	1. Indir is angry that Sarbojaya, Durga's mom, is accusing her of spoiling for Durga, throws the kitten from a height.	 Side view of plinth	Day/ Night	Indoor/ Outdoor	Plinth	Scale proportion	The plinth acts as an element that emphasises Indir's anger, by throwing the kitten from that height. Also this is apt for her age as she wouldn't be able to go higher than this.
	2. Sarbojaya is annoyed with her daughter Durga for stealing fruits	 Front view of plinth	Day light	Outdoor (outside house)	Plinth, open space in front of house		Here the plinth is used by Sarbojaya to assert dominance over her child while she makes Durga clean in the open space
Pather Panchali Frame – 16:53	1. Sarbojaya is annoyed with her husband Ray for not getting paid and always being cheated on	 Front angle of Sarbojaya expressing her annoyance	Day	Indoor (Inside house)	Plain walls Window with grill	Contrast monotony	The scene is shot in perspective with Sarbojaya as the focal point. The plain walls along with the little light being let in from the windows emphasise on her suspicion and annoyance. Also, as Sarbojaya is expressing the family's financial issues, the plain walls and small windows add on to emphasise on the issue









Data collection

1. The movies were watched, and frames were identified based on various emotions depicted.
2. The frames were filtered out through a qualitative, subjective approach – the frames were given to 4 members and were asked to identify the most emotionally compelling ones. All the mutually agreed ones were kept in the study to be analysed.

Emotion	Movie	Frame	Principle Of Architecture	Emotion	Movie	Frame	Principle Of Architecture
Joy	<u>Pather Panchali</u> 1. 31:35 2. 35:24		Focus Scale	Fear	The big city		Focus Scale
			Proportion	Anger	<u>Pather Panchali</u> 1. 10:47 2. 12:08 3. 16:53		Scale Proportion Texture
	The music room 1. 15:35 2. 43:28 3. 1:19:20		Balance Rhythm Focus Proportion				Contrast Monotony
					The music room 1. 1:05:05 2. 1:11:47		Character Scale Unity Contrast
	<u>Charulata</u> 1. 1:21:35		Proportion Unity				Focus Character
Fear	The music room 1. 3:33 2. 35:04		Discord Monotony Scale	Disgust	Devi 1. 1:15:46		Contrast Focus
			Character Harmony		The big city 1. 29:00		Discord Contrast Focus
	Devi 1. 28:00 2. 30:16		Focus Contrast		The music room 1. 1:10:40		Character Focus
			Scale Character Proportion		Devi 1. 50:03		Character Focus








Emotion	Movie	Frame	Principle Of Architecture	Emotion	Movie	Frame	Principle Of Architecture
Wonder	<u>Pather Panchali</u> 1. 50:07		Focus Proportion	Courage	<u>Pather Panchali</u> 1. 1:46:59		Scale Proportion
	The music room 1. 5:38 2. 11:00		Proportion Scale Monotony		The big city 1. 50:00		Scale proportion
			Character Scale Focus Harmony		<u>Charulata</u> 1. 1:49:05		Character Scale
	<u>Charulata</u> 1. 6:38		Focus	Sadness	<u>Pather Panchali</u> 1. 45:07 2. 49:00 3. 1:05:13 4. 1:30:06		Scale Proportion Balance Focus
	Days and nights in the forest 1. 18:53 2. 36:12 3. 43:08 4. 1:05:27		Scale Proportion				Scale Proportion
			Scale Proportion				Scale Proportion Focus
			Scale Proportion				Contrast Focus
			Scale Proportion		Days and nights in the forest 1. 8:46		Scale Proportion Balance

Emotion	Movie	Frame	Principle Of Architecture	Emotion	Movie	Frame	Principle Of Architecture
Sadness	The music room 1. 48:10 2. 53:06		Balance Focus Scale	Sadness	Days and night in the forest 1. 8:46		Scale Proportion Balance
			Character Proportion			Surprise	The music room 1. 1:33:40
	Devi 1. 54:03 2. 1:29:29		Focus Proportion	Anticipation	The music room 1. 10:01 2. 46:09 3. 32:35		
			Monotony Balance Scale				Character Focus
	The big city 1. 1:34:18 2. 1:59:00		Discord Contrast Rhythm			Devi 1. 1:14:01	
			Rhythm Contrast	The big city 1. 1:18:20			Focus Character
	Charulata 1. 1:35:37 2. 1:39:38 3. 1:51:48		Discord Unity		Charulata 1. 1:05:03		Contrast Focus Balance
			Focus Contrast Unity				
			Focus Character Monotony				






Emotion	Movie	Frame	Principle Of Architecture
Anticipation	Days and nights in the forest 1. 31:34		Character Focus
Love	Pather Panchali 1. 39:35 2. 47:11		Scale Character
			Contrast Focus
	Devi 1. 16:00		Focus Proportion
	Charulata 1. 15:22 2. 48:00 3. 59:36 4. 1:59:16		Balance Harmony Rhythm
			Character Scale
			Rhythm Contrast
			Scale Proportion Character Balance Harmony

Data analysis





EMOTION – JOY




Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
Pather Panchali 1. 31:35 2. 35:24	Apu is excited to see the sweet vendor's cart arrive.		Day/ Night	Indoor/ Outdoor	Wall	Focus Scale	The hole in the wall helps the viewers understand that Apu is focusing on the sweet cart because he is excited for it.
	Apu is gleaming at the other kids playing		Day	Outdoor	Building, Open space in front, terrace	Proportion	The proportion of the building with respect to Apu emphasises on the kids playing
The music room 1. 15:35 2. 43:28 3. 1:19:20	All the guests in the music room are enjoying the music and dance performances	  	Day	Indoor	Corinthian columns Mirror Rugs with plenty of open space	Balance Rhythm Focus Proportion Character	The overall use of the huge rugs in the space, with the setting of the music room being lavish creates a rich experience for the guests. The mirror, mirrors the experience by making the space look even bigger.
The big city 1. 3:12	Children are running on the streets of Calcutta		Day	Outdoor	Open windows Chipped off walls Extended plinth	Scale Proportion Harmony	To give a feel of the streets of Calcutta, filled with freedom, the architectural elements depict the character of the city these kids are running through
Charulata 1. 1:21:35	Bhupati and his guests are enjoying the performance		Day	Indoor	Sofas Candles	Proportion Unity	The room provides an intimate atmosphere with the help of the arrangement of the furniture and the lit candles.

EMOTION – FEAR



Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
The music room 1. 3:33 2. 35:04	<u>Biswambhar's</u> helper is serving <u>Biswambhar</u> Roy his hookah		Day/ Night	Indoor/ Outdoor	Chair Terrace, open space	Discord Monotony Scale	The scale of the open space with respect to the helper and <u>Biswambhar</u> is bigger emphasizing on his egoistic demands
	<u>Apu</u> is gleaming at the other kids playing		Day	Indoor	Photo frame Furniture Wall lights	Character Harmony	The huge portrait of <u>Biswambhar's</u> family, the wall lights and the type of furniture used all create a sense of superiority of <u>Biswambhar</u> over <u>Ganguly</u>
Devi 1. 28:00 2. 30:16	<u>Harasundari</u> and her son are looking out the window at the chaos outside		Day	Indoor	Grilled window	Focus Contrast	The grills on the window, not allowing them to be completely outside but still getting a glimpse creates a suspense
	Everyone from the village came to pray to Devi		Day	Indoor	Columns	Scale Character Proportion	The columns are creating a limit to the space while the people are bowing down fully covered to pray to Devi
The big city 2:07:14	<u>Himangshu</u> , <u>Arati's</u> boss is mad at her for going against him		Day	Indoor	Casement window	Focus Scale	The window helps focus on the emotion of <u>Himangshu</u> , the light from the window creates a certain focus light on him

EMOTION – ANGER






Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
<u>Pather Panchali</u> 1. 10:47 2. 12:08 3. 16:53	<u>Indir</u> is angry that <u>Sarbojaya</u> , <u>Durga's</u> mom, is accusing her of spoiling for <u>Durga</u> , throws the kitten from a height.	 Side view of plinth	Day/ Night	Indoor/ Outdoor	Plinth	Scale Proportion	The plinth acts as an element that emphasises <u>Indir's</u> anger, by throwing the kitten from that height. Also this is apt for her age as she wouldn't be able to go higher than this.
	<u>Sarbojaya</u> is annoyed with her daughter <u>Durga</u> for stealing fruits	 Front view of plinth	Day	Outdoor	Plinth, open space in front of house		Here the plinth is used by <u>Sarbojaya</u> to assert dominance over her child while she makes <u>Durga</u> clean in the open space
	<u>Sarbojaya</u> is annoyed with her husband <u>Ray</u> for not getting paid and always being cheated on	 Front angle of <u>Sarbojaya</u> expressing her annoyance	Day	Indoor	Plain walls Window with grill	Contrast monotony	The scene is shot in perspective with <u>Sarbojaya</u> as the focal point. The plain walls along with the little light being let in from the windows emphasise on her suspicion and annoyance. Also, as <u>Sarbojaya</u> is expressing the family's financial issues, the plain walls and small windows add on to emphasise on the issue
The music room 1. 1:05:05	<u>Kali Roy</u> is very angry that his son isn't understanding the truth about his wife		Day	Indoor	Columns Animal-fur rug Sofa + table	Character Scale Unity Contrast	The scene being shot in perspective, the fragments of light coming through the columns light the furniture emphasizing on his emotion.




Devi 1. 1:18:12 2. 1:15:46	Uma is angry at his father for treating his wife as a god		Day/ Night	Indoor/ Outdoor	Grilled window	Focus Character	The grills on the window, not allowing him to be completely outside but still getting a glimpse creates a suspense
	Uma is telling his father he wants to stop his father's foolishness		Day	Indoor	Lamp Table Walls	Contrast Focus	The positioning of the lamp on the table highlights Uma's anger towards his dad
The big city 1. 29:00	Subrata's father is angry at his son for allowing his wife to work		Day	Indoor	Lamp Table Walls	Discord Contrast Focus	The positioning of the lamp on the table highlights Subrata's anger towards his son. The discord between all the books arrangement also emphasises on this emotion

EMOTION – DISGUST




Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
The music room 1. 1:10:40	Biswambhar is looking at his reflection after he lost his family and fame and money		Day/ Night	Indoor/ Outdoor	Stained mirror	Focus Character	The stained mirror helps the audience understand the plight of Biswambhar as he looks at his reflection in it
			Night	Indoor			
Devi 1. 50:03	Kalinikar is questioning himself		Day	Indoor	Stained mirror Grilled window	Character Focus	The stained mirror helps the audience understand the plight of Kalinikar as he looks at his reflection in it

EMOTION – WONDER


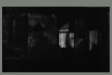






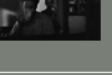



Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
Pather Panchali 1. 50:07	Indir is going to a neighbours house to ask if she could stay there for a while		Day/ Night	Indoor/ Outdoor	Double door	Focus Proportion	The opening of the door for Indir depicts her wonder
The music room 1. 5:38 2. 11:00	Biswambhar is spending time with his thoughts		Day	Outdoor			
	Biswambhar is wondering whether he's still old him		Day	Indoor	Corinthian columns Stained mirror Chipped off walls	Character Scale Focus Harmony	The overall character of the setting emphasizes on his lifestyle and personality
Charulata 1. 6:38	Charulata is eager to know what is happening outside her house		Day	Indoor	Louvred window	Focus	Charulata peaking through the louver adds on to the feeling of her curiosity
Days and nights in the forest 1. 18:53	Ashim is staring out into the distance spending time with his thoughts		Day	Outdoor	Natural elements – Lake	Scale Proportion	The proportion and scale of the lake gives a sense of distant wonder to the character

Days and nights in the forest 1. 36:12 2. 43:08 3. 1:05:27	Shekhar is sharing his curious thoughts with his friends		Day/ Night	Indoor/ Outdoor	Path with trees	Scale Proportion	The natural settings proportion compared to the characters in the frame evokes <u>Shekhar's</u> curiosity
	Ashim is taking to Aparna in the bungalow		Day	Outdoor	Balcony Trees	Scale Proportion	The natural settings proportion compared to the characters in the frame evokes a sense of wonder
	All 4 friends are walking to the bungalow		Day	Outdoor	Path with trees	Scale Proportion	The natural settings proportion compared to the characters in the frame evokes a sense of wonder


EMOTION – COURAGE

Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
<u>Pather Panchali</u> 1. 1:46:59	<u>Apu</u> is walking on the trail during the day		Day	Outdoor	Path through the fields	Scale Proportion	The natural settings proportion compared to the characters in the frame evokes a sense of courage
The big city 1. 50:00	<u>Arati</u> is going to her first house to sell the product		Day	Outdoor	Road	Scale Proportion	<u>Arati</u> walking on the streets in perspective gives a sense of her courage
<u>Charulata</u> 1. 1:49:05	<u>Charulata</u> and her husband have decided to rework his business		Day	Outdoor	Shore on the beach	Character Scale	The scene being shot in perspective depicts their upcoming journey together







EMOTION – SADNESS

Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
Pather Panchali 1. 45:07 2. 1:05:13 3. 1:30:06	Sarbojaya is upset with Durga for her actions so she throws her out of the house		Day/ Night	Indoor/ Outdoor	Wall	Scale Proportion Balance Focus	The wall is creating an apparent separation between the two characters and the hole in the wall emphasises on the mother's emotions
	Harihar Ray is upset about his daughter's death		Day	Outdoor	Lake	Scale Proportion Focus	The scale of the lake being bigger than Harihar emphasizes on his emotion
	Sarbojaya is mourning her husband's absence and daughter's death		Night	Outdoor	Wall Grilled window	Contrast Focus	The frame of Sarbojaya walking in the night with just a lit candle, and seeing through the grilled window depicts her sadness
Days and nights in the forest 1. 8:46	Hari's girlfriend is breaking up with him		Night	Indoor	Wall	Scale Proportion Balance	The wall is acting as a visual separation element between the two characters in the frame emphasising on the emotion
The music room 1. 48:10 2. 53:06	A frame of Biswabharas lavish house after the doom		Day	Outdoor	Building	Balance Focus Scale	The building set against the gloomy background evokes a sense of sadness
	Biswabharas is feeling sad about his family		Day	Outdoor	Columns	Character Proportion	The light falling through the columns adds on to the gloomy setting as Biswabharas walks through the corridor
Devi 1. 54:03 2. 1:29:29	Uma is worried about what his father is doing to his wife		Day/ Night	Indoor/ Outdoor	Grilled window Bed	Focus Proportion	The scarce amount of light coming through the grilled window emphasises on his sadness as he sits on the bed
	Kalinikar is upset with his son's behaviour		Day	Indoor	Columns	Monotony Balance Scale	The monotony of the colours of the columns and the walls adds onto the gloominess of the setting
The big city 1. 1:34:18 2. 1:59:00	Subrata is upset that Arati is not quitting her job		Day	Indoor	Walls Curtain	Discord Contrast Rhythm	The way the curtains are falling against the setting of the walls and Arati looks at her worried husband depicts the emotion
	Subrata is crying about his financial plight		Night	Indoor	Curtain Light	Rhythm Contrast	The use of shadows to depict this emotion in this scene is created by the falling of the curtain
Charulata 1. 1:35:37 2. 1:39:38 3. 1:51:48	Amal is upset about his brother's business		Day	Indoor	Furniture	Discord Unity	The discord amongst the objects in the background depict Amal's state of mind
	Bhupati gets to know his wife has feelings for Amal		Day	Indoor	Arched opening Lamp	Focus Contrast Unity	The lamp focuses on Bhupati's emotions along with arched openings in the background emphasising on the emotion
Charulata 1. 1:35:37 2. 1:39:38 3. 1:51:48	Charulata is upset about Amal's departure and cries reading his note		Day/ Night	Indoor/ Outdoor	Grilled window	Focus Character Monotony	The slight opening of the window is the backdrop for Arati's emotion depicting sadness


EMOTION – SURPRISE

Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
The music room 1. 1:33:40	Biswambhar is surprised at the plight of the house and is looking at the unlit broken chandeliers after the show		Day/ Night	Indoor/ Outdoor	Life sized mirror Corinthian columns Pillows Chandeliers	Character Harmony	The arrangement of the pillows, and the broken chandeliers against the backdrop of the life sized mirror which makes the space look even bigger than it is, depicts the emotion
			Day	Indoor			

EMOTION – ANTICIPATION

Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
The music room 1. 10:01 2. 46:09 3. 32:35	Biswambhar is waiting for his guests to arrive for the event at his house		Day/ Night	Indoor/ Outdoor	Staircase Wall light	Unity Balance	The staircase here is acting like a suspense creating element, metaphorically depicting two levels at which Biswambhar his in his state of mind
			Day	Indoor			
	Biswambhar is waiting for news about his family		Day	Indoor	Grilled window Curtain	Character Focus	The slight opening of the curtains, and Biswambhar looking through the grilled window depicts a state of mind where he cannot do anything but wait
Devi 1. 1:14:01	The helper is waiting to see how <u>devi</u> is		Day	Indoor	Arched opening Columns Door	Character Scale Unity	The slight opening of the door in the background, the play of light through the arch openings emphasizes on the large corridor and hence the emotion
The big city 1. 1:18:20	Uma is waiting for <u>Arati's</u> response after asking her to quit her job		Day	Indoor	Grilled window	Focus Character	Uma looking through the grills of window accurately depicts his state of mind
Charulata 1. 1:05:03	Amal got a letter and is opening it		Day	Indoor	Arched opening	Contrast Focus Balance	The character being in the intersection of both the arched openings emphasizes on the emotion
Days and nights in the forest 1. 31:34	Shekhar is waiting for the tribal girls to come		Day	Indoor	Grilled window	Character Focus	Shekhar looking through the grills of window accurately depicts his state of mind

EMOTION – LOVE

Movie	Brief description of context	Frame (with mapping)	Setting		Architectural elements	Nature of element in architectural composition	Inference
<u>Pather Panchali</u> 1. 39:35 2. 47:11	Sarbojaya is feeding Apu		Day/ Night	Indoor/ Outdoor	Plinth Bamboo columns	Scale Character	The setting of Apu sitting on the plinth while his mom feeds him and the bamboo columns create a playful feeling
	Indir is singing to her grandchildren as they fall asleep		Night	Indoor	Wall Lamp	Contrast Focus	The lamp is perfectly creating the shadow of Indir's face on the wall emphasising on her emotion
Devi 1. 16:00	Devi is putting her niece to sleep		Night	Indoor	Curtain Light	Focus Proportion	Depicting the emotion through the shadows of the two characters emphasizes on the emotion
<u>Charulata</u> 1. 15:22 2. 48:00 3. 1:59:16	Bhupati is showing his love to his wife <u>Charulata</u>		Day	Indoor	Wall Chandelier Ornamental furniture Photo frames	Balance Harmony Rhythm	The wall pattern, exquisite chandelier, ornamental furniture all add on to the extent of this emotion
	Charulata is lovingly looking at Amal during their picnic		Day	Outdoor	Swing tied to tree Dense foliage of trees	Character Scale	The setting of the swing and the trees falling perfectly over Amal depicts the emotion of love
	Charulata tells her husband she'll help him with his business		Day	Indoor	Ornamental arched openings Ornamental columns	Scale Proportion Character Balance Harmony	This scene being shot in perspective, and the ornamentation on the columns and openings depict the emotion

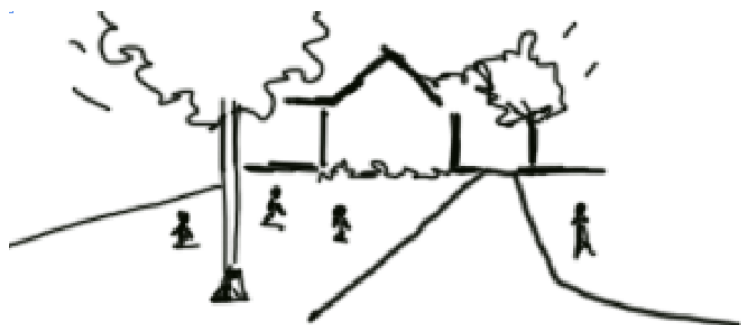
Results

Forming the design vocabulary

Architectural elements	Nature of element in architectural composition
Wall	Focus Scale
Building, Open space in front, terrace	Proportion
Corinthian columns Mirror Rugs with plenty of open space	Balance Rhythm Focus Proportion Character
Open windows Chipped off walls Extended plinth	Scale Proportion Harmony
Sofas Candles	Proportion Unity

Joy-

It is observed that Satyajit Ray has played with the proportion and scale of open spaces a lot to depict the emotion of joy.



Architectural elements	Nature of element in architectural composition
Chair Terrace, open space	Discord Monotony Scale
Photo frame Furniture Wall lights	Character Harmony
Grilled window	Focus Contrast
Columns	Scale Character Proportion
Casement window	Focus Scale

Fear-

To evoke a sense of fear, Satyajit Ray used elements that would help focus on the character in frames. He did so with the help of lights mainly, playing with light from windows as well as artificial sources.



Architectural elements	Nature of element in architectural composition
Plinth	Scale Proportion
Plinth, open space in front of house	
Plain walls Window with grill	Contrast monotony
Columns Animal-fur rug Sofa + table	Character Scale Unity Contrast
Grilled window	Focus Character
Lamp Table Walls	Contrast Focus
Lamp Table Walls	Discord Contrast Focus

Anger-

Grilled windows was a common element used to depict anger by Satyajit Ray. Lamps placed on tables also helped capture the emotion on screen. The elements were majorly used to create a certain contrast in the frame.



Architectural elements	Nature of element in architectural composition
Stained mirror	Focus Character
Stained mirror Grilled window	Character Focus



Disgust –

Stained mirrors were commonly used to depict the disgust while the characters look at their reflections, shooting the frame in third

Architectural elements	Nature of element in architectural composition
Path through the fields	Scale Proportion
Road	Scale Proportion
Shore on the beach	Character Scale



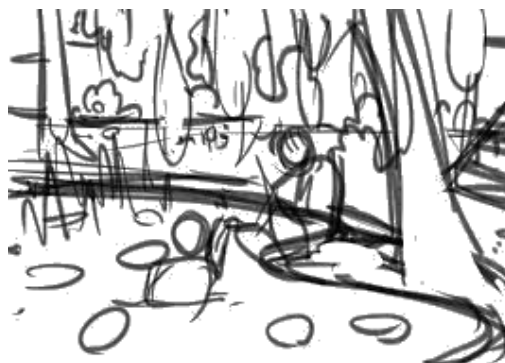
Courage –

To depict scenes of courage, Satyajit Ray chose to shoot it in a natural setting, playing with the scale and proportion, metaphorically depicting a journey to come.

Architectural elements	Nature of element in architectural composition
Double door	Focus Proportion
Terrace, open space	Proportion Scale Monotony
Corinthian columns Stained mirror Chipped off walls	Character Scale Focus Harmony
Louvred window	Focus
Natural elements – Lake	Scale Proportion
Path with trees	Scale Proportion
Balcony Trees	Scale Proportion
Path with trees	Scale Proportion

Wonder –

To depict wonder, or rather, a sense of curiosity, Satyajit Ray commonly used a setting in trees with dense foliage, where the characters would look into the distance, lost in their thoughts. Other architectural elements such as doors were purposefully left open in the frame, or windows, metaphorically depicting curiosity



Architectural elements	Nature of element in architectural composition
Life sized mirror Corinthian columns Pillows Chandeliers	Character Harmony



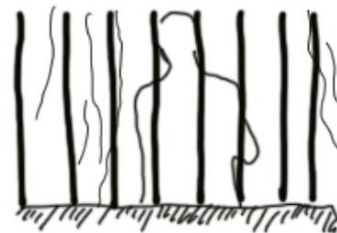
Surprise –

The emotion of surprise was captured perfectly in ‘The music room’ where the haphazard arrangement of the objects in the frame, the mirror and the broken chandeliers all emphasized on the emotion

Architectural elements	Nature of element in architectural composition
Staircase Wall light	Unity Balance
Grilled window Curtain	Character Focus
Arched opening Columns Door	Character Scale Unity
Grilled window	Focus Character
Arched opening	Contrast Focus Balance
Grilled window	Character Focus

Anticipation –

Grilled windows and the slight opening of curtains were the suspense-creating elements used by Satyajit Ray as observed commonly in all the movies. Even staircases with light falling on the character were used to create a sense of anticipation.



Architectural elements	Nature of element in architectural composition
Wall	Scale Proportion Balance Focus
Lake	Scale Proportion Focus
Wall Grilled window	Contrast Focus
Wall	Scale Proportion Balance
Building	Balance Focus Scale
Columns	Character Proportion
Grilled window Bed	Focus Proportion



Walls Curtain	Discord Contrast Rhythm
Curtain Light	Rhythm Contrast
Furniture	Discord Unity
Arched opening Lamp	Focus Contrast Unity
Grilled window	Focus Character Monotony
Columns	Monotony Balance Scale

Sadness –

Walls were used as a visual separating element usually between two characters in the frame. Columns were also used where they would allow a play of light through the arched openings to evoke the emotion.

Architectural elements	Nature of element in architectural composition
Plinth Bamboo columns	Scale Character
Wall Lamp	Contrast Focus
Curtain Light	Focus Proportion
Wall Chandelier Ornamental furniture Photo frames	Balance Harmony Rhythm
Swing tied to tree Dense foliage of trees	Character Scale
Ornamental arched openings Ornamental columns	Scale Proportion Character Balance Harmony

Love –

Satyajit Ray mostly used elements with exquisite ornamentation as a means of depicting love in the setting. He also used trees over the character in a natural setting.



Conclusion

Contribution to knowledge

Understanding which elements correspond to which emotion, how they are evoked, gives us an understanding on the human emotional relationship with the built environment.

This helps us arrive to an appropriate design conclusion that may help in incorporating the emotional aspect in design.

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