

Image-Enabled Discourse: A Preliminary Descriptive Investigation

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ABSTRACT

This poster presents preliminary results of an exploratory qualitative research. The hypothesis of this study is that affordances provided by image-enabled communication practices (i.e. drawing) create salient or hospitable conditions for reaching specific conversation outcomes. Qualitative empirical research in the form of semi-structured interviews seeks to establish a starting point for more robust future investigations of image-enabled communicative practices.

Keywords

Image-enabled discourse, ad hoc visualization, creation and use of visual information, multimodal communication.

1. PROBLEM STATEMENT

We might tend to think of words as being the primary building blocks from which we construct conversations. However, a number of other tactics are available to us when we try to communicate with others. We can gesture, growl or make a face. We also have an ability to exchange meaning through the use of images. Due to their ability to communicate across a range of contexts, images and visual information are playing an increasingly important role in how we work and collaborate with each other in both face-to-face and virtual environments. Images are ubiquitous in our daily communications. However, the various nascent areas of image-centered research are only beginning to coalesce around integrated and accepted concepts regarding the role images play in communication practice and culture.

The exploratory research presented here focuses on a particular type of spontaneously created image, illustrated by so-called “napkin drawings.” This ubiquitous form of ad hoc visualization consists of marks made on an available surface during the flow of a conversation, sometimes kept, sometimes abandoned, and notoriously cryptic for those not involved in the discussion. These drawings often coincide with moments of great insight or collaborative idea generation, and thus are clearly an important component in the process of communication between

individuals. Ad hoc visualizations can anchor, bridge, and facilitate the flow of information at crucial moments in a conversation.

Rarely seen as aesthetic objects of great admiration for their own sake, these information artifacts answer to a different set of requirements than other constructed images (such as art). Image-enabled discourse is the term used here to refer to the phenomenon of creating and using visual information during communicative acts.

2. RESEARCH QUESTIONS

The hypothesis of this study is that affordances provided by image-enabled communication practices (i.e. drawing) create salient or hospitable conditions for reaching specific conversation outcomes. The exploratory research described here seeks to answer the following questions:

1. Why do people start drawing during predominately verbal conversations?
2. How do image-enabled communicative practices support exchange of meaning?
3. Which affordances of visual modes of communication are most salient to image-enabled discourse strategies?

To address these questions, semi-structured interviews, conducted both face-to-face and online, were conducted. Narratives describing conversations where drawing occurred during the course of the exchange were analyzed to identify types of ad hoc visualization practices and corresponding conditions, affordances and outcomes.

The goal of this exploratory qualitative study is to generate a preliminary descriptive model of image-enabled discourse based on empirical data. This model will seek to address how specific image-enabled discourse strategies create salient conditions that help people reach desired communication goals.

3. DEFINITIONS

Image-enabled discourse is used here to refer to any interaction (face-to-face or virtual) between individuals that relies at some point on the interjection of an image in order to meet the goals of the exchange. The preliminary study focuses on a particular type of image-centered discourse in which drawing is the image-based communicative practice employed and where two individuals are involved in face-to-face conversation.

This phenomenon is inherently dynamic and bi-directional; each participant may have unique and evolving goals throughout the course of the exchange, and therefore, the creation of ad hoc

image may serve different purposes as the conversation progresses. For this study, respondents were asked to focus on a specific conversation in which drawing took place, and described the beginning and end of this specific conversational. Therefore, the boundaries and outcomes of each episode are determined based on these self-reported details.

This highlights a temporal component to the model that is key to understanding drawing as a communicative practice akin to an utterance. The ad hoc nature of the act of creating visual information *during* an exchange is an important aspect of the contribution images make to collaborative interactions. The notion of co-occurrence of multiple modes of communication (or simultaneous semiotic systems) is supported by research in the area of multimodal discourse analysis and is aligned with some research in multilingual communication (Auer, 1998; Gumperz, 1982; Kress & Leeuwen, 2001; Myers-Scotton, 1993). The dynamic and spontaneous nature of the phenomenon also makes it challenging to study in a controlled way.

This research also incorporates the concept of affordances applied to multimodal communicative practices. In this context, the term refers to those aspects of ad hoc visual communication (specifically mark-making) that are uniquely suited to providing the conditions needed to employ certain communicative practices. For example, drawing is by nature persistent, tangible and visible. These are examples of affordances of drawing (as opposed to utterances or gestures) (Gibson, 1986; Norman, 1999).

4. METHOD

Semi-structured interviews were conducted, evoking rich descriptions of face-to-face conversations that included the creation of one or more drawings. Respondents were asked to describe face-to-face conversations they have participated in that included the creation of one or more drawings. The goal of semi-structured interviews was to gather rich, systematic descriptions from participants in order to begin to isolate patterns of communicative practices, salient conditions, enabling affordances and interaction outcomes.

An initial pilot study involved eleven face-to-face interviews. A follow-up study expanded this library of narratives by administering a very similar protocol via an online questionnaire. Forty usable responses were gathered in October 2008. The web-based interview protocol was delivered via Ultimate Survey and online participants were recruited through the Study Response Project (<http://studyresponse.syr.edu/>). Because this study sought to gather information about image-enabled exchanges at a basic interaction level, characteristics of the sample were broad: adults over the age of 18.

Two research techniques commonly used in information science research were selected to guide the design of semi-structured interview questions: critical incident technique (CIT) (Flanagan, 1954) and sense-making methodology (Dervin, 1999). Like CIT, sense-making seeks to situate respondents in a specific moment related to a phenomenon of interest. Respondents were asked to think of a specific face-to-face conversation involving one or two other people when a drawing was created during the course of the conversation. The respondent could have been the one drawing and/or a conversation partner could have drawn.

Preliminary investigations revealed that the influence of a specific teaching technique or institutionalized practice might cloud descriptions of the more incremental interactions taking place. As such, the focus on one-on-one interactions was

motivated by a desire to avoid descriptions of classroom teaching where drawings were used.

Although there are certainly drawbacks to the online format, these were offset by the greater number of responses gathered, beneficial at this early stage of the research. Overall, although the face-to-face interviews provided far richer data, the online responses were detailed enough to corroborate and extend a preliminary scheme identifying image-enabled communicative practices related to the use of ad hoc visualizations.

5. ANALYSIS AND RESULTS

Inductive content analysis, guided by the semi-structured nature of the protocols, was conducted on both the face-to-face and online responses. Responses yielded consistently rich information about the conditions and outcomes surrounding the creation and use of drawing in conversations. Narratives were analyzed with four general concepts in mind:

- Hospitable or salient *conditions* that seemed to contribute to the effectiveness of the communicative practice
- Enabling *affordances* of drawing that helped to establish those conditions
- Overall interaction *outcomes*

Together these elements contributed to the identification of a preliminary scheme for analyzing image-enabled interactions (Table 1).

From the data emerged a pattern of conversational practices that relies heavily on the use of drawing to establish conditions that enable respondents to achieve goals or contributes substantially to reaching certain goals. When recounting the details of their conversations, respondents tended to equate conversational episodes with a single communication outcome. Therefore, conversation outcomes are the anchor for this scheme. The outcomes listed represent dominant categories identifiable even in the coarsely grained data collected to date. However, it should be noted that other classifications are not mutually exclusive, as indicated by the cross-listing of conditions and affordances.

On a certain level, we exhibit great expertise at deploying images just when we need them. Bringing this ability into a more conscious and deliberate domain will allow us to better exploit this seemingly innate human communication practice when building systems. Insight provided by a functional understanding of the role of images within conversation has great potential to enhance traditional information models by incorporating notions of context and functionality into the overall meaning of an image.

6. FUTURE RESEARCH

Preliminary analysis has revealed an interesting set of identifiable categories of image-enabled practices. During future phases of this research, increasingly robust methods, such as experimental protocols, will be developed to further validate these patterns of image-enabled communication practices.

Table 1. Initial scheme for analyzing image-enabled interactions

Interaction outcome	Types of communicative practices <i>Drawing enables the use of these communicative practices:</i>	Salient conditions <i>Ad hoc visualizations provide the ability to:</i>	Enabling affordances <i>Drawings helped provide these conditions because of these attributes:</i>
Consensus	Normalize representation of a concept	Establish common points of reference Aggregate and synchronize input from multiple sources Build isomorphic bridges between knowledge domains	Plastic Mutually Accessible Symbolic
Persuasion	Re-focus the attention of others to more closely align with a specific ideal	Independently amplify or diminish parts of a representation Perceive information as accurate, complete and without bias	Plastic Mutually Accessible Symbolic Authoritative
Verification	Change the form of the message in order to verify understanding	Accurately translate a representation into another language or mode	Mutually Accessible Symbolic Visual
Visualization	Convey specific information in a mode as close to its original expression as possible	Perceive information as accurate, complete and without bias Allow information to retain its context	Plastic Mutually Accessible Symbolic Visual
Synchronize	Create a waypoint, or moment of synchronized understanding, before moving forward	Establish common points of reference Aggregate and synchronize input from multiple sources Build isomorphic bridges between knowledge domains Map similar but not necessarily identical concepts	Mutually Accessible Symbolic

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