

Echo- The Ajrakh Imprint

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Abstract

The goal of this research is to find out how traditional textile art has adapted to the fast-paced, increasingly globalized marketplace around the world. The Ajrakh - a block-printed textile from India originally used by the ruling class as an exclusive garment - is the focus of this study because it continues to be used today as a fashion garment on runways and by low-caste Dalits in India to make clothing for special occasions. The study will investigate the history of Ajrakh as well as the role of master artisans in the production of this textile and the establishment of resource centres to preserve these techniques. The research combines macro-level systematic analysis with an overview of critical design principles (silhouette and textile) to investigate how the fashion industry may address the ongoing disruptions of traditional trade and technology while creating new opportunities for creative expression.

INTRODUCTION

Study Background

The two major components of combining two cultures means that the preservation of textile heritage and the creation of engaging cultural narratives both contribute dynamic potential to both cultures. This is evident in Ajrakh, it is one of the oldest and most complex forms of block printing and is an important part of the cultural and geographic history of the Indus Valley Civilization. Ajrakh block-printing has been practiced primarily in the Kutch region of Gujarat and the Sindh province, where it has deep connections to both the region's landscape and people. While some might think that Ajrakh is just a surface treatment, it is actually a fully developed and complexly structured system that employs various types of mathematics (e.g., geometry and rhythm) in a symbolic, cosmic manner.

Ajrakh block-printing methodologically employs a very specific and intricate multi-step process of resist-dyeing, mordanting, and repetitively hand-block printing with natural materials derived from plants (e.g., indigo and madder); other organic materials (e.g., pomegranate rinds); and minerals (e.g., iron filings). Ajrakh's visual language relies heavily on symmetry and has complex, highly structured grids, with irregularly shaped grid borders that entirely enclose the central field of the

garment while repeating motif combinations of the jall (web-like patterns), mizan (balance), medallion floral or star-shaped motifs) and others within the grid, as well as creating a repeated (or echoed) impression of the previous block of pattern by maintaining the same logic of spatial alignment, mirror imaging or tessellation. Overall, the research project, titled "Echo: The Ajrakh Imprint" which is undertaken to analyze the ways in which these age-old principles of mathematical symmetry, rhythmic repetition, and logic of resist-dyeing can be abstracted and transformed into the context of contemporary fashion design aims to shift the point of reference of Ajrakh block-printing from a two-dimensional flat textile to being an influence on three-dimensional architectural silhouettes. The aim of Echo: The Ajrakh Imprint is to explore the possibilities of applying ancient principles of mathematics (symmetry), design (repetitive rhythm), and dye logic (resist dye), to contemporary fashion settings through the abstraction and translation of Ajrakh. The project intends to create a new context for the Ajrakh craft by moving its perspective from a flat two-dimensional textile to a three-dimensional architectural shape.

The research will explore the balance between maintaining the essence and the natural colour palette (deep indigo, madder red, rich midnight black), as well as the cultural history of Ajrakh, while allowing Ajrakh to interact with

modern/experimental design forms, by pulling Ajrakh out of its traditional rigid clothing structures.

Problem Statement

Traditional textiles such as handloom and craft have gained great worldwide recognition yet still the use of Ajrakh as a traditional textile to make clothing in Western fashion is often at greatest risk of cultural stagnation and being treated superficially. Ajrakh designs are typically used as flat, monochromatic textile surfaces for making a limited number of silhouette-style (saree, dupatta, kurta) garments which do little to exploit the geometric possibilities embedded within the logic of the fabric for construction, drape, and pattern-making. Furthermore, when the Ajrakh textiles are used by modern day Westernized designers they suffer from superficial styling that strips the originally told narratives from the meaning of the craft and instead create commercial commodities from sacred, labor-intensive crafts. Most significantly, there is limited design research on how the symmetrical, mirrored structure created from the blocks of Ajrakh can be synthetically developed using contemporary Western and fusion silhouettes (e.g., jumpsuits, capes worn askew, bustiers and bifurcated trousers) through an intentional design approach. Without a fashion designer who adopts the craft logic as the basis of their concepts, Ajrakh textiles risk losing their potential to effect transformational change for today's global consumers.

Research Aim

The main goal of this research is to investigate the mathematical mirroring patterns and geometrical frame of ajrakh block printing, and to identify these attributes using a systematic approach to design as a contemporary five-piece garment collection created from this research study. It also aims to showcase how the characteristics of "echoing" and mirrored images of the textile can influence the shape, movement and arrangement of contemporary fashion design, allowing for an adaptable and impressive medium that maintains traditional cultural memory and extends the limits of modern artistic patterns.

Objectives of the Research

The Project has the following Objectives to achieve the listed goal:

1. Analyze the structural geometry, grid formations and motif repetitions of traditional Ajrakh prints in order to gain an understanding of the mathematical framework that underpinned the creation of Ajrakh prints.
2. Identify ways of abstracting Ajrakh's mirror-image and "echoing" visual identity into structured layout patterns for modern garment design and construction.
3. Create an integrated contemporary colour palette based on traditional natural dyes (using references like Pantone 1815 CP, 296 CP and 7622 CP) that bridges the historical authenticity of the Ajrakh design, while also integrating contemporary colour ranges.
4. Create and develop a five piece capsule collection of garments titled "Echo: The Ajrakh Imprint", to express the logic of the resist-dye grids into the specific contemporary garment forms of tailored coordinates, modular dresses and structured outerwear.

Research Questions

The study will attempt to answer the following primary questions:

- (1) In what ways can traditional Ajrakh mathematical grids and mirror symmetry be used as an engineering framework for contemporary Western and fusion fashion silhouettes?
- (2) In what different ways can the concept of an "echo" (e.g. repetition, reflection, shadow) physically exist through selection of fabric, alignment of prints and patterning?
- (3) How can a designer maintain traditional craft identity while also meeting the needs of modern high-end fashion by utilizing world-class techniques in the creation of clothes?
- (4) How do Ajrakh's organic and historically-driven colors perform when applied to structured modern textiles and styled with current high-fashion sensibilities?

Scope of Research



This research project is scoped out conceptually, practically, and structurally: Conceptual Scope: This research focuses on the use of the properties of symmetry, repetition, and mirror-image in relation to Ajrakh textile grammar, which are used as metaphors and structural guides for fashion design.

Design Scope: The output of this research is limited to five garments created as part of a capsule collection (contemporary luxury/premium) using silhouettes defined below in high-fashion modern design categories: a flared co-ordinated outfit with peplum top; a structured corset waist maxi dress; a sleek jumpsuit with crops; an asymmetrical long-sleeve tunic worn over columns skirt; and an elongated split-front overlay coat worn with wide-leg trousers.

Materials and Colour Scope: Each research has a visual research medium defined by a highly specific 10-colour board that represents the main colours used 'Midnight Sky' (Pantone 20-0195 TPM), deep rich blues (Pantone 2767 C, 296 CP), Madder Reds (Pantone 1815 CP, 7622 CP), bright pink colours (Pantone 191 C) and soft neutral colours (Pantone 11-4101 TCX, Pantone 7528 CP) used to complete the overall aesthetic of the product.

Exclusions: The study does not try to change or recreate the original artisanal technique used to create the 16 steps used to print Ajrakh fabrics; therefore, this study will use existing artisan outputs and textile simulations of the artisan printing process to replicate how these finished prints are arranged/cut/sown to make the garment.

Study Purpose

The research has significance for many people working in fashion: For Cultural Heritage: This project shines a new, high-fashion spotlight on ajrakh, thus turning the traditional view of handwoven fabrics and heritage prints as outdated/casual into one of potential for commerce in the global market; For Fashion Designers/Academics: This study illustrates the "Craft Led Pattern Cutting" process and establishes a method by which designers can generate ideas for the final silhouette, drape, and seams of a garment, based on mathematics inherent in the construction of indigenous textiles; For Industry/Consumers: As consumers increasingly seek out "slow fashion with a story behind it" the collection will speak to this need by combining cultural memories and geometry, which means the collection reflects the culture of the people who made the garment(s) through a way that makes it visually modern, appropriate and effortless to wear.

RESEARCH METHODOLOGY

Research Design

This project incorporates a blend of qualitative, quantitative and hands-on ways to create a new clothing collection from existing patterns that have either already been printed on fabric material or are in the form of a digital pattern on a computer screen. The qualitative portion of the research includes an analysis of traditional layout rules (i.e., where cuts are made in patterns), geometric symmetry, and craft history as archived in Designer portfolios. The qualitative analysis will also include examples from luxury fashion designers and art labels that have incorporated heritage prints into contemporary fashion as an inspiration for conceptual outcome of the collection. The quantitative portion of the research included surveying colleagues for feedback about design concepts by sharing them with fellow researchers and other designers within the same industry. This survey provided structured and quantified information about elements of the

design, including visual balance, pattern symmetry, and commercial appeal, which all assisted in determining how best to position each printed fabric to achieve the desired result. The experimental portion of the research consisted of an experiential research study on how printed materials behave when pattern-cut and sewn into today's Western style silhouettes, using pre-printed fabric materials rather than creating a new design from scratch. The results of the survey as well as the research conducted by the designer assisted in determining mathematically where to place each design panel, design motif and border throughout the collection. In addition, the data provided by the survey results and designer research enabled the designer to effectively manage the placement of darts and seams so that mirror-image pieces of the same design align correctly throughout all three dimensional forms.

Tools and Techniques

Digital and visual elements have all been combined to establish the mood, colour palette and seasonal direction of the collection as a whole; this included conducting trend research, compiling colour boards and revising the fabric sourcing to understand how the collection linked thematically; it was very important that all the elements related back to the current seasonal trends. There were no more traditional hand sketches used during the process, however both the technical and creative development relied heavily on digital design illustration methods. The primary software used to create the final range illustrations, develop the digital mood boards, plan the colour specifications, and design engineered placements of the symmetrical pattern layouts was Procreate and Adobe Illustrator.

Findings and Discussion

In this chapter, information will be assembled to assess what methods may be employed to convert classic printed geometry into contemporary and functional garments. A comprehensive evaluation

of the success of the fashion collection in meeting its objectives will be based upon the combination of the designer's archives, results from a peer survey, and data from draping/pattern making trials which were carried out to test out the collection. The body of work presented in the succeeding chapters will look at any broad similarities and differences across all styles in the entire range, present-day market trends in clothing, consumer preferences, and any characteristics of the featured materials from prototyping that contributed to making the "Echo" collection a reality.

Mood Analysis



The Collection's visual direction was able to evoke a combination of strong cultural history with an edgy high-fashion look. After looking through the images in this series, it is obvious they give off a sense of mystery, a traditional way of identifying oneself, and a level of confidence that is very contemporary. Contrasting the dark background against the bright colors of the print creates a new yet nostalgic energy. There's a story to the final selection of garments. The collection is more than just a traditional product. The collection is an assemblage of garments that represents a collection of researched creative ideas.

Trend Analysis

Drawing from contemporary global culture, we will

develop design ideas for "Meaningfully Sustainable" and "Craft Forward" clothing categories. Unlike the quick responses to recent runway trends, we will lean toward a slower, more deliberate pace (i.e. "slow fashion") and create clothing collections using meaningful narratives with seasonally structural, geometric balance. Classic hues and block prints will be transmuted into modern, stylish Western apparel using slow, deliberate design. Our Western apparel will correspond with the ongoing consumer demand for culturally diverse clothing innovations by combining classic style with culturally diverse clothing narratives.

Consumer Preference Findings

Results from the researcher peer survey suggest that Heritage Prints are in demand for use in updated, more casual (functional) clothing. The survey results suggest that the overall style of Heritage Prints continues to be seen as impractical for everyday use; however, the structured "hard" style of Heritage Prints is seen to have more market potential (i.e., tailored jumpsuits, co-ordinated sets, clean lined dresses). Survey results also suggest that an even distribution of elements will improve the perception of luxury and will entice the current market more. Qualitative Evaluation of Textile Properties through Fabric Testing. The fabric samples that were tested for this collection demonstrated variability in textile properties in a qualitative sense for each of the tested fabrics, and demonstrated a variety of responses when interfaced with the geometrically, and deco-printed designs. The printed fabric samples were constructed using satin silk. Satin silk is a highly fluid, draping fabric with a high luster and a slippery surface, which in this context provides a beautiful edge and symmetry. However, when satin silk is sewn with curved seams and darts, it produces a loss of integrity for the linear edge and symmetry of the printed sections. To counterbalance the integrity loss in satin silk, a cotton fabric is used for the unprinted sections.

Prototype and Garment Evaluation



Five finished prototypes were tested on mannequins, straight after they were expected to be usable (on the same day. The tests were conducted successfully. It reinforced preceding notions of "echoes" and such patterns are not only theoretical but real pieces as well. The only thing that made this entire procedure function as a new technique for creating garments was to line the pre-printed borders up with important lines on the garments. This meant the center front of the corset dress would perfectly match the front of the jacket and two parts of split pants could meet each other right in the middle. Symmetrical designs as seen from all angles. One thing remains to be determined: does it really make sense to use pre-printed pattern cutting guides for creating a visually balanced and unified collection? If it does, it may be a perfect example of cutting edge, top-notch fashion in today's world.

Color Forecasting Results



The colors in this collection are perfectly on trend – a blend of classic hues and contemporary, urban feel. The basis is old fashion craft and heritage, rich in indigo, in rich reds and deep, iron-like blacks.

These trend reports reveal that these saturated, bold colours are catching the eye of viewers. They are available throughout the year and will suit a great deal of markets—don't expect to see them fading anytime soon. Although these colors are vintage, they still look fresh in the luxury fashion climate today. They complement crisp whites and bright patterns, lending a new look to classic style.

Interpretation of Findings Related to Market Needs

Research revealed that people are seeking fashion with a tale and style. They are rejecting the manufactured items, and seeking items of genuine cultural significance, which are also on their own style. This is emblematic of how heritage patterns have been transformed into clean, western patterns. Although people don't always favor traditional outfits, they do love traditional designs, particularly when they are found in versatile garments such as tailored jumpsuits or matching suits for casual wear.

Comparison with Global Trends

The evolution of fashion is taking the regional approach and you can see it in today's streetwear and luxury labels all around. The styles that designers are now going for are bolder, geometric patterns and artisanal textures; almost every country oriented brand is going for that. My project goes right with that. I use contrasting colours, lines and shapes to create patterns that pop. However, I don't make my designs short-lived fashions, but something that is a part of something bigger, a system that allows my designs to live in harmony with the relevant scene of luxury designs of the present-day global market. The collection is offered for a customer who appreciates modern design, art, tradition and quality. This individual is looking for one-of-a-kind fashion pieces that declare individuality and narratives—along with the flexibility you would anticipate from contemporary attire. The fluid satin silk combined with structured cotton blends that urban balance: classy, sophisticated, but not stiff. Fashionable people should see these layouts, which are sharply polished, mirror image, and should really be invested in for the long haul. I love the concept of Slow Fashion, and I do it in a

straightforward way, without going through the fashions of the day. It's about garments that are designed to be a staple and not a seasonal look—the result is sustainable practices by design. I'm into pattern rules from history so it's not a momentary piece. Also, by cutting off panels and taking advantage of the widths of pre-printed fabrics, I minimise production waste.

CONCLUSION

This last chapter examines the project's success in achieving its aims (including the design concept's success in visual, financial and representational terms). We also take account of environmental and cultural issues that it addressed in production. The last set demonstrates how design elements and geometric patterns derived from heritage and historic clothing can be blended with modern fashion, without losing authenticity. The collection also shows how much historic design can be incorporated in contemporary design in using mirrored layouts to create three dimensional clothing by using flat layers of fabric.

This collection has provided a need for premium clothing that can tell a story and will appeal to customers who want to be able to purchase clothing that is designed with an interest in the designs themselves and the history behind those designs. The use of modern styles such as structured jumpsuits and fitted dresses allows new generations of creatively inclined customers to easily purchase this type of clothing.

Feedback from peer researchers indicates that current consumers of clothing are receptive to purchasing items that feature heritage-based designs when such designs are presented in functional and polished retail environments. The design of the garments also addresses functionality, by providing aesthetically pleasing designs with comfortable movement. The combination of smooth satin-like silk and structured blended cotton to construct the garments provided an advantage in relation to the difficulties associated with cutting slippery fabrics. By utilizing smooth silk materials as borders on the garments, it was possible to ensure that borders would remain in line with each other when the person wearing the garment moved. By prioritizing

traditional styles of fashion over those that are produced rapidly, this project is an advocate for the practice of slow fashion.

An additional benefit of the design of the garments was a result of the creation of patterns from mathematical templates that resulted in minimal fabric waste when cutting the patterns out. The use of digital programs like Procreate and Adobe Illustrator allowed for a more accurate identification of intricate patterns on digital templates prior to cutting them out utilizing a digital reference (eliminating significant time and cost). The project created a successful way to incorporate heritage textile designs into modern luxury markets.

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