Computer Mediated Collage: Notes and Future Directions

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Abstract

The eighteen collages that accompany this description were the result of a pilot research project spurred on by a broader interest in the intersection between visual methods, ethnographic approaches, and practice theory. We asked participants to make a collage illustrating a domestic space they could imagine using to relax, and we also asked participants to include a particular form of technology in the imagined space of their collage. In prior research comparing the collages with a set of poems elicited with a similar prompt, we

noted key differences relating to meaning. The focus here is not on the study, but rather on the possibility of computer mediated collage techniques as a mode of visual research. We also discuss using Polyvore, an online service, as a tool for data collection, and speculate on further possibilities for the elaboration, deployment, and application of computer mediated collage, as well as potential modes of analysis for the data it generates.

Author Keywords

Collage; projective methods; Polyvore

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

The visual material that accompanies this text was generated as part of a pilot study. We were inspired by calls to extend practice theory to the field of design [8, 4, 5] to investigate in what methods might elicit participants to imagine future practices. Practice theory, while too complex to summarize here, offers HCI research a way of analyzing sociotechnical arrangements and a clear analytical framework of ongoing shifts in the relationship between objects, meanings, and doings [6]. We used the Polyvore website, described below, to facilitate data collection. While our pilot did not generate many probable future practices, the method we developed has potential for

Figure 1. A typical Polyvore collage focused on fashion and fashion brands. This one was created by the company for a sponsored campaign. [10]

Figure 2. A collage from an early pilot round. The participant titled this collage "The Rorita Den of Sin and Sewing (But Mostly Sewing)."

illuminating meanings related to the design and use of technology. In the last section, we propose four avenues that this visual method might be extended in future research.

Using Polyvore for Collage-Based Research

About Polyvore

Polyvore is a commercial website developed for a target market interested in fashion. The primary function of Polyvore is the ability to create collages, which Polyvore terms "sets" (figure 1.) Each set can consist of up to 50 source images. Images used in the set can be pulled from a library maintained by Polyvore, or "clipped" from most anywhere online using a bookmarklet provided by Polyvore. Basic image-manipulation features are available. Users can rotate, scale, and move each image in a set forward or backward, and they can also "clip" an image out of its background. Polyvore also provides a tool for adding text to a collage. Users are also given tools to share their work.

Collages are displayed in one pane of the interface. Icons representing image manipulation tools run across the top. To the right of the collage is displayed a running list of the constituent images with links to the source. Users can share completed collages with one another. Furthermore, if a user adds an image, this image is made available to all Polyvore users. Similarly, if a user clips an image out of its background, the clipping path is made available to all users. The business idea behind Polyvore is to give consumers interested in fashion a tool where they can express creativity, amass links to fashions they might be interested in buying (or, at least, making a collage with) and thus build a database of information on fashion trends and consumer preferences [7].

But not all Polyvore users engage with the site this way. Despite the limitations of the image editing tools (or perhaps because of their ease of use) Polyvore has attracted a community of users who use the site as a means to create visual art [2]. It was an interview with one of these users that drew our attention to the site's potential to allow creative expression in research.

Summary of the Method

The method was developed after several pilot rounds, which are not discussed here because of space limitations. For convenience, participants were recruited using Amazon Mechanical Turk and asked to complete a collage exercise using the Polyvore website. Participants were asked to create a collage that represented "a domestic space" for either "relaxing" or "spending a day off at home." They were required to incorporate one of three technologies — object printing, thin-film displays, or the cloud — chosen for their differing relationships to materiality, respectively: three-dimensional, two-dimensional, and a technology that is typically represented as immaterial. In addition to the collage, participants were asked to provide basic demographic data and respond to several questions intended to elicit more information about the imagined use of the space represented in the collage. These questions and answers are reproduced with the file of collage results provided. Participants were provided with an instructional video produced by Polyvore, given tips for quickly mastering the user interface, and instructed to make the collage look as much like a photograph as possible (figure 2). After many pilot rounds we collected the 18 collages that accompany this description. For purposes of comparison, we conducted a similar study using poetry as a means of

elicitation. The corpus of poems and related data also accompanies this description.

Potential Elaborations of Collage Techniques

The technique of mediated collage, either using Polyvore or a purpose-specific online tool, could be extended in many ways. Of many, four that align with existing research using collages are:

1. As a variation of the Zaltman Metaphor Elicitation Technique (ZMET),

2. using and automating scalar measures associated with some uses of consumer collage,

3. framing collage assignments on Polyvore as computer-mediated scrapbooking, and

4. as a non-verbal way of gathering information on aesthetic preferences.

Mediated ZMET
The Zaltman Metaphor Elicitation Technique, or ZMET. uses visual stimuli to elicit connections between underlying metaphors. Trained facilators conduct the ZMET. First, they ask participants to collect imagery relating to the subject of interest over several weeks. After several intermediate steps, the participant, aided by a computer technician, assembles a digital collage using the imagery collected, then tells a story about this collage. The collected images, the collage, and the story are interpreted with special attention paid to underlying metaphors [9].
One potential is to develop a mediated interface for collage construction that would incorporate videochat or audiochat technology. With a few other adaptations, such as developing alternative ways for the capture of imagery, methods like the ZMET could be deployed remotely rather than requiring face-to-face interaction.

Challenges of this potential elaboration include the fact that time-intensive synchronous facilitation performed by a human would be required for each participant, and also the added bandwidth of complexity and required coordination introduced by videochat or audiochat.

Extending Consumer Collage
Whereas the participants in our study were given directions to make their collage resemble a photograph of a room and to use the image manipulation tools to simulate depth, techniques in consumer collage are typically geared to statistical analysis. Participants might be asked, for example, to place images that represent their reactions to a brand at the center of the field and ones that do not relate at the periphery [3]. Other combinations of x- and y-axis scaling are also possible. For example, researchers interested in what forms of technology appeal to teens or adults and in what contexts they are used might scale the x-axis with age, and the y-axis from home to work. An item's placement in the collage, then, can tell the researcher about the perception of that item, and, with a large enough sample set, statistical techniques can be used to identify patterns. Researchers interested in this approach who want to conduct large-scale statistical analysis should consider developing tools to automate the retrieval of the coordinates and bounds of the components of computer mediated collages.

Scrapbooking
One participant in our research veered from the given instructions and created a scrapbook-style representation to the prompt (figure 3). Scrapbooking, considered as a normative practice, is strongly associated with the performance of family and gender roles [1]. As such, for some research questions, such

Figure 3. A scrapbook-style collage from our pilot research.

as those having to do with the ideals and representation of relationships, asking participants to keep a "scrapbook" over time using online collage tools could compliment other research probes, such as diaries or photo essays.

Representing Aesthetics
Building on an insight from an interview with a user of Polyvore and MyDeco (a similar site focused on home design), one of the most promising avenue for exploration and development is how online collage techniques might be used to answer questions relating to function and aesthetics. The image manipulation tools, while simple, can and are used to great effect, and it is readily imaginable that a carefully selected sample could use visual compositions to communicate aesthetic preferences that would be difficult, if not impossible, to communicate in verbal form. Participants, for example, could be asked to mock up a visual "prototype" of how a hypothetical technology might look like. Or they could be asked to create art that expresses how they feel about the object of study. The challenge of this approach is twofold. First, as we faced in our research, it is not always obvious how to find a fit between the aims of the research and the prompt given to participants. Second, it is not always clear how to interpret or represent even small amounts of visual data, let alone the vast amounts this online collage techniques could easily generate.

Conclusion
Easy-to-use online services that allow the composition and manipulation of images with a low learning curve enable researchers to extend the domain of visual methods outside of the typical face-to-face contexts that have constrained their use in the past. This extension opens new opportunities for visual research, including that in HCI, but also points to a need for further investigation and reflection on methodology and modes of analysis.

References
[1]   Demos, E.J. Scrapbooking: Women making 'me time' and doing family through making memories. 2006.

[2]   Feldstein, A. and Wilson, B. Polyvore Collaboration: Innovation in Informal Online Affiliation Networks. *Procedia - Social and Behavioral Sciences 2*, 4 (2010), 6561-6570.

[3]   Havlena, W.J. and Holak, S.L. Exploring nostalgia imagery through the use of consumer collages. *Advances in Consumer Research 23*, (1996), 35–42.

[4]   Julier, G. Design practice within a theory of practice. *Design Principles & Practices: An International Journal 1*, 2 (2007), 43–50.

[5]   Kimbell, L. Rethinking Design Thinking: Part I. *Design and Culture 3*, 3 (2011), 285-306.

[6]   Magaudda, P. When materiality 'bites back': Digital music consumption practices in the age of dematerialization. *Journal of Consumer Culture 11*, 1 (2011), 15 -36.

[7]   Miller, C.C. Site Wins Fashion Fans by Letting Them Design. *The New York Times*, 2009. http://www.nytimes.com/2009/07/27/technology/companies/27polyvore.html.

[8]   Shove, E. and Watson, M. Practice Oriented Product Design Manifesto. 2006.

[9]   Zaltman, G. and Coulter, R.H. Seeing the voice of the customer: Metaphor-based advertising research. *Journal of Advertising Research 35*, 4 (1995), 35–51.

[10] Polyvore Live presented by COVERGIRL. *Polyvore*. http://www.polyvore.com/cgi/set?id=42305086.