Methods that use video or other visual data offer occupational therapy and occupational science researchers great potential for the study of occupation in all its contextual complexity. Video methods are used across disciplines in both quantitative and qualitative designs. They are most developed within the subdiscipline of visual anthropology. Yet, they also thrive in such various fields as urban planning, kinesiology, education, primatology, and medicine. Although video methods have a history of use in occupational therapy, they have never been considered in overview and so may often be overlooked by researchers. It is the intent of this special issue to demonstrate the potential of video methods in occupational therapy and occupational science research.

The primary term I will use here is video methods, although some methods that examine visual data without using video will also be included. All of these data collection methods emerged from changing film technology. As researchers embrace and experiment with these new methods of studying occurring occupations, they will also be sensitized to central questions raised by video methods. For example, although we have become accustomed over centuries to the reduction of human experience to text and numbers, is this sufficient justification for our methods once we have the option of recording those experiences as they occur, complete with voice, sequence, context, gesture, and relatively uninterpreted nuance? Video more clearly highlights the responsibilities of the researcher toward research participants and consumers of research. Further, as it becomes possible to include more fully the spatial, interactive, and temporal aspects of research topics, the unfolding of research questions may also change, moving to address fresh territories of understanding that up to now were well nigh impossible to study.

Many opportunities for researchers to refine designs through the use or addition of video data are described here. Although video technology or video methods may seem intimidating to the less experienced, they are easily used. The rules of rigor and quality in collection and analysis of data still apply. These are simply fresh data-collection approaches. The cameras are inexpensive and fairly simple. Computer-assisted data storage and analysis can be confusing because of the rapid change in computer technology that is currently taking place. Any problems with use of video data within a computer platform can be addressed through support from a computer technology professional or use of a commercial analysis system. Sometimes, institutional review boards are hesitant to approve collection of video data. This is dealt with in the same way that any human subject’s concern is handled, with absolute respect for the rights of participants, a clear rationale for the effectiveness of the methods, and willingness to negotiate a satisfactory handling of any reviewer concerns. A side benefit of video methods is that, with appropriate
Visual Anthropology: History, Technology, and Methods

Given that anthropology has always focused strongly on methods of observation, it is not surprising that this is where video methods developed earliest and continue most strongly to be used today. Visual anthropology’s vitality can be seen in researchers, academic departments, and journals that are completely focused on the use of film and video. Each year, a portion of the annual meeting of the American Anthropological Association is dedicated to ethnographic films. Many insights into the potentials of video methods for occupational therapy research can be discovered in the history, theoretical development, methodologies, and persistent questions of the young subdiscipline of visual anthropology.

A Brief History of Visual Anthropology

The history of visual anthropology is a study in the impact of changing technology on disciplinary research (El Guindi, 1998; MacDougall, 1997). The first use of sequenced photography was in 1877, to settle a bet in California about whether or not a racing horse lifted all feet off the ground simultaneously. In 1888, Jules-Etienne Marey, the inventor of “chronophotography,” demonstrated his invention for the first time to the French Academie des Sciences using celluloid roll film. In the late 1890s, Regnault used chronophotography to do “comparative ethnic physiology,” examining movement patterns in different cultural groups. In 1898, Haddon did “salvage ethnography,” preserving the context and limited the imposition of theory, aesthetic composition, or artificial narratives onto the data.

In the 1970s, handheld Super 8 cameras became available. Asch teamed up with Chagnon to complete several important ethnographic films on the Yanamamo of Venezuela, including Magical Death, The Ax Fight, and A Father Washes His Children. Again, the films emphasized field sampling of lengthy sequences of behavior in natural context. The Ax Fight is especially well-known in anthropology classrooms. In this film, an ax fight breaks out between two Yanamamo men, quickly escalating into including multiple people. Chagnon and Asch begin filming even as they try to figure out what is happening, yelling directives at each other regarding what to film and why. Thus, the film provides an excellent vehicle for considering the role of the anthropologist’s thinking in framing the resulting visual data (El Guindi, 1998). Recently, The Ax Fight was released on compact disc, complete with links embedded throughout the film sequence that lead to genealogical records, interview data, and field notes.

Technology for recording and analyzing visual images continues to evolve, spurring visual anthropologists on to discover new methods, issues, and approaches to the use of visual images to study culture. Betacam and Beta SP cameras were used in the 1980s, and Hi 8 combined with VHS and Super VHS technology in the 1990s. Large crews and
The Potentials of New Methods for Studying Culture

The evolution of camera technology opened the door for anthropology to develop new methods of examining culture. Within anthropology today, visual data is generally used in four different ways (El Guindi, 1998). Some data are intended solely for research archiving or analysis: for example, a collection of videos of Native American dance, or samples of television soap commercials from the 1950s to the present. This research also includes kinesics, proxemics, and studies of nonverbal communication. Data collection for this type of research use is fairly straightforward, using opportunistic, programmed, and digressive sampling (Mead, 1995). Another use of video data is as a basis for eliciting perspectives on the images being viewed (El Guindi, 1998). An example of elicitation method would be teens viewing and commenting on videos of other teens engaging in gang behaviors, in a study of gang membership. Video is also used in experimental cultural reconstructions of abandoned cultural forms, such as having Eskimo elders collaborate in creating a videotaped simulation of the way in which their communities hunted in groups and without guns when they were young. Finally, videotaping is used to create ethnographies. Ethnographic films are studies of a particular cultural dynamic or concept, such as a film exploring the experience of transitioning from childhood to young adulthood in a particular cultural group of sub-Saharan Africa. Although distinctly different, all of these approaches together make up visual anthropology.

The argument for the strength and potential of visual methods in anthropology is multistranded. Margaret Mead advocated strongly for visual methods as an antidote to anthropology as “Words, and words and words” (1995, p. 5). She argued that culture is expressed in ways that include sequences, gestures, objects, shared actions, and other aspects not well-represented in text. In her eyes, anthropology’s overdependence on text was simply a clinging to old methods and outdated technology. Mead viewed cameras as a technological boon to the development of anthropological research, just as the microscope was to biology (Wright, 1998). MacDougall (1997) called for:

...putting in temporary suspension anthropology’s dominant orientation as a discipline of words and rethinking certain categories of anthropological knowledge in light of understandings that may be accessible only by nonverbal means. ... Enabling a shift from word-and-sentence-based anthropological thought to image-and-sequence-based anthropological thought. (p. 292)

Morphy and Banks (1997) see resistance to the use of visual methods in anthropology as a Western bias, as “the elevation of the intellectual over the experiential or phenomenological” (p. 14).

“Visual anthropology may offer different ways of understanding, but also different things to understand” (MacDougall, 1997, p. 287). Visual data handles temporal dimensions of research questions especially well. Designs can easily support synchronic comparisons, contrasting data from the same time period but from different sites or samples, or diachronic comparisons, following change over time (El Guindi, 1998; Mead, 1995). Sequences, timing, gaze, and nonverbal communication are all examples of aspects of culture that are highly temporal and difficult to examine without collecting visual data (Hall, 1971, 1973). Visual data are also easily reentered (Morphy & Banks, 1997). That is, visual data are largely unaffected by the thinking of the researcher during its analysis. Visual data are fully available for reanalysis, by other researchers with different questions or by the same researcher after his or her perspective has dramatically shifted during the research process. In contrast, interviews and field notes are largely shaped by the researcher’s perspective at the time of collection. Although they can be reexamined, it is more difficult to generate a fresh analysis from such data at a later date. As visual methods have grown in anthropology, new questions and research interests have flourished, especially interests in visual media in popular culture, such as the expression of culture through films, video games, and television.

Standards regarding the quality of visual methods research in anthropology vary widely, perhaps due to their newness or diversity. Criteria for quality often include the clarity with which the perspective of the researcher is examined and shared, the effectiveness with which the techniques used for data collection and analysis attained research objectives, and the degree to which the conceptual parameters of the research were stated, maintained, and adequately explored (El Guindi, 1998). In the early 1900s, use of multicomponent film equipment, multiperson
crews, and limited consent protocols gave video research a reputation of being intrusive and disruptive of contextual behaviors. Today, however, video cameras are much more common in everyday life. Video equipment is small, requires only one individual, and no longer needs to be held in front of the researcher’s face. Consent to collect video data, including specification of audiences that may view that data, are now a standard requirement. If other methods of collecting research data are considered, such as interviewing, taking blood samples, or administering paper and pencil instruments, it is easy to see that all research tends to be intrusive and disruptive. It is arguable that video methods are no more intrusive than many other commonly accepted research practices. The negative impacts of any research method must be minimized: including inconvenience to participants, distortions of data, or disregard of participants’ rights.

In inductive methods, it is considered important to limit to the degree possible any reinterpretation until after data can be examined. Although sampling choices in video data collection do impose the perspective of the researcher, videotaping allows a more ideal balance of observation of the phenomenon of interest prior to interpretation than is possible through field notes or interview (El Guindi, 1998; Flaherty, 1972). Like any data, video data are made available for examinations concerning the adequacy of a researcher’s interpretations, and is typically included in any presentation of findings.

Visual anthropology also offers new ways to address the relationships between the researcher’s perspective, the data generated, and the researched (El Guindi, 1998). Many video and film projects have taken a strong collaborative stance. Shared anthropology emphasizes the input of research participants following viewings of data clips. Collaborative ethnographic documentaries use a partnership model for the creation of informed representations of aspects of the lives of participants. Informant-made films, also called indigenous media productions, provide the cultural group of interest with cameras, production equipment, training, and researcher support, to more fully understand through the produced films the ways in which the visual world of that group is understood (El Guindi, 1998; MacDougall, 1997; Worth & Adair, 1972).

Beyond pushing researchers to find ways of equalizing power between the researcher and participants, ethnographic film methods make clear that there is a third group in this relationship: the viewers of films (El Guindi, 1998; MacDougall, 1997). Thus, there are relations between filmer and filmed, between filmer and viewer, and also between viewer and filmed. Viewing visual data is usually much more emotionally involving than viewing text data. Due to the development of characters, the sensory complexity, the temporal unfolding of action, and the rich contextuality of visual data, a viewer can get caught up in a film, feeling transported into the portrayed setting. This is called participation affective. It is a powerful dynamic and must be used ethically, by insuring that the relations between filmer, filmed, and viewer are responsibly constructed.

One issue with which visual anthropologists wrestle constantly is that film and video, like text, come with cultural meanings and customary usages that continually insert themselves into research uses of the medium. The desire to make research films that are aesthetically appealing is analogous to the desire to produce ethnographies that are engaging to read. Even when text or film is intended entirely for research purposes, the broader cultural uses of that medium will tend to shape the research use. In the effort to be both visually engaging and scientifically meritorious, anthropologists worry that ethnographic films will “fall between two stools” (El Guindi, 1998, p. 484), failing to accomplish either aim with any quality. In anthropology, this issue is further complicated by the fact that ethnographic film has much larger markets in anthropology education, often called “illustrated anthropology” (Wright, 1998, p. 16), and in television, than it does in a research consumer audience (El Guindi, 1998; MacDougall, 2001).

Although visual anthropology may suffer some loss of purity of methods because of its popularity in classroom, cinema, and television, it has certainly accomplished one important end of academic disciplines: to contribute its concepts to broader discourses in academia and the public media. Visual methods have generated a vital and growing subdiscipline of anthropology that both challenges and extends the venerable methods and concepts of its parent discipline. For occupational therapy and occupational science, visual anthropology is rich in methods, concepts, and issues to be considered regarding the potentials offered by visual data.

Visual and Video Data in the Research of Other Disciplines

Although visual anthropology has clearly led the charge in incorporating video methods into research, researchers in other disciplines have also taken advantage of the unique capacity of visual data to capture phenomena of interest to them. Because no subdisciplines focused on visual methods have formed in other disciplines, the history of their use in other fields is unclear. The following samples of how visual data are presently used in disciplines beyond anthropology give a good perspective on the breadth of potential research applications offered by different types of visual data.
Disciplines adapt video research to the unique questions of their field. Sometimes researchers create unique cameras and camera placements to gather the data they desire, as in the following examples. In primatology and ethology, video is used to record natural sequences of animal, bird, insect, and invertebrate behavior, sometimes using cameras concealed in blinds, underwater, behind one-way glass, or using extreme zoom or microscopic filming (Goodall, 1986; Wratten, 1994). Kinesiology uses either straightforward analysis of video data or transducer systems to analyze movements through a computer (Marques-Bruna & Grimshaw, 2000; Wank, Frick, & Schmidtbleicher, 1998). Speech science analyzes the movements of language production in order to provide basic descriptive research to support communication disorder interventions (Green, Moore, Higashikawa, & Steeve, 2000; Katz, 2002). In psychology, thin-slice methods, which structure analysis of specified short segments of videotape on selected variables, make microanalysis of complex behaviors possible (Ambady & Rosenthal, 1992). Driving behaviors have been studied using an in vehicle video system called a Smart Car (Boyce & Geller, 2001).

Applied disciplines focused on creating learning, behavioral, or health changes use visual data in interventions as well as in research on those interventions. In education, video is used to provide feedback on behaviors targeted for change, so that students can then review them and improve their performances (Hill, Hooper, & Wahl, 2000; Roter, Cole, Kern, Barker, & Grayson, 1990). Interactive video simulations are also beginning to be used for training (Paull, Case, & Grove, 1997). Some professions, medicine and physical therapy for example, use the scoring of video samples of clinical performance as a competency assessment (Cross, Hicks, & Barwell, 2001; Humphris & Kaney, 2000; Tate, 1999). Videos are also developed as direct teaching tools, a technique often used by medicine and nursing to create patient instruction videos (Krouse, 2001; Murdough, Russell, & Sowell, 2000).

In many professions, video plays a role in instrument and assessment development, interrater reliability, and the training of raters to standards of reliability in assessments for both research and intervention uses (Daley, Mayo, & Wood-Dauphinee, 1999; Ganong & Coleman, 1997; MacKenzie et al., 1996; McDonough, Batavia, Chen, Kwon, & Zai, 2001; Nordmark, Hagglund, & Jarnlo, 1997). Video methods are used in many applied fields to test for significant differences between pre-intervention and postintervention samples (Athlin, Norberg, Axelsson, Moller, & Nordstrom, 1989). Physical therapy uses a variety of systems, such as Ariel Performance Analysis System, ExpertVision HiRES OrthoTrak, and Peak Modus Advanced Video System to examine and treat gait (Chang, Guan, & Burne, 2000; Krawetz & Nance, 1996).

In medicine, specialized visual technologies for assessment and intervention have developed, such as medical resonance imaging (MRI), computer-assisted tomography (CAT), endoscopy, and swallow studies. Telemedicine, the use of video links to provide medical consultations over long distance, is of great interest in research on providing services to remote rural populations (Grigsby & Sanders, 1998; Kully, 2000; Whitten, Cook, Kingsley, Swirczynski, & Doolittle, 2000). Video linking is also being used in many disciplines for distance education, thus generating educational research on the effectiveness of video as a teaching medium.

Across disciplines, video data are analyzed through both qualitative and quantitative methods. Of particular usefulness in quantitative analysis is the development of computerized coding systems, including CAMERA, Noldus's The Observer Video-Pro, MacSHAPA, ProCoder, VTLOGANL, and VideoLogger (Hecht & Roberts, 1996; Krauss, Morrel-Samuels, & Hochberg, 1988; Sanderson et al., 1994; Tapp & Waldren, 1993). Such systems offer methods of managing video recorders via computer, logging and editing video data, creating data codes and coding data, and analyzing summative results. Other approaches develop qualitative coding categories and apply them either with or without an intermediary step of scripting in order to use text-based qualitative analysis software (Law, Barnett, & Kot, 1999; Ratliff, 2003).

A Synthesis of Cross-Disciplinary Uses of Visual and Video Data

How can we recognize the potentials offered to our disciplinary research by this cross-disciplinary variety of visual and video methods? How can we consider how video data might support occupational therapy practice? An effective synthesis rests on several key points.

There are three primary ways in which visual data are used in research: as the topic of the research, as primary data collected in researching a topic, or as secondary data used to support the generation of the primary data (Table 1). Here are some examples. An historical study of the evolution of early silent films focuses on visual media as the topic of study. A field sample video of a cultural ritual uses video to collect the primary data of the study. Collecting interview data from patients as they watch a video of themselves being assessed by a physician is use of video as secondary, or enabling, data.

This rich array of visual methods offers researchers in occupational therapy and occupational science intriguing use...
possibilities for future designs. Table 1 provides a brief list of the many research approaches described here, along with their designation as using visual data as a research topic, as primary data, or as secondary data.

The variety of research reviewed here suggests that particular phenomena are more effectively studied using video methods. Understanding that particular topics of investigation, such as those that emphasize context or sequence, are better studied using visual methods can sensitize occupational therapy researchers to important areas of study that might more rapidly generate useful insights using video methods. Table 2 summarizes the types of phenomena that may be more effectively studied using visual or video data.

**The History of Visual and Video Research in Occupational Therapy and Occupational Science**

Although our field's body of research is comparatively small, review shows that video methods do have a history in occupational therapy and occupational science. Further, interesting parallels exist. Considering the historical use of video methods in our field is useful for identifying trends that may guide us as we move into future research.

A primary parallel between video methods and occupational therapy methods is that they are both highly various because of multidisciplinary origins. Occupational therapy is a young profession, partnered with a newborn discipline. Most researchers receive doctorates in outside disciplines. Research methods in occupational therapy and its science include nearly every method used in human research. This is a strength as well as a weakness. We have a richness of methodological choices. Yet, this methodological variety does not provide the focused synthesis between findings that may exist in fields with more unified methods. So, we live with variety and limited synthesis. This is invigorating or frustrating to our scholars, depending on their tolerance for ambiguity. The cross-disciplinary usefulness of video methods seems an excellent match for such a rich patchwork of disciplinary research.

In its earliest uses in occupational therapy, video methods were most often modeled on kinesiological methods of studying movement. Video research was pioneered in occupational therapy by Erhardt (1994, 1999, 2001), in a series of studies describing hand function development in children with and without cerebral palsy. A focused collection of kinematics research on reach and grasp was produced by Trombly and her colleagues (Lin, Wu, & Trombly, 1998; Trombly & Wu, 1999; Wu, Chang, Trombly, Lin, & Tickle-Degnen, 1998). Torrens, Hann, Webley, Joy, and Sutherland (2000) used video to evaluate hand performance of persons with arthritis. These are all examples of the use of visual data as the primary data of a study.

Given the congruence of occupational science and anthropology, it is not surprising that the methods of visual anthropology appear in occupational therapy research. Several researchers have used the elicitation techniques developed in visual anthropology to study the clinical reasoning of occupational therapists, including Mattingly and Fleming (Fleming, 1991a; Mattingly & Fleming, 1994; 1991b; Mattingly & Gillette, 1991), Bjorklund (1998), Burke (2001), and Unsworth (2001a, 2001b). These studies used reflective discussions with therapists as they viewed
videotapes of themselves providing intervention. Clinical reasoning research is an example of video used as secondary data. The New Stories/New Cultures After-School Enrichment Program (Frank et al., 2000) used an indigenous media production approach, giving fifth- and sixth-grade children opportunities to produce videos as an exploration of their relation to the media messages of popular culture. Lawlor and Mattingly (2001) used video, along with other methods, in research on the framing of illness and disability in children and how this framing influences health care encounters.

Other occupational therapy researchers have used video methods to create innovative designs to fit their research programs. As technology has changed, my own work has evolved through three qualitative video coding systems. The first system was modeled on a prototype created for Jane Goodall in the Department of Visual Anthropology at the University of Southern California. I have used video data to describe infant-toddler development of interactions with the home environment and self-perceptions of at-risk rural youth (Marshall, Pierce, Cunningham, & Dunn, 2003; Pierce, 1998, 2000, 2001, 2002). Baranek (1999) used retrospective analysis of home movies to describe subtle indicators of autism in children as young as 9 to 12 months of age.

Video research has been useful in examining the effectiveness of occupational therapy. Guidetti and Soderback (2001) used video in a multiple case study design to analyze improvement in dressing and undressing skills. Tham and Tegner (1997) studied the difference in effectiveness of video and verbal feedback to individuals with unilateral neglect. Pinnington and Hagerty (2000) analyzed feeding practices with children with severe neurological dysfunctions. Dreyer, Dreyer, Shaw, and Wittman (2001) studied telemedicine delivery of occupational therapy to rural locations.

Video data has also been regularly used in occupational therapy to develop, standardize, and insure the validity and reliability of research and intervention instruments. Video samples are used to train administrators of the Sensory Integration and Practice Tests. Harkness and Bundy (2001) used video samples to examine the reliability and validity of the Test of Playfulness. Norwood (1999) used video to develop The Motor Observations.

In summary, it can be seen that occupational therapy and occupational science have made good use of video data, benefiting from the multidisciplinary variety of such methods. Both qualitative and quantitative research are included in this history. Trends in visual research in occupational therapy include kinematics for the study of movement, elicitation approaches to study clinical reasoning, use of innovative video systems and research designs, and efficacy and instrument development studies. Many of these projects have focused on children. Many combine visual data with other forms of data. Video data in these studies are, as in Table 1, used almost entirely as primary data, with some secondary uses of video data in elicitation studies. In overview, these articles have a shared flavor of innovation, of demanding and seeking ways in which data can better serve research.

Overview of Articles in the American Journal of Occupational Therapy Special Issue on Video Methods

This special focus issue of AJOT groups five feature articles and one Brief Report to illustrate the variety and potential of visual methods for occupational therapy and occupational science research. Baranek and colleagues used a unique approach to identifying symptomatic differences in object play in infants with autism through retrospective analysis of family home videos using Observer 3.0. Chapparo and Hooper used a qualitative examination of 6-year-old children’s perceptions of the meaning of self-care, combining methods of interactive participant observation, a drawing activity, and elicitation from video. Two research groups from Boston University carry on Trombly’s strong tradition of quantitative visual analysis, now using innovative thin-slice methods from psychology. Kadlec, Coster, Tickle-Degnen, and Beeghly used thin-slice methods to examine differences in caregiver interactions during daily activities, between children born prematurely, with and without white matter disorder and healthy children born full term. Lyons and Tickle-Degnen tested the reliability and construct validity of an expressive behavior rating scale for persons with Parkinson’s disease that uses thin slices of video data. Unsworth developed a unique head-mounted camera system to collect intervention videos from the perspective of the therapist, in order to complete elicitation interviews that contribute to the clinical reasoning research tradition. In a Brief Report, Tomlin examined the effectiveness of video simulations in predicting occupational therapy student performance during fieldwork.

The Potential of Video Methods for Occupational Science and Therapy Research

Video methods offer great potential to occupational therapy and occupational science. To the degree that a researcher is studying those topics described here as most effectively addressed through video methods, that researcher may benefit from the potential of these methods in his or her
research. To the degree that a researcher considers occupation to be an individual’s contexted and temporal experience, whether in descriptive or application studies, he or she must question whether visual and video methods might enhance the quality of research. To the degree that a researcher wonders whether a phenomenon of interest is fully addressed through reductions to text or counts, that researcher must consider whether video methods might improve research. These methods have served the field well in the past. They will do so in the future, for those who recognize their value. ▲

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**Bibliography**


