Hope and Typography

Asking a Shadow to Dance – Creating Poetic Spaces through Interactive Typography

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Abstract: The rapid co-evolution of technology and typography has uncovered possibilities for creating immersive experiences that push the limits of expressivity. Increasingly, emerging forms of media are beginning to encompass temporal and interactive behaviours. This project envisions Kalidāsā's venerable poetry — Meghadūtam — as interactive, three-dimensional typographic forms, moving through space. Type is viewed through the lens of computation to weave form, motion and interaction to take readers through the poem's emotional journey. If poetry is a mere shadow of emotions felt, by asking a shadow to dance, we urge to bring words to life, to hold a stronger presence, a deeper voice.

Key words: Typography, Expressive, Interactive, Media, Poetry, Vernacular, Computational.

Overview

The convergence of technology and typography has pushed type to the limits of expressivity. Increasingly interactive and immersive media has changed the universe of typography to encompass animation, interaction and other affordances. The primary purpose of typography has always been to be read — to convey content in the clearest way possible — but expressivity amplifies and enriches the experience of reading. Historically, designers have created exquisite examples of expressive typography in print and film, but the emergence of computers have now opened up opportunities for experimenting with interactive typography, creating a need for more nuanced terminology and conceptual frameworks to describe and design interactive typographic forms. India has a rich diversity of vernacular scripts that are the carriers of our traditions and culture, particularly in the form of vernacular poetry. This project explores the space of using interactive typography to create new experiences through vernacular poetry.

Introduction to Expressive Typography

The study of expressive typography focuses on how form manipulations in a typographic piece can intensify content by conveying emotion, a personality or tone of voice. The history of graphic communication is rich with explorations that expand both the communicative and expressive range of type. In any typographic presentation, the literal meaning of words and sentences on a page is accentuated by its visual appearance and layout.

This duality of purpose between the visual and the verbal aspects of typography is well expressed by Cal Swann in Language and Typography. He says, "These two distinct areas often come together in practice as there is clearly a very strong relationship between the conception of the words as a message and their transmission in visible form."[1]

The Influence of Media on Typography

Any communication effort presupposes the existence of a communication medium. The vast majority of typography's history focused on static presentation media like print and sculpture. This period of intense exploration led to the development of conceptual tools, terminology and models for designing and describing typographic attributes in print media. For instance, terms like "leading" and "kerning" first originated from the physical mechanics of arranging metal types.

For the purpose of contextualising the evolution of expressive typography, it is useful to classify presentation media into three categories: static, temporal and interactive media. Static presentation media like print, came into existence early and hold the richest collection of experimentation and academic study of typographic forms. Typography flourished in print-based media and established itself as an essential tool for visual communication.

While static typography is fundamentally focused on a fixed presentation, experimental typographers pushed the boundaries by manipulating letterforms in varied ways and introducing the analogies of motion in type. This line of experimentation is most clearly seen in the works of the Futurists and other Concrete poets like F. T. Marinetti and Ian Hamilton Finlay who deconstructed linear writing, expressing meaning through size, weight and placement while encouraging readers to marshal all their senses to experience the poetic text. In the 1980s and 90s, Neville Brody explored typefaces at the borderline of legibility in his works that featured letters with soft, often blurred edges (FF Blur) and geometric shapes (FF Virtual).

With the introduction of film and television in the 1950s, designers began to experiment with time-varying or temporal presentation of type. Temporal media expanded the potential of expressive typography by enabling typographic forms to evolve over time. Pioneering work by Saul Bass in the 1960s movie opening and end credits featured typography that was truly kinetic. For instance, the opening title sequence of North by Northwest, a piece created by Saul Bass contained animated text that "flew" in from off-screen and finally faded into the film itself.
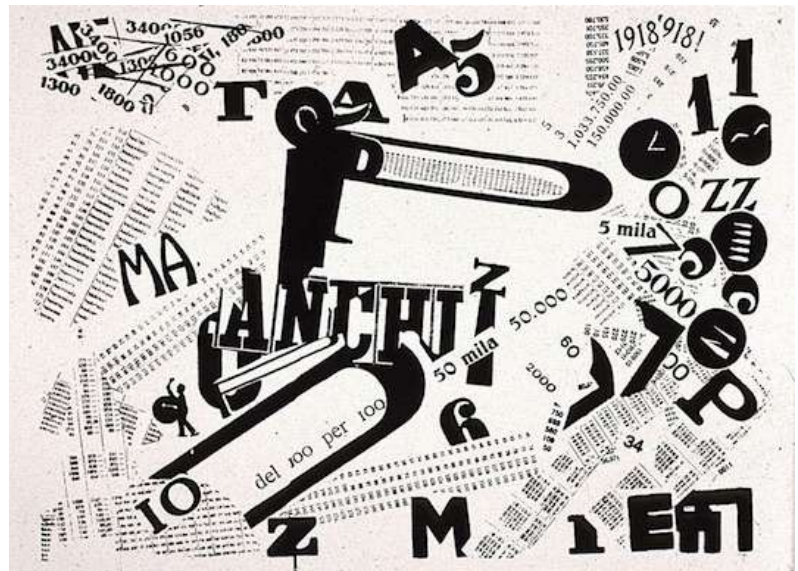

Fig 1 : Invitation to a Dadaist evening, Tristan Tzara; Fig 2 : A Tumultuous Assembly: Numerical Paper Sensibility, F T Marinetti; Pic Courtesy : The New Typography, Book by Jan Tschichold.

Typographers soon realised that the language of typography derived from its origin in static media was no longer adequate to articulate temporal forms. The study of temporal typography began in earnest with several classification schemes and terminology proposed by researchers like Yin Yin Wong[2] and Barbara Brownie[3].

One such example is the distinction between form and identity seen in examples of fluid typography, a term coined by Brownie. Describing the holographic poetry of Eduardo Kac, Brownie observes that, "A fluid form evolves over time to the extent that its meaning also changes. A single form may be observed in one moment as having a verbal identity, and in another moment, once it has transformed, as presenting another identity."[3]

In contemporary times, a similar change in the landscape of media has come about with the rise in digital devices that allow readers to directly interact with and manipulate typographic forms. If the time-varying characteristics are considered the essence of temporal media, the new affordance brought about by digital media is interactivity. This new design opportunity for using interactive medium of presentation was explored early
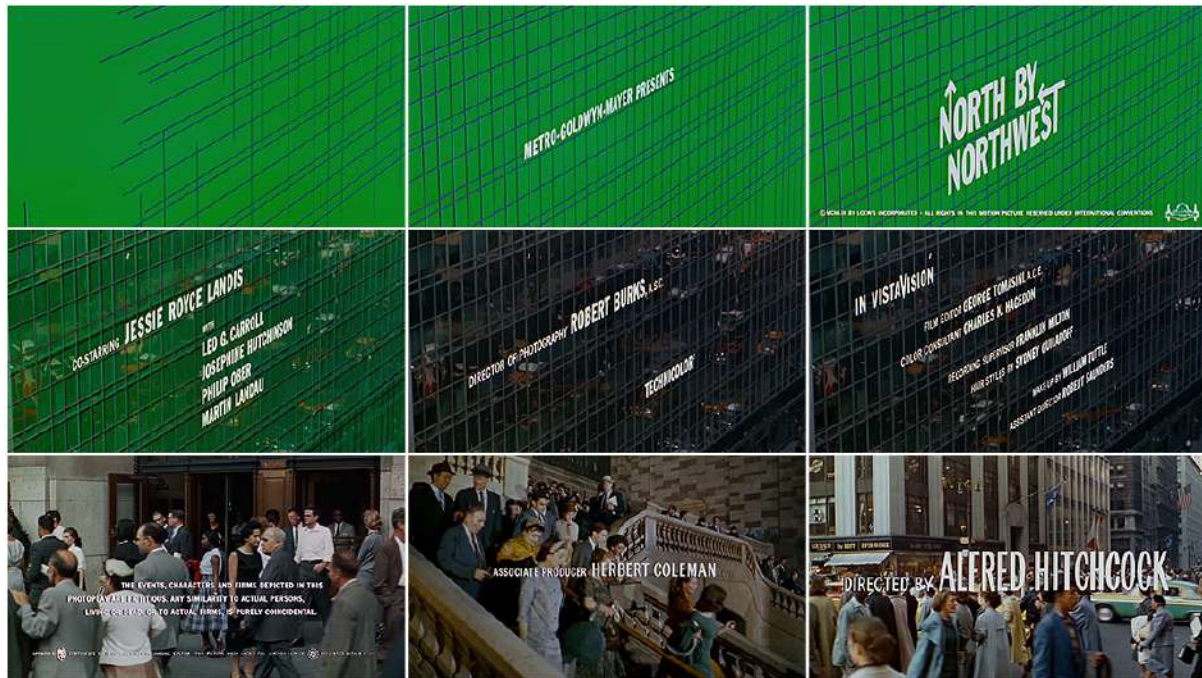
Fig 3 : North by Northwest Credit Sequence by Saul Bass; Pic Courtesy : Google Images.

by pioneers like Muriel Cooper in her interactive, three-dimensional presentation of text in Information Landscapes at the MIT Visible Language Workshop.

The Nature and Evolution of Media

One way to tease apart the role of media in typography is to study the general nature and evolution of any communication medium. Marshall McLuhan, in his classic analysis, noted that the medium through which we choose to communicate holds as much, if not more, value than the message — hence his famous quote "the medium is the message". McLuhan saw media as an extension of the self, a technology that extends natural human abilities to think, feel and act. Every new medium brings with it, a psychological, physical and social impact on the ways in which we perceive and process information.

One such characteristic of media's evolution is the phenomenon of newer media subsuming the functionality of older media. Many illustrative examples stand out in the history of typography. Jason Lewis, in his thesis on Dynamic Poetry[4], observes that "it took several decades for film to fully separate itself from theatre and photography, and much later, for video to separate itself from film". Consequently, during the initial development of any media, there is a period of time in which designers rely on paradigms and terminology of previous media, a phenomenon Jason Lewis terms as content-lag. As designers get more familiar with the unique design opportunities in a medium, there's a development of an aesthetic native to the medium and conceptual frameworks specially suited to exploit those opportunities. Continuing with the example of typography in film,

separation of film from older forms of media, led to the pioneering works by Saul Bass and others and the subsequent academic study of kinetic and fluid typography.
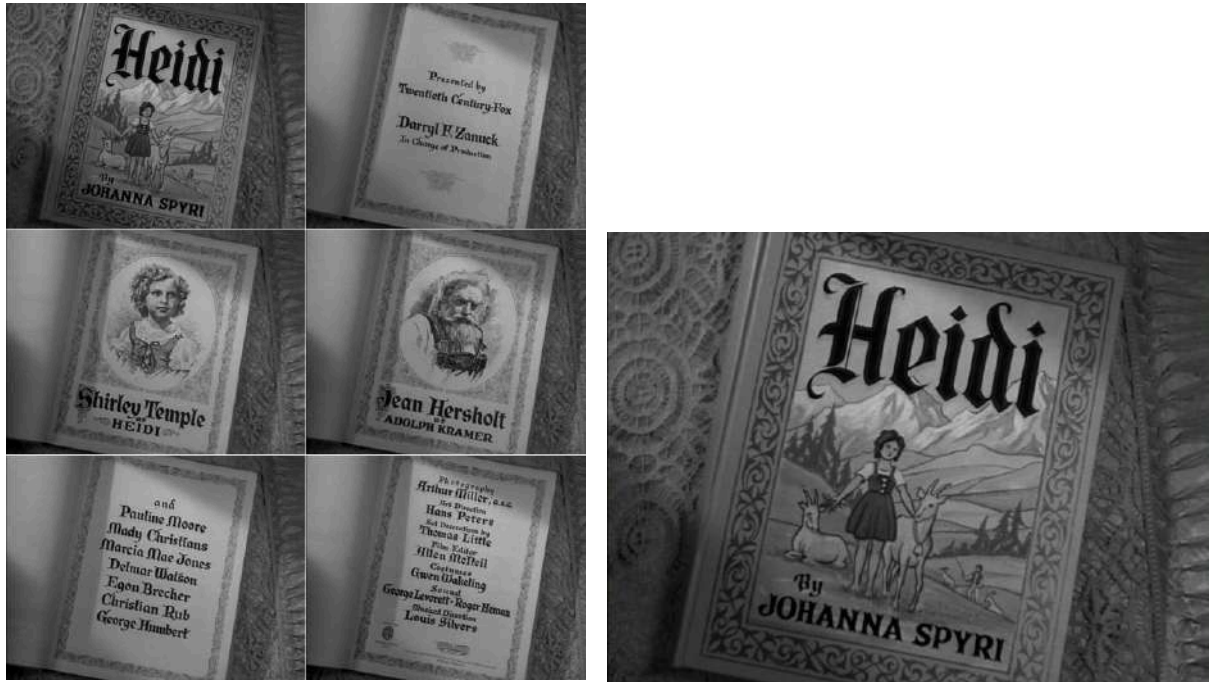

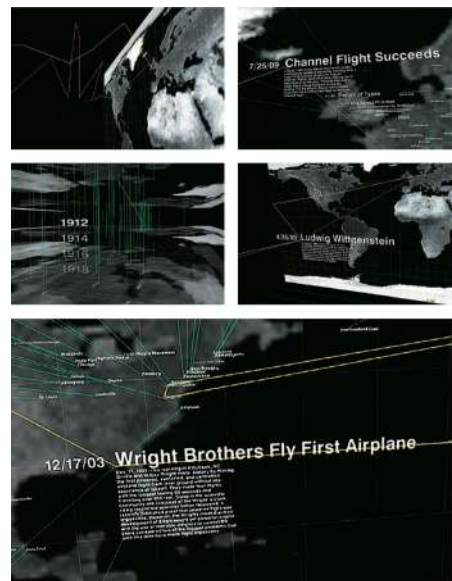Fig 4 : Heidi Credit Sequence; Pic Courtesy : Movie Titles Stills Collections.
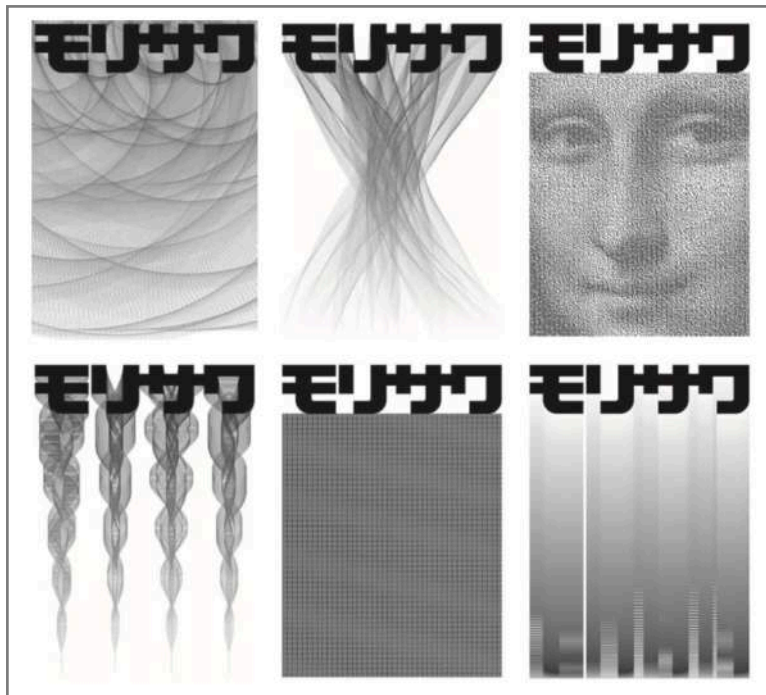

Fig 5

Fig 6

Fig 5 : Schiff by Ian Hamilton Finlay; Ian Hamilton Finlay's concrete poetry began on the page but then moved increasingly towards three dimensional figuration and afterwards to site-specific art in the creation of his sculpture garden. Pic Courtesy : Wiki Commons.

Fig 6 : The Millennium Project – Lisa Strausfeld, Pentagram Design. Pic Courtesy : The Virtual Typography Book by Matthias Hilner.

Fig 7 : Morisawa – John Maeda. Pic Courtesy : The Virtual

Fig 7

Media and Affordances

As McLuhan noted, every media bring changes to the way we perceive and process information. When a new medium is still in its infancy, it is difficult to separate the essence of the medium from its rapid technological advances. Put another way, every media offers new affordances for the design of new typographic forms. Static media allowed designers to experiment with fixed attributes of form, colour and layout. Temporal media introduced a new affordance of time allowing these static typographic attributes to change and evolve dynamically. Similarly, the essence of interactive media is its ability to respond to the reader's action, i.e., interactive media affords typographic forms to actively interact with readers. In every mature medium, typography adapts to the affordances particular to that medium and hence develops a native aesthetic which cannot be replicated in previous media.

Nature of Interactivity

Since interactivity is the defining characteristic of digital media, it is important to define and classify different forms of interactivity. Wong in her seminal thesis on Temporal Typography defines interaction as any form of user control in a presentation. Furthermore, she considers any typographic artefact with a predefined presentation sequence as a form of passive interaction. Examples of kinetic typography that are consumed in a linear way by the reader fall into this category. If the reader has non-linear access to a presentation

sequence — for instance, with a time slider — then the presentation is considered to exhibit active interaction. It is important to note that per Wong's classification, all static and temporal media exhibit passive interaction, while only interactive media may potentially exploit active interaction.

John Maeda in a series of articles called *Metadesigning* took a slightly different approach to teasing apart the fundamental vocabulary of interaction. After experimenting with graphics that change with time, Maeda expanded his scope to what he called "reactive graphics" or "visual experiences that respond to user input in real-time". The core properties of a reactive graphic is a set of actions that the piece provides to the user, who upon acting on one of these actions sees an immediate response.

Jim Campbell further classifies "reactive graphics" distinguishing controllable systems from responsive systems. A controllable system is akin to a monologue or a command-and-comply system common in traditional graphical user interfaces where the user issues a command and the system complies by acting in response. In a truly reactive system, this flow of communication is two-way with both the user and system continuously reacting and responding to each other. This classification is evocative of Chris Crawford's definition of interactivity as dialogue:

"Interaction: a cyclic process in which two actors alternately listen, think, and speak."
— Chris Crawford, The Art of Interactive Design

Expanding on the definition of interaction as a dialogue, Jason Lewis further introduced his classification of interactive typography. The core of the classification scheme are the notions of dynamics, or interaction from the point of view of the presentation medium and response, or interaction from the point of the view of the reader. Typographic objects on the screen can exhibit both dynamic and responsive properties.

The dynamics of an object can be further broken down into constructive, reactive, active or static. A static object does not change with time or respond to the user, while an active object changes its appearance over time independent of any user actions. Based on this terminology we may say that static typographic forms consist of purely static objects while temporal typographic forms may include both static and active objects.

A reactive object, on the other hand, responds to the reader's actions while maintaining its composition. A piece of type that can be zoomed in or out by the user is an example of reactive dynamics. A constructive object is the most complex of all four dynamics and can respond to reader's action changing both its form and composition. The interaction

between a constructive object and the reader can be characterised as a constant exchange of information.

Response captures the reader's view of the system and describes how the dynamics of a piece of type is initiated or maintained. Depending on how elements respond to the reader's input, Jason Lewis further classifies element responses as dependent (dependent solely on the reader's input), independent (elements change independent of the reader's input), hybrid (elements combine both dependent and independent change) and non-responsive (elements do not change at all).

Role of Computation in Interactive Typography

Technology bring out not only evolution in the presentation medium but also changes in the tools used by designer to create typographic artefacts. Before the advent of electronic devices, print media was exclusively made using physical processes such as metal typesetting, photo typesetting and offset lithography. Introduction of digital type design and composition tools changed the design process with the proliferation of personal computers in the late 20th century, taking over the creation of static, and later temporal typographic forms. Interactive typography poses a challenge to contemporary designers as digital design tools have not evolved to allow for the creation of custom interactions on top of type. In 1995, John Maeda moved away from the existing crop of design tools and began exploring "digital graphic design not as a printed image but as computer programs". This trend of using computer code to create interactive typography exploded with the creation of computer languages aimed towards designers, such as Maeda's Design By Numbers (1999) and Casey Reas and Ben Fry's Processing programming language (2001).
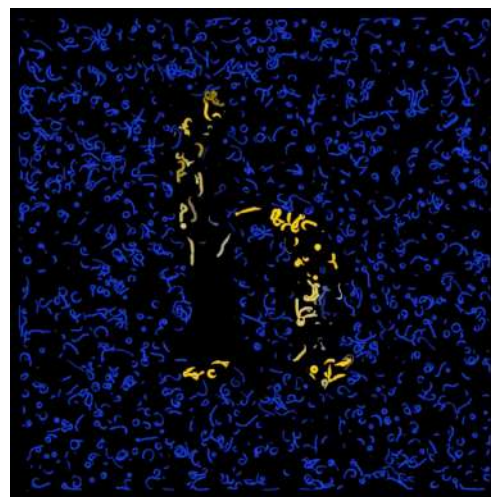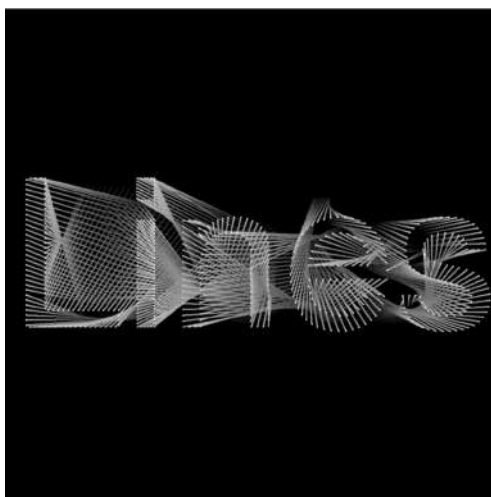

Fig 8 : Generative Typography : Dots and Lines, @laurent.matys; Fig 9 : Dynamic Typography, @insta.ants; Pic Courtesy : Instagram.

In the context of graphic design, computation is a unique tool that allows drawing and manipulation of elements on a screen through a series of instructions or a computer program. It's important to note that computation is only a tool that affects the process of design while the final presentation medium of the artefact may still be print, animation or any interactive surface. Casey Reas considers software as a "unique medium with unique qualities". Ideas that are not easily expressible in other media can be expressed through code. In defence of software as a creative medium, he states that, "For many decades, computers have been more than enhanced calculators. They are media machines, they are imagination engines, computers are tools for thought, and they are design machines. Computers are a unique and emerging medium for the visual arts."

An interesting analogy may be made to the creation of video games. Video games encompass all possible media (from visual, sound and animation to interaction design) and making digital games necessitates a fluency with code. Making games is difficult, but the results are inarguably engaging and inspiring. In the end, the question of whether designers should code, boils down to motivation. Throughout history, designers have always embraced new technology — from the printing press to digital typesetting — changing and refining their process to get more out of typography.

Looking beyond the Digital Revolution

Much of the work in early 21st century was influenced by the introduction of computers and its ensuing change in the tools, process and artefacts created by designers. Today computers are abundant along with big and small screens in every home and every pocket. With the rise of the internet and as many more of everyday objects become intelligent and connected, there is a new world of multifarious opportunities for engaging with typography.

In a course on Transmedia Typography[5], Brad Bartlett and Nik Hafermaas describe the second digital revolution away from screens as follows: "The first digital revolution glued us to our little and big screens, and the second one will liberate us from them to get us reconnected with the physical world in meaningful, beautiful ways." This is the world where screen are replaced by physical space and limited input devices like the mouse or keyboard by sensors like leap motion or Microsoft Kinect that capture people moving and interacting in a space. For designers, such a picture of digital technology allows for moving away from creating experience trapped on screen to creating an immersive interactive world that the reader can participate in.

Fig 10 : Holographic Type Sculpture, Courtesy : Bellevue Arts Museum; Fig 11 : Nota Bene,Courtesy : Mutant Space; Fig 12 : Interactive Poetic Garden, David Small, Courtesy : MIT Media Lab.

Poetry and Expressive Type

Poetry makes for an attractive context for experimenting with expressive typography. The condensed, expressive use of language common in poetry and poetic writings gives ample opportunities for designers to amplify meaning through creative use of type. Another aspect of poetry that is valuable is the intense, rich imagery created using a handful of words, that can be used in creative ways in a typographic piece to render a visual voice to text.
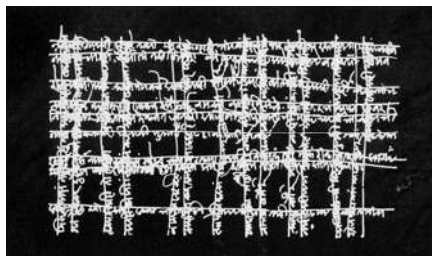

Fig 13 : Concrete Poetry – Ferdinand Kriwet; Fig 14 & Fig 15 : Calligrammes : R K Joshi, Courtesy : Google Images.

Given these attributes, it is not surprising that many experiments in the past, both in the West and the East have used poetry as content for expressive typography. As the content for this project, I have chosen to use Indian classical poetry (or *Kāvya*) because of their cultural significance, profound expressivity and the intensity of imagery depicted. Works of poets like Kālidāsā, Jayadeva, Mirabhai, Tulsidas and Andal, to name a few, are highly charged with artistic imagination, providing the necessary substance for experiments in expressive typography. Classical poems are characterised by their *rasās* or the emotional and aesthetic quality expressed through the piece. Well-known Indian classical poets have created works belonging to the Romanticist, *Bhakti* or devotional and Mystic genre of epic poems. These literary works will be explored to pick and find suitable poems envisaged through interactive, immersive type.

As a performing Bharatnatyam artiste, I have read and analysed these works and reimagined them into performances. These classical poems have stood the test of time, while being deeply rooted in the Indian historical context, yet allowing for varied artistic interpretations.

The central kāvyā piece being considered for this project is Kālidāsā's Meghadutam. This work has helped me identify the scope and character of kāvya, and the essence of imagery in figurative poetry. As Jha[9] notes, "There cannot be any polarisation between meaning and word, content and form, because these dualities are apparent only by analytical dissection. In the actual poetic expression, they are indissolubly united."

Hence, this project will mine expressive possibilities surrounding these aspects. Further analysis will be undertaken to decide which of these pieces will be selected and the direction of the final outcome. Based on feasibility, either the entire piece will be used or suitable stanzas will be selected to represent a coherent whole without losing the essence of the work.

Research Questions

Within the context of interactive, expressive typography and vernacular poetry, the primary research questions posed by this project are:

- Interaction and type. What does interaction offer to the experience of reading poetry? How can designers use interactive typography to experiment, experience and express vernacular poetry?

- Conceptual frameworks and models. Similar to our arsenal of frameworks and terminology for static and temporal typography, what new terminology and devices are needed to help describe and design interactive typographic artefacts?
- Text as image, image as text. How far can we push expression, especially in an interactive medium, before type no longer remains type. When does typography become primarily an image and when does an image become typography?

Personal Statement and Rationale

This proposal brings together my experience of vernacular poetry as a practicing Bharatanatyam artiste, my interest in expressive typography as a designer and my understanding of programming as a creative medium. While many contemporary examples exist of interactive typography in the west, there is a lack of similar work in the landscape of Indian poetry. This state of affairs is accentuated by the discomfort of designers in academia and industry in using programming as a tool. This project hopes to bridge this divide by providing prescriptive examples of interactive, expressive type showcasing vernacular poetry. I believe this contribution is important for the community of Indian designers at large and the students of tomorrow who may be looking for validation for creative use of technology in design. Srishti's capstone is a valuable space for this kind of experimental work free from the constrains of the industry.

Research Methodologies

Given the experimental nature of this inquiry, this project proposes the research methodology of critical making, or an iterative, hands-on approach to creating and critiquing artefacts. The project will be broken into two phases. The first will focus on creating a number of smaller critical examples of interactive typography and using them to articulate and re-iterate on the questions posed, the second phase will use the learning to create a larger, more cohesive piece as an interactive installation. It is expected that the first experimental phase will clarify the application of interaction in expressive typography and generate terminology or conceptual frameworks for describing and designing with interactive type. The second phase will bring these learnings together in service of creating a cohesive experience.

Outcome, Audience and Environment

The final outcome of this project will be an installation showcasing Indian vernacular poetry through immersive, interactive typography. The installation will be designed to be part of a public space and accessible to anyone familiar with reading & poetry.

This experience and understanding will enable me to view Meghadutam through various lenses and perspectives, and to showcase it to the present-day audience. Some initial ideas that will be considered as part of this outcome are :

1. Generative typography created using variations on typographic attributes.
2. Incorporating natural user interactions through the use of physical sensors.

Conclusion & Future Directions

The possibilities with interactive typography extend far beyond the scope of this project, both in terms of content and tools. While this proposal is focused on using poetry as the primary content for explorations, it will also be worthwhile for designers to pursue experimentation with more open-ended literary forms like storytelling and narratives, or combining expressive logotypes with interactivity. The tools used for sensing and manipulating interactions are ever evolving and cannot be exhaustively studied in any experimental project. Beyond tools like Leap Motion or Microsoft Kinect, virtual and augmented reality devices are becoming more commonplace and approachable. A future exploration may find fruitful uses for these emerging forms of media as part of the onward journey of progress in creative typography.

Acknowledgements

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