

# Fragments of a Conversation: Constructing Narratives with Tangible Illuminated Cubes

## ABSTRACT

In this paper, I describe *Fragments of a Conversation*: an art installation of a set of tangible electronic paper cubes for composing visual narratives. I present my design and fabrication processes, how the cubes simple circuit drives the viewer interaction and related discussion.

## Keywords

Storytelling, papermaking, craft, tangible, art.

## INTRODUCTION

Narratives are important to our sense of community and enable us to communicate our needs, memories and desires to those around us. They operate on the idea that images are parallel with language. By placing two images in relation to each other, a third meaning automatically arises: a story that the mind creates to fill the gaps, to link images through associations, possibilities and histories.

*Fragments of a Conversation* is an art installation of paper cubes whose luminance and arrangement are controlled by the viewer. It enables participants to hijack the creative process and tell their own visual stories by combining images in configurations that are meaningful to them.

## DESIGN AND FABRICATION

*Fragments of a Conversation* is made of forty handmade paper cubes embedded with small wide angle amber LEDs, tilt switches and batteries. Every face of a cube presents a unique high contrast image which portrays themes of nostalgia, fantasy, childhood memories and trauma (see figure 1).

The electronics components are positioned in the center of the cubes and held in place by a transparent mylar structure which allows the light to illuminate all faces of the cube uniformly and without any occlusion. This light invites the viewer to hold the cube by creating a feeling of warmth, intimacy and comfort, which causes the tactile experience of the object to become extremely personal.

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**Figure 1. Single cube as a viewer manipulates it.**

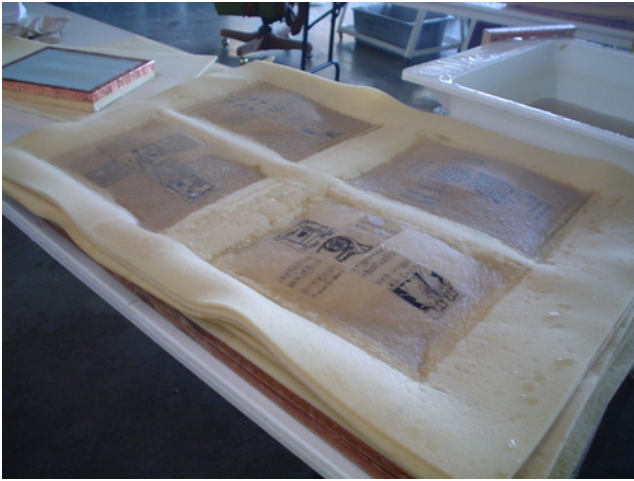
Additionally, the cubes are made out of handmade paper to preserve a rich and sensual surface texture that invites viewers to touch them.

Papermaking is a traditional craft composed of three main steps: preparation of the fibers, sheet formation, and drying. Initially, natural or recycled fibres are broken down and converted into pulp (a concentrated mixture of fibres suspended in liquid). Secondly, the pulp is further diluted with water and drained through a fine-mesh moving screen to form a fibrous web. This web is then pressed and dried into a continuous sheet of paper that can take any shape and consistency (see figure 2). Making my own paper allowed for a fine control of the cubes' opacity and ultimately how the light is diffused. Additionally, through a process called inclusion, it allowed me to embed images in between two sheets of paper, so that they could become an integral part of the paper and indistinguishable from its surface.

## INTERACTION

As viewers grab and manipulate the cubes, their movement triggers a tilt sensor that determines if the lights are to be turned on or off. This way, as the cubes are rotated and the viewer experiments with different configurations, certain images are illuminated and revealed, while others are obscured and hidden away. As the viewer builds a three dimensional sculpture, a non-linear narrative is constructed, consisting of both the illuminated cubes and the darkened

spaces. Dark cubes can either exist as an object to provide structural form, a break in a sentence, or a censored space (see figure 3).



**Figure 2. Making the paper sheets from which the electronic cubes were built.**

The constraint of the tilt sensor and the possibilities it enables force viewers to confront the imagery and understand how the object works. This can be quite frustrating at times but ultimately engages the viewer in the handling of the cube: certain images can never be turned on; others can never be turned off; and some can present both states according to the configuration and positioning of the cube. This provides a very direct control feedback to the viewer or can hinder and favor certain construction possibilities. By confronting these constraints, the viewer becomes involved in the multitude of creative possibilities inherent in the artwork.



**Figure 3. Cubes built into a structure. The unlit cubes provide structural support and gaps, but their imagery does not become part of the narrative.**

I intentionally kept the electronic design simple in order to leverage a more complex correlation between the viewer's actions and the process through which the visual narratives develop.

## DISCUSSION

Historically paper has played a pivotal role in how information is stored and disseminated. Paper is one of the first technologies developed for mass communication. It has allowed us to transmit information over long distances and document our history over time. By integrating user controlled lighting into this traditional material, I intended to develop an intersection between traditional and more recent communication technologies. In this case, the light highlights the very materiality of the paper and augments the stories contained in it.

The imagery used in this piece is a combination of disturbing political photographs, simple text, religious icons, evocative forms and benign childhood fairytales. The light forces you to confront images that may be disturbing as you attempt to assemble a desired narrative. One is made to choose between leaving an image on or deliberately censoring it. In either case, the viewer must confront their presence (or absence) within the larger fabric of the story. Consequently, this artwork also attempts to raise into question the political nature of archives: what and whose stories get to be told in detriment of those which are silenced and hidden in obscurity.

## CONCLUSION

In this paper, I present *Fragments of a Conversation*: an installation that invites the viewer to construct visual narratives by tangibly manipulating paper cubes. By constraining the user to simple interactions and materials, this piece emphasizes the potential for creative involvement in associative visual storytelling.

## ACKNOWLEDGMENTS

Acknowledgments removed to preserve anonymity.

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