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Abstract: *This paper provides guidance to academics, new researchers, and practicing designers or business people on how to conduct ethnographic research on visual communications that are language-like in that they contain forms linked to specific meanings. The paper adapts Spradley's (1980) detailed steps for conducting ethnographic research to ethnography that is focused on visual communication. An argument is made that it is useful to employ linguistic frameworks in such research because the field of linguistics already has a well-developed theory base from which researchers can develop theory that is specific to visual communication.*

Introduction

This paper discusses how to research and write ethnographies of types of visual communication that are in part semantic such as information graphics. By *semantic*, I mean that they are designed using visual forms that are tied more directly to specific meanings. Ethnographies of this type involve the collection of detailed data about a particular type of visual communication and its users to determine how the communication meets the users' needs. This grounded research can lead to the development of theory, which writers have called for in the area of visual communication. For example, Moriarty (1994) emphasized "the need for the development of theories of visual communication that parallel the emphasis historically placed on language-based communication" (¶3). The documentation of research methods aimed at developing such theory should be a useful step.

Conducting this type of research is not a trivial exercise and many academics spend years on such work. For example, in the preface to his book *Ancestral connections: art and an Aboriginal system of knowledge*, Morphy (1991) noted that he originally wrote the work as a thesis at the end of the 1970s and intended to publish soon

afterwards but due to other life events did not publish until twenty-one years later. During the intervening years, he did more fieldwork and spent time teaching and reading, and as a result of these activities, his thoughts about Yolngu art changed. He said that he developed, "a more complex perspective on the study of meaning" (p. xiv).

Academics and business people alike conduct ethnographies of various types of visual communication. Examples of such ethnographies by academics are Morphy's (1991) work mentioned previously on the art of the Aboriginal Australian Yolngu people of Yirrkala in Northeast Arnhem Land and Mitchell's (2006) work on the visual representation of time in clocks, timers, calendars, and a range of time-related graphics such as timelines and process diagrams. Throughout this paper, these two studies will be used to explain steps of ethnographic practice. Some examples of the use of ethnography to study visual communication in business appear in Laurel (2003).

For academics, the purpose of an ethnographic study may be to document a type of visual communication so as to have better tools for teaching about or generating new variations of it, to better understand the communication's function in society, to understand how children learn about it, to theorise about how the type of communication developed and why it developed in the ways that it did, to gain insight into processes of human thought, and to understand the effectiveness and appropriateness of the communication. For business people, ethnographies of visual communication may be helpful for testing the usability of new designs and discovering the types of designs that people need.

The paper is intended for students, new researchers, and teachers of visual communication. It may also be helpful to practicing designers and business people who wish to develop their research techniques and gain greater understanding of the forces that shape design. Having conducted this type of ethnography, the author has found that while there is plenty of information available on the practice of ethnography (e.g. Spradley, 1980; Hammersley & Atkinson, 1989), there is not enough available on how to conduct such research on the type of visual communication discussed in this paper. The author suggests this effort be the start of

a larger piece on how to conduct ethnographic analyses on a range of types of visual communication.

While the paper provides an outline of the major steps required in this type of research, a primary focus is on the interpretation of data using linguistics frameworks. Such an emphasis is appropriate since regarding the applicability of linguistics to this type of study, Morphy (1991) wrote, "the perspective I adopt … sees [Aboriginal] art as an independent system of communication which is languagelike in the systematic way it encodes meaning and in its capacity to generate new forms" (p. 6).

To explain the steps in conducting an ethnography on this type of visual communication, I will begin with generally followed steps for ethnography as provided by Spradley (1980) who presented a detailed twelve-step model. These steps and the stages of ethnography are listed in Table 1 along with adaptations of these steps for conducting an ethnographic study of language-like visual communication.

Although presented here in linear sequence, Spradley stated that ethnography is not typically a linear method, but perhaps better described as cyclical since as the researcher develops questions and uncovers answers, more questions emerge and the researcher must move through the steps again. When conducting ethnography, researchers are encouraged to write all the while since raw data builds up quickly and the act of writing organises the data, focuses thinking and helps researchers uncover what they do not yet know. Also of note in Table 1 (below) is that researchers need not perform all the listed steps of analysis but may choose from among them those that they deem most suited to the particular study.

The remainder of the paper will discuss why it is appropriate to use linguistic frameworks to structure the research process and interpret the data, and will then provide insight on adapting Spradley's steps for studies on meaning-centred visual communication.

Table 1: Steps for conducting an ethnography adapted here to ethnography of language-like visual communication

Stages in the ethnographic research cycle (Spradley, 1980, p. 29)	**Steps for conducting an ethnographic research (Spradley, 1980, pp. 180–182)**	**Suggested tasks for conducting an ethnography of language-like visual communication**
Selecting an ethnographic project	1. Locating a social situation	1. Selecting a category of visual communication and identifying the social situations in which it is used
Asking ethnographic questions and collecting ethnographic data	2. Doing participant observation	2. Formulating open questions about the visual form of the communication and the situations in which it is used 3. Collecting examples of the visual communication 4. Selecting research tools to study how the design is used
Making an ethnographic record	3. Making an ethnographic record 4. Making descriptive observations	5. Writing descriptions of the visual communication and the situation in which it is used
Analysing ethnographic data and conducting more research as required	5. Making a domain analysis 6. Making focused observations 7. Making a taxonomic analysis 8. Making selected observations 9. Making a componential analysis 10. Discovering cultural themes	6. Selecting methods for and conducting analyses 7. Discovering themes within the data and applying existing theories as appropriate
Outlining and writing an ethnography	11. Taking a cultural inventory 12. Writing an ethnography	8. Outlining and writing an ethnography

Why linguistic theory can aid in developing visual communication theory

The view that linguistic theory can aid in developing visual communication theory comes from the idea that language and visual design are representational systems that are based upon the same concepts and thought processes. This view, which is

depicted in Figure 1, is not new and originated with the Swiss linguist Ferdinand de Saussure who used linguistic theories and analytical methods to study signs.

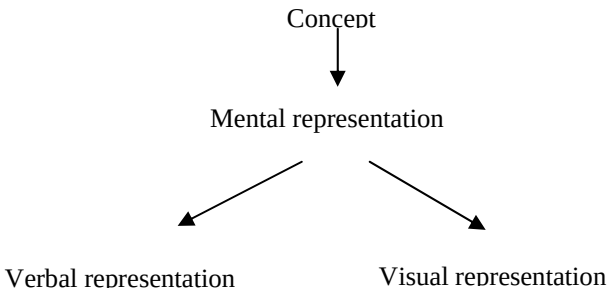

Figure 1: Concepts may share the same mental representation but be symbolically represented using different representational systems

Figure 1 is a version of Ogden and Richards' (1923) meaning triangle of referent, thought, and symbol, which is a synthesis of the work of the semioticians Charles Sanders Pierce and Saussure. The diagram is not meant to suggest that verbal and visual representations are interchangeable with one another, but that people employ them for different reasons. It is just that for some problems (like long addition), a visual representation (like Hindu-Arabic numbers) is a more useful representational solution. Therefore, different representations are selected for pragmatic reasons.

The linguist Herbert Clark's (1996) viewpoint is that all types of communication are language, and that a more comprehensive term for language is *signalling*. He argued that to truly understand language, researchers must examine language use in context:

> Language use could not proceed without signals – the acts by which one person means something for another … The traditional assumption is that signals are "linguistic" objects – utterances of speech sounds, words, sentences – that work via their conventional meanings… That assumption … isn't right. Many signals aren't "linguistic" at all… It isn't signals that are linguistic or non-linguistic, but methods of signalling. Most signals are … the artful fusion of two or more methods of signalling… some might conclude that the non-linguistic methods are crude, unsystematic, ad hoc, and marginal, and deserve to be relegated to the periphery of language use… On the contrary, the non-linguistic methods are subtle, highly systematic, and not at all ad hoc… Ignoring non-linguistic methods has distorted people's picture of language use, and it is important to put that picture right (pp.155–156).

Clark said that people have developed different forms of language for use in different contexts. For example, there is language for personal spoken settings (e.g. one friend talks face to face with another), personal written settings, (e.g. a friend writes a letter to another), non-personal spoken settings (e.g. a professor lectures to a class of students), non-personal written settings (e.g. a journalist writes an article for readers of a newspaper), institutional spoken settings (e.g. a lawyer examines a witness in a court), institutional written settings (e.g. a sales representative writes a letter to a client), and so on. The type of language and the signalling mode vary depending upon the context. There are also many forms of visual communication (e.g. writing, numbers, business graphs, clock faces, computer interfaces, advertising images) and each has a structure and associated meaning that is suitable to its context.

The main areas of language study are language structure and language use (Clark, 1996). When studying language structure, a researcher can focus on *phonology* (the study of sounds and their structure), *morphology* (the study of the internal structure of words), *syntax* (the study of the structure of sentences) or *semantics* (the study of the meaning of conventional languages). The study of language use is referred to as *linguistic pragmatics*, which is studying how language is used in context. Rather than attempting to map these areas of linguistic study directly to visual communication, van Sommers (1984) suggested that it is more useful to think of these areas as layers of the communication process, and that all types of communication including the visual, also consist of layers. In studying each type of communication, then, it may be useful to tease out what these layers are. However, as a basic point of departure in visual communication research, a researcher aims at describing the elements of a visual structure (e.g. pictures, lines, shapes, colours, position in the x-y plane) and what they mean, and how a design is used or its pragmatics. Morphy (1999) has noted, though, that when analysing meaning in visual communication, the researcher should ask, "to whom it means, and in what context, and what knowledge has to be brought to bear before it can be interpreted in the ways it is" (p. 21). Of the visual communication or object, he also said the one should ask,

> what is it about its form that enables it to be interpreted in the way it is? how does the system of forms articulate with the system of meanings? and to what extent do the two operate in conjunction to the trajectory of a society? (p. 21).

Steps for conducting ethnographic research on language-like visual communication

This section outlines the suggested steps for conducting an ethnographic study of visual communication. The first step in this research is to select a project. Spradley explained that the scope of a project could vary from the "micro-ethnography" of a "single social situation" to "macro-ethnography" of a "complex society" (p. 30). In visual communication, the focus could range from a particular type of design that is used within a single social situation to examples of designs that have served a particular function across history and cultures. Thus, the scope can vary in the breadth of the design category itself and the groups of people who use the design. For example, the scope of Morphy's work was narrower, focusing on the structure and use of paintings in Arnhem Land. The scope of Mitchell's work was broader, looking at the structure and use of many types of time-related designs from the earliest to the most recent across many cultures. The key in selecting a project is to find a category of design to study and the contexts of its use.

Hymes (1978) noted three levels of ethnography, which he labelled as the "comprehensive" enthnography, which documents an entire culture; the "topic-oriented", which looks at aspects of a culture; and the "hypothesis-oriented", which begins with an idea about why something happens in a culture. While both the topic-oriented and hypothesis-oriented levels are more suited to visual communication, the topic-oriented is probably more appropriate because it provides greater openness for the researcher to make observations. This leads to the next step, which is about the preliminary questions to ask.

The second step is to frame open questions. The anthropologist Malinowski (1922) said that ethnographic research should begin with "foreshadowed problems" (p. 9). These problems are questions that researchers bring to a study and to which they keep an open eye but to which they are not enslaved.

Spradley (1980) provided a matrix of questions about cultural space, objects, acts, activities, events, times, actors, goals, and feelings that researchers can use when just starting a project. Since the focus on *objects* in this list is closest to the topic of this paper, here are the questions that he recommends using to so as to learn more about them:

> Where are objects located? Can you describe in detail all the objects? What are all the ways objects are used in acts? What are all the ways objects are used in activities? What are all the ways that objects are used in events? How are objects used at different times? What are all the ways objects are used by actors? How are objects used in seeking goals? What are all the ways objects evoke feelings? (pp. 82–83).

The main purpose of Morphy's (1991) study was to explain the form of the Yolngu art in relation to its use. He asked questions like "Why does the object have the shape it does? Why is it made in the way it is?" (p. 5). He also said that he was "concerned with the way meaning … [was] produced and sometimes created in context" (p. 6). These concerns meant that he needed to analyse the following:

> …the potentialities of the codes themselves, but much more besides: the way meanings are encoded, the conditions for interpretation, the position of the interpreter, the integration of meaning and structures for producing meaning within a system of knowledge, the importance of theme and context in creating meaning and many other considerations (p. 6).

Mitchell (2006) had similar goals in researching visual representations of time. She asked these questions at the start of the research:

> What is the purpose of this representation and for whom was it designed? What symbol sets, visual variables (shape, size, position, orientation, colour, and tone), reference points, and scale does it employ? What technology does it use? What are the technological and cognitive strengths and weaknesses of this representation in meeting human needs? (p. 7).

In the third step, researchers begin collecting examples of the type of communication under study. As part of his work, Morphy (1991) collected examples of Aboriginal art from a single Yolngu clan that told about the same mythological events that occurred within the same area of land. In particular, he collected examples of the journey of the *guwak* (koel cuckoo) to the "Djarrakpi, a brackish lake … on the coast of the Gulf of Carpentaria just north of Blue Mud Bay" (pp. 119–220). Although each example told the same or part of the same story, each differed from the others in some visually significant ways such as whether all or half of the area of land was depicted, whether particular elements were represented more figuratively or abstractly, or whether different figures could substitute for one another. Morphy's examples were primarily from the most talented elder in the clan and his family, but he also surveyed

items that were used in different situations, such as public context and the private ritual context.

In her work on time-related graphics, Mitchell (2006) collected, among other things, examples of watch dials. Each example was selected based on its visual difference from others in such variables as hand style, face shape, style of indices or numbers, number of indices or numbers, shape of indices, numerical font, and background colour or texture. Examples were collected from watch catalogues, the Internet, magazine and journal articles, museums and books.

The fourth step in the process is to select research tools for discovering how a design is used. In a study of visuals, many techniques may be used to learn about design usage. Plowman (2003) has listed the following: videotaping and photographing subjects who are using the visual form; passively observing subjects or actively participating while observing; researching documents, linguistic data, and statistical data that shed light upon the form; conducting oral histories; conducting individual or group interview in structured of semi-structured session; and conducting surveys and questionnaires regarding people's use of the form.

Morphy primarily collected data through observation and interviews. He also used historical examples of the art as points for comparison to more recent art and as devices to spark discussion during interviews. Mitchell used questionnaires and interviews to collect data on how people read analogue dials and what styles of watches that people prefer (e.g. digital versus analogue read-outs).

In the fifth step, researchers begin writing two sets of descriptions, one focusing on the design's structure and the other on its usage. The writing typically proceeds case by case. In this writing, the description of the first case is likely to be the most complete as it must provide a more complete picture of the design's structure, how it works, and its usage. In describing a design or visual communication's structure, it is incumbent upon the researcher to notice the important ways in which it varies and creates meaning. Some useful tools for helping beginning visual communication researchers to see visual structures are Bertin's (1981) taxonomy of graphics, Twyman's (1979) schema for studying graphic languages, Kress and van Leeuwen's (1990) work on visual grammar and power relations in visuals, Zettl's (2008) work on media aesthetics, and the two ethnographies used as examples in this paper.

In the sixth step, researchers select method of analysis and carry out the analysis. Although presented here as a distinct step, Hammersley and Atkinson (1989) have noted that researchers engage in analysis throughout the ethnographic process. Spradley (1980) listed four types of ethnographic analysis from which researchers can choose: domain analysis, taxonomic analysis, componential analysis, and discovering cultural themes. At any point in these analyses, the researcher may decide that more detail is needed and so return to do more focused or selective research.

When researchers conduct a domain analysis, they may list kinds of things that fit into a category, ways to use things, reasons for using things, and so on. For example, in researching analogue watch dials, Mitchell created the domain of parts of dials as shown in Figure 2.

Analogue watch dials
! *are parts of*
hands
numbers
indicis
background
shape
calendrical information
jewels
logos

Figure 2: A domain analysis of the parts of watch dials

As stated earlier, linguistics frameworks are also useful in analysis. Consider first Morphy's work on Yolngu paintings. He found that in these paintings there are two primary types of visual structures, which are a map of a particular area of land and sets of figurative or abstract symbols of ancestral beings that are acting within and sometimes transforming the land. In these designs, however, the figures are not just literal representations of ancestral beings, but *metaphors* for the spiritual beliefs of the

Yolngu. Through a domain analysis, the researcher could list the particular visual forms that were metaphors of particular beings.

In Mitchell's (2006) work on visual representations of time, she found that the deep structure of *linguistic tense* assisted in building taxonomies for different types of representations such as clocks, calendars, timelines, process diagrams, and so on. Linguistic tense describes time in terms of space (e.g. Traugott, 1975; Lakoff & Johnson, 1980). In general, people conceptualise time as an imaginary place or walking path. For nearly all languages of the world, the future lies in front of speakers along the path and the past behind. The speaker stands in the present, either as a point or a region. This model allowed Mitchell to determine the elements of the visual language that were important in defining it, which were its path-like structure, the fact that points in time were related to positions along the path and that there were distances between positions, that the path might have a particular beginning and ending, that the future would be represented differently from the past, and that figures along the path might face in different directions. A domain analysis of linguistic time provided the researcher with a model for creating domain analyses of visual representations of time.

From a domain analysis, a researcher may develop a taxonomy that shows relationships among items in the domain, and indicates subsets of the domain. Figure 3 presents a partial taxonomy of watch dials.

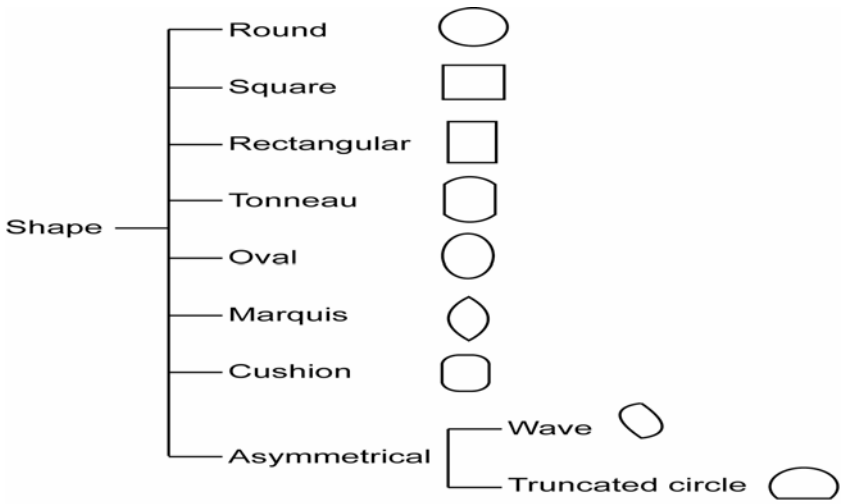

Figure 3: Taxonomy of analogue watch dial shapes

Morphy's taxonomy of one set of Yolngu art was created as a template or map in which areas were delineated to contain different types of symbols for particular meanings.

Another type of analysis is the "componential analysis", in which the researcher looks for contrast in the data. Spradley described this step as "the systematic search for the attributes (components of meaning) associated with cultural categories". For example, Mitchell did this type of analysis when looking for the attributes of dials that met users' design requirements, which she categorized into the areas of functional, athletic, opulent, and eccentric. She then developed the taxonomy to contain these labels. For example, the *wave* dial shape presented in Figure 3 was considered to be *eccentric*.

The final step in analysis is to discover cultural themes and apply existing theory to them as appropriate. Spradley defined a cultural theme as "any principle recurrent in a number of domains, tacit or explicit, and serving as a relationship among subsystems of cultural meaning" (p. 141). He noted that themes are general and therefore will apply in many situations and across domains.

In his interpretation of Yolngu paintings, some themes that Morphy (1991) noted were that the paintings acted as mnemonics for retelling clan myths during various performances. Since many of the elements in the paintings were not literal representations of their deeper spiritual meanings, the paintings also acted as devices that restricted access to knowledge. Typically, only fully initiated male members of a clan would be allowed to have complete knowledge of the information in the paintings and only they would have permission to relate that information to others.

In her work on time-related graphics, Mitchell (2006) found that devices such as clocks and calendars emerged through a combination of forces such as the needs of governmental and religious powers, religious beliefs, human cognitive limitations, number systems, the development of writing, changes in our physical world such as the daily alternation of light and dark and phases of the moon, and advances in technology.

Useful theories for making sense of the data and its themes may come from a variety of fields in addition to linguistics. For example, Mitchell (2006) drew on theories of

cognition, in particular Miller's (1994) work on short-term memory in explaining specific units of time such as the seven-day week, and on Rogers' diffusion of innovations theory in explaining how various time-systems were adopted around the world. She also used theories on how writing developed to explain directional patterns in the designs.

Before writing the final draft, Spradley suggests "taking a cultural inventory". This step has to do with creating an outline and organizing the data for writing. In writing up ethnography regarding visual communication, the text moves thematically from description of how, what, why, where, and by whom the design is used, to descriptions of the designs themselves. Writing moves from case to case, with the first case being the most developed, and those following it providing contrasts so that there is no redundancy. Earlier parts of the text may be devoted to a type of setting the stage for the need for the visual.

Conclusion

This paper has set out a plan for conducting ethnographic studies on types of visual communication that share the characteristic of language of containing forms that are strongly linked to specific meanings. The steps described are intended to be helpful to both academic and business researchers, but especially to those who are teaching the process and those embarking on this type of research. The use of linguistics frameworks in this research provides focus on both visual structure and usage thereby providing a more complete picture of how the visual's form works in society. Although this paper is presented with the best intentions, as Spradley said, "the best way to learn to do ethnography is by doing it" (p. 38) and so this paper has not answered all questions but may provide guidance on some of the ones most useful to someone studying visual communication.

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