

Configurational Validity: A Proposal for Analyzing Ethnographic Multimedia Narratives

RICKI GOLDMAN-SEGALL

*Faculty of Education, University of British Columbia
2125 Main Mall, Vancouver, BC V6T 1Z4 Canada*

Multimedia ethnographic researchers along with those persons they study have an opportunity to become a culture of inquiry when using emerging computational tools for data analysis. As partners, this community can build narratives which convey messages to and with their readers. As readers contribute their own interpretations, the original story changes. Layers build; stories change; patterns emerge; and inquiry becomes a reflexive practice. The question to be asked in this emerging world of telecommunications collaborative inquiry is: What is the story and whose story is it? This article will present a theory of validity for building more robust analyses of multimedia stories that can be built by distributed communities of inquiry. I propose that stories of multiple "authors" can be layered in clusters, or "constellations," in such a way that larger, more robust theories emerge. I term this approach a platform for multiloguing. To explain the theoretical basis of this approach and a software application that has been designed to support this approach, I first explain the need for a theory of *configurational validity*. Then, I describe a tool called *ConstellationsTM* that has been designed to address how robust configurations could be used to build more valid accounts.

WHAT IS CONFIGURATIONAL VALIDITY?

Configurational Validity: Patterns with No Fixed Centers

Suppose you have just watched the video recording of the event when Rodney King was beaten by the Los Angeles Police Department on your television, as many viewers around the world did. You have an interpretation that you believe. When viewers were interviewed after seeing the television event, a very large range of stories emerged. How do we account for this great range from what was a video record of the event? For a long time, ethnographers have grappled with the same problem. How do we account for the stories we tell from what we believe happened "in front of our eyes"? How do we build valid accounts when there are so many possible interpretations? Maybe if we had seen a recording from another angle, another focus level, or maybe if we had seen the event from another person's shoes, we would have made other conclusions? The problem is that we can't walk in others' shoes. We can try to see others' points of view, but we have a lifetime interpreting the world from our developed sensibility.

In this article, I offer an alternative theory of validity for analyzing our video-based documents which does not rely on one point of view because it does not try to sit as judge over specific events. It tries to find the deeper themes that link and weave diverse interpretations so that, as a culture of inquiry, we can make more valid conclusions. We may not be able to answer "Who done it?" but we may be able to intelligently understand the roots of the conflicts that exist in Los Angeles between rich and poor, Black and White, those with power and those without. We may be able to assess positions of privilege and construct theories that take into account the complexity of many points of viewing.

To address the complex web among readers, authors, texts, and those whose stories are being told in multimedia documents, I recommend that the multimedia ethnographic design community focus on collaborative theory-building rather than on an individualistic approach to coding, retrieving, and searching video and text databases. Designing tools that will assist groups of researchers in putting together theories from clusters of linked multimedia data and their respective interpretations should be a focus of inquiry. In other words, it is not enough to have tools to log data with time references and descriptors. Multimedia tools need to enable users to sift through the links that have been constructed into groupings—what I call "constellations"—to build larger configurations of meaning. Thus,

building a valid multimedia research document not only entails layering data into *thick descriptions* (as I had proposed in my previous works in 1990 and 1993), but it requires sifting through the layers to find essential themes and patterns, what I refer to as “configurations” and what Horney (1994) refers to as “threads.”

“Configuration” is defined in the Random House Dictionary as:

1. a grouping of stars in a constellation or of constellations in a solar system; and
2. a grouping of parts to a whole where each part has a relative position, where no definite center and no finite relationships are fixed, and where a range of perspectives and points of view broaden what is seen. (The perfect postmodern recipe!)

Configurational validity contributes to the expanding belief that validity in research is enriched by multiple points of view. We recognize the internal “strength” (*validus* in Latin) of a reporting, not only by its rhetorical ability to persuade, its compelling author/ity, and its exclusive use of canon and genre, but by its ability to bend, to be resilient, and to be reconfigured into new groupings. Layers on layers. Research also gains strength by bringing together both the discordant and the harmonious. It gains strength by providing a forum for variance and diversity. In other words, *configurational validity* is attained through the construction of a “platform for multi-logging.”¹

New questions about our construction of documents begin to emerge when using multimedia tools, especially when considering the potential of the Internet for distributed collaborative research. These questions are:

- How do we, as critical readers and as writers of multimedia documents, reach agreement around certain interpretations, and why do we discredit what is not in harmony with our original interpretations? Are we canceling out discordant voices? Could we include them and produce more valid accounts?
- What are these seemingly fragmented constructions that multimedia ethnographers produce? They seem to contradict our previously held notions of narrative. Are they representations, artifacts, or evocations resulting from the collected and collective memories of the persons we are studying?

I propose that by building configurations of interpretations we could bridge the gap between what we traditionally call *representation* of other and what postmodern ethnographers call *evocation*—"fragments of discourse intended to evoke in the minds of both reader and writer an emergent fantasy of a possible world of commonsense reality" (Tyler, 1986, p. 125). Researchers through their multimedia documents can re/present their own experience with those they study, layering various points of view, negotiating perspectives, and sharing a "participatory consciousness" (Heshusius, 1994) that produces a shared, layered, multi-voiced document that evokes both a sense of "being there," (Geertz, 1988), "being with" (Heshusius, 1994), or what I would call a sense of "being in."

Multimedia Ethnography as a Platform for Multi-Loguing

A postmodern anthropologist is interviewing her informant. "[F]inally the informant says: 'Okay, that's enough about you; now, let's talk about me.'"2

All reporting of "other" is problematic. Narratives tend to be as reflective of the author's point of view as they are of the person whose story the author is telling. When they are interpreted by readers, they take on new levels of meaning. Given the complex life these narratives live, how do readers/viewers come to believe or trust the stories that authors of texts tell us—whether these textual re/presentations be conveyed in words, images, or multimedia documents?

Designers and users of multimedia applications who want to tell and share their stories of the people and places they study tend to ask: "Whose story is this, anyway?" (Goldman-Segall, 1994). Is the story created in the minds of reporting "authors" as they create their works, as Clifford Geertz suggested in *Works and Lives* (1988)? Is it located in the work—often referred to as the "text" or document itself (as orthodox religious followers believe of the *Torah*, *Bible*, *Koran*, and other holy books)? Or, is it located in the minds of "readers" (Bruner, 1986) as they sew together fragments of the story using aural, visual, and textual prompts?

Multimedia ethnography can be a platform or forum for the "social construction of knowledge" (Barrett, 1992) among multiple users who collaboratively create multiple layered stories. Not only are the stories of others told, but the stories of the people who participated in the study of other can be told. This *platform of multi-loguing* plays two roles: (a) dialogue is replaced by many people engaging in multiple levels of conversation, and

(b) the process of reaching conclusions includes logging (selecting, coding, and analyzing) segments of stories from multiple perspectives.

Knowledge of other when using multimedia tools is a constructionist activity conducted as a partnership among inquirers who are willing to negotiate "partial truths" (Clifford, 1986, pp. 1–26) in order to gain a deeper understanding of both self and other. Ethnographers, informants, and readers of multimedia accounts can become a virtual community, building the best possible interpretations. Validity in this approach is not synonymous with Truth; there can be various partial truths co-existing and forming deeper thematic meanings that may become more or less valid according to different circumstances. As James Clifford has stated, ethnography is less a science and more an art with its own genre forms.

Ethnographic truths are thus inherently *partial*—committed and incomplete. This point is now widely asserted—and resisted at strategic points by those who fear the collapse of clear standards of verification. But once accepted and built into ethnographic art, a rigorous sense of partiality can be a source of representational tact. (Clifford, 1986, p. 7)

Can ethnographers ever represent what is known and felt? Is ethnographic "art" really the "invention, not the representation of cultures" (Clifford, 1986, p. 2)? According to Tyler,

...the whole point of "evoking" rather than "representing" is that it frees ethnography from the *mimesis* and inappropriate mode of scientific rhetoric that entails "objects," "facts," "descriptions," "inductions," "generalizations," "verification," "experiment," "truth," and like concepts that, except as empty invocations, have no parallels either in the experience of ethnographic fieldwork or in the writing of ethnographies. (1986, p. 130)

Whereas Geertz is searching for empirical methods to make claims from highly textured data as a way of establishing ethnography as a science with its own "scientific method," Clifford (1986) and Tyler (1986), among others, are confronting the foundations upon which Geertz's layers rest. Ethnography according to Clifford, Tyler, and other postmodern ethnographers consists of partial truths and fragments of discourse which provide the reader with a handle for entering the world of other through the stories of ethnographers.

Harriet Bjerrum Nielsen (1995) takes a different cut on the role of ethnographic texts. She examines the effects of texts on the minds of readers.

She argues that texts are seductions. Validity rests in the ability of the author to convince and persuade, to cause us "to lose our senses" (p. 4), as it were. She also poses that the validity of a story should not be a final verdict; interpretations need to be open to new interpretations. The reader struggles with a text—finding different meanings, while being seduced by it. While proposing the need to lose our senses, she also takes a step back to look of a safe "breathing space." Provocative as this theory of seduction is, Bjerrum Nielsen's distancing herself from the game of ethnographic reporting is somewhat voyeuristic. She "marks off the field" (p. 6) with two opposing teams: (a) those who think qualitative researchers should tone down the narrative and descriptive nature of their texts, reducing text to language matrices and transposing qualities to linguistic quantities (Miles & Huberman, 1984), against (b) those who believe that the use of literary trope is the backbone of what defines the game (Bruner, 1990; Clifford & Marcus, 1986; Geertz, 1973). At first, Bjerrum Nielsen seems to be routing for both teams. Then, she throws the final pitch: "If the text does not have serious intentions, the seduction does not tempt us." Is this a curve ball, a way to avoid taking sides? Serious for whom? Under what conditions? Would one say that if a documentary film or a novel does not have serious intentions, the seduction doesn't tempt us? Isn't the excitement of seduction the fear that the intentions by the seducer may not be serious? A good "story," whether the mode of representation be words, video, film, music, or multimedia, is perhaps less about seduction and more about involvement and participation to learn about self and other. As one of my graduate students, Donna Matheson, candidly asked: "Do we have a compelling need to be close to other cultures to understand our own, or are we just nosy?"

Lous Heshusius (1994) bridges the gap between knower and known, subject and object, and insider and outsider in a compelling article called "Freeing Ourselves from Objectivity." She proposes a collaborative model for building validity that dovetails well with multimedia ethnographic methods—a telling of events that emerges from a "participatory mode of consciousness" (p. 15). She examines the role of the ethnographer as "being with" (p. 19) someone or something. Thus, ethnographic text emerges from writing about a subjective knowing of other. "Reality is no longer understood as truth to be interpreted, but as mutually evolving" (p. 18). Heshusius's concern is with a methodology of participation that entails merging with other, being with other, and telling the stories of others while being inside the story.

In multimedia ethnography, the story can be told “with other” and “with reader.” However, the questions multimedia ethnographers ask are: “Whose story is it, anyway?” and “How can better versions of stories be created using the technological tools of our times?”

CONFIGURATIONAL VALIDITY: WHY?

Text and Informants: The *Thick Description* and Multimedia Ethnography

My quest over this past decade has been to construct an electronic platform for diversity and multivocality while finding a way to deepen the discussion about validation of ethnographic accounts in this postmodern period of intellectual thought. To do so, I have been exploring the relationships among text, reader, author, and those whose stories are being told.

When examining this relationship, one could ask: How do authors build their stories so that readers can “penetrate” (Geertz, 1988) the lives of others? Is it possible? If yes, can this be done in such a way that those persons whose stories are being told are empowered and not subjected to exploitation by others?

Clifford Geertz’s (1973) notion of the *thick description* (Goldman-Segall, 1989) has always seemed to me as a window for thinking about multimedia ethnography—the thick description as a conceptual tool for “layering” video data (1989, 1993a, 1993b). For Geertz, the thick description is a layered, rich, contextual description of an event that lets the reader get closer to the meaning of the event. The thick description is a way to address the problem that “imprisoned in the immediacy of its own detail, [ethnography] is presented as self-validating, or worse, as validated by the supposedly developed sensitivities of the person who presents it...” (1973, p. 24). In other words, in 1973, Geertz postulates that ethnographers depend heavily upon their “developed sensitivities” to persuade readers to believe in interpretations of their descriptions. Without the thick description, Geertz suggests, validation is reduced to self-validation; the reader may believe the ethnographic account is valid only because he or she trusts the author of the text.

Geertz’s influence on my work in multimedia ethnography is that the thick description has become a conceptual tool for thinking about layering video data from multiple perspectives and contexts. Using the first video data analysis computer application designed with my research team³ at the MIT Media Lab called *Learning Constellations* (now *ConstellationsTM*), I

could literally cut, paste, and layer video streams into segments—which I have termed “stars,”—to form groupings, which I have termed “constellations.” Readers/viewers could view my data and add their annotations or layers (Goldman-Segall, 1990). Fleeting moments rich in gestural meaning as “a young boy named John slapped his thigh and spoke excitedly about the nature of thinking” could be viewed from various groupings or clusters to see how they interacted with other thematic links.

However, layering video data does not completely address the complexity of webbing interpretations together. I have never deluded myself into thinking that my readership was able to “know” John or the other children I have studied as I knew them in that time and place, or as these children knew themselves. What viewers see is still my “cut,” my selection, my window into the culture of children using computers in school settings. On the other hand, I did see myself as their friend and spokesperson, a translator from their culture to my academic culture, in much the same way that documentary filmmaker John Marshall employs when making his films about the Bushmen in Africa, *N/OWA T'AMA: The Melon Tossing* (1967) or *N/UM TCHAI: The Ceremonial Dance of the !Kung Bushmen* (1969). I not only wanted to tell the young people's story but I hoped that by telling their story, attitudes of educators toward different girls' and boys' thinking styles would change. My research was not without intention. It was not (and is not) clean and tidy, as Elliot Eisner⁴ has told me on several occasions.

At first glance, Patti Lather's (1991) theory of validity seems to contribute highly to the construction of multimedia conceptual tools for ethnographic inquiry between text and informants. With rigorous conviction, Lather has opened the door for more deeply critiquing how qualitative researchers reach verisimilitude in their reporting. Lather takes issue with positivism (and, for that matter, any rigid ideological interpretations) while being a proponent of “transformative agendas” and research embedded in praxis (p. 65). However, her search is not against empirical validation or empirical accountability. She critiques feminist research, neo-Marxist ethnography, and Frierian “empowering” research practices for not meeting her criteria for validity according to the categories she establishes: triangulation, construct validity, face validity, and catalytic validity. Her goal is to advance emancipatory theory-building and empower the researched while “protecting our work from our own passions” (p. 78). Lather is critical of the passion a researcher feels “with others”—a passion Heshusius (1994) brings to the study of other. Nor does Lather address the role of texts as narratives and how writers convince us, as do Geertz (1988), Bruner (1986), Clifford (1986), and Bjerrum Nielsen (1995). What Lather contrib-

utes, however, is a focus (a) on methodological rigor that changes praxis and (b) on the rights of informants to become members of the research community.

In spite of Lather's concern for more robust empirical conceptual tools, she does not address the intricate interaction among authors, texts, readers, and those persons being portrayed in the study in the interpretation of research. Ironically, multimedia ethnography with its electronic platform equipped for sharing perspectives, methods, data sources, and with its ability to re/view analyses with the researched and build their stories with our stories about them and us could, in fact, bring about what Lather terms "catalytic validity"—validity which causes changes in those who are being researched. Let us more deeply examine the role of author as creator of both the content and form of multimedia ethnographic documents.

Authorship and Text: "Being There" and Multimedia

By 1988, Geertz moved his gaze from the construction of texts to the lives of anthropologists in making their texts (1988).

The ability of anthropologists to get us to take what they say seriously has less to do with either a factual look or an air of conceptual elegance than it has with their capacity to convince us that what they say is a result of their having penetrated (or, if you prefer, been penetrated by) another form of life, of having, one way or another, truly "been there." (Geertz, 1988, p. 37)

Geertz cites Raymond Firth's 1936 introduction to *We, the Tikopia* as an example of anthropologist as author caught up in his own rhetorical tropes. On the one hand, Firth's manner of writing keeps saying "I was here and this is *my* story." On the other hand, Firth concludes that the methodology of the social sciences needs to be as "objective and dispassionate as possible" (see Geertz, 1988, p. 13). This idea coming from Firth whose own writing resembled travel writing, as Pratt (1986, p. 37) has noted! Moreover, who can read Firth today (or, for that matter, who can read the phrase of Geertz cited above) without noticing the phallic imagery? How can one not question the positioning of the white explorer *penetrating* the lives of the exotic stranger?

In the cool of the early morning, just before sunrise, the bow of the *Southern Cross* headed towards the eastern horizon, on which a tiny dark blue outline was faintly visible. Slowly it grew into a rugged mountain mass, standing up sheer from the ocean; then as we approached within a few miles it revealed around its base a narrow ring of low, flat land, thick with vegetation. The sullen grey day with its lowering clouds strengthened by grim impression of a solitary peak, wild and stormy, upthrust in a waste of waters (Firth, 1936, pp. 1-2).⁵

How does this descriptive passage from Firth's 1936 ethnographic account demonstrate the issues of authorship facing the multimedia ethnographer? In the first place, reading Firth should alleviate the fear that reporting one's research has to be a "tidy" activity. Firth's writing style is embedded in the male traveler style of the period. This travel diary style created a sense of "being there" (Geertz, 1988) for his readers. Readers of Firth's period in the first half of the century trusted he was there, and, in some way, trusted that his account was accurate.

In a somewhat similar way, multimedia ethnographers need to be able to create a sense of immediacy and contact for their readership, not only to their stories but toward the culture they are describing. At the same time, they need to be able to recognize that their accounts are going to be as subjective and stylistically embedded in the rhetoric of the present period as were Firth's. All writers are subject to the genres of their times. Moreover, as Pratt (1986) pointed out regarding print-based anthropological writing, multimedia ethnographers will also need not fear exploring new relationships and boundaries between scientific endeavors and ethnographic narratives. Anthropologists have been experimenting with their styles of representation whether or not they were conscious of their experimentation. Multimedia ethnographers face the same journey. Certainly recognizing and building upon the styles of one's field, and, as Pratt concludes, "inventing new ones" (p. 50), are the backbone of all ethnographic constructions.

Readers/Viewers and Texts: Moving to Distributed Collaboration

The purpose of the above discussion has been to show the complex nature of the relationship among author, text, reader, and those whose stories are being told, and to point to a more interactive and constructionist approach for conceptualizing interpretations of "texts" in the age of what my colleague at McGill University, Ron Burnett, calls the Net.

What happens to ethnographers in the age of the Net? The Net is certainly an interesting metaphor in this period when ethnographers are using the Internet to explore new territories. The Net conveys the image of both casting out and catching—as in fishing, or being supported and held—as in falling from a highwire in a trapeze show, or of keeping things in place—as in a hairnet. A net is designed to enable a sifting of objects and substances. Some things stay in and some things go through the holes of the net. How does this metaphor connect with the constellations metaphor I have been developing as a conceptual tool for conducting multimedia ethnography over the past decade? How does the role of audience change when the audience can participate in the study? How do audiences (readers/viewers), texts, authors, and the persons whose stories are being told become a distributed culture of inquiry? Most importantly, how could this partnership among persons and various forms of text (print, video, and sound included) contribute to building more robust levels of validation? *Configurational validity* may be a method of addressing these issues whether the text is presented in words, images, or sounds.

CONFIGURATIONAL VALIDITY AND CONSTELLATIONS™

Constellations™ for Building Valid Multimedia Accounts

From 1985 to 1990, I examined the difficulty of building valid multimedia accounts. My first multimedia ethnography was a study of children's thinking styles at a computer-rich Boston inner city elementary school (Goldman-Segall, 1990; Harel & Papert, 1991). In 1989, my design team and I built a HyperCard tool called *Learning Constellations*. The idea that chunks of information, called "stars," could be joined together as the basis for "constellations," or themes, was at the core of the theoretical basis underlying the interface (see Figure 1).

Using the constellation metaphor and acknowledging the contribution of the author's and user's points of viewing became a helpful way of reaching more robust conclusions. After all, since we are all located in different social, economical, ethnic, gender, and sexual orientation *positions*, how could we expect to see the world similarly? Postmodernist theory as a paradigmatic way of examining the world of other has brought about significant changes in the interface now called *Constellations™* 2.0 which we have been designing in our Multimedia Ethnographic Research Lab, MER-Lin, here in UBC's Faculty of Education (see Figure 2). The purpose of

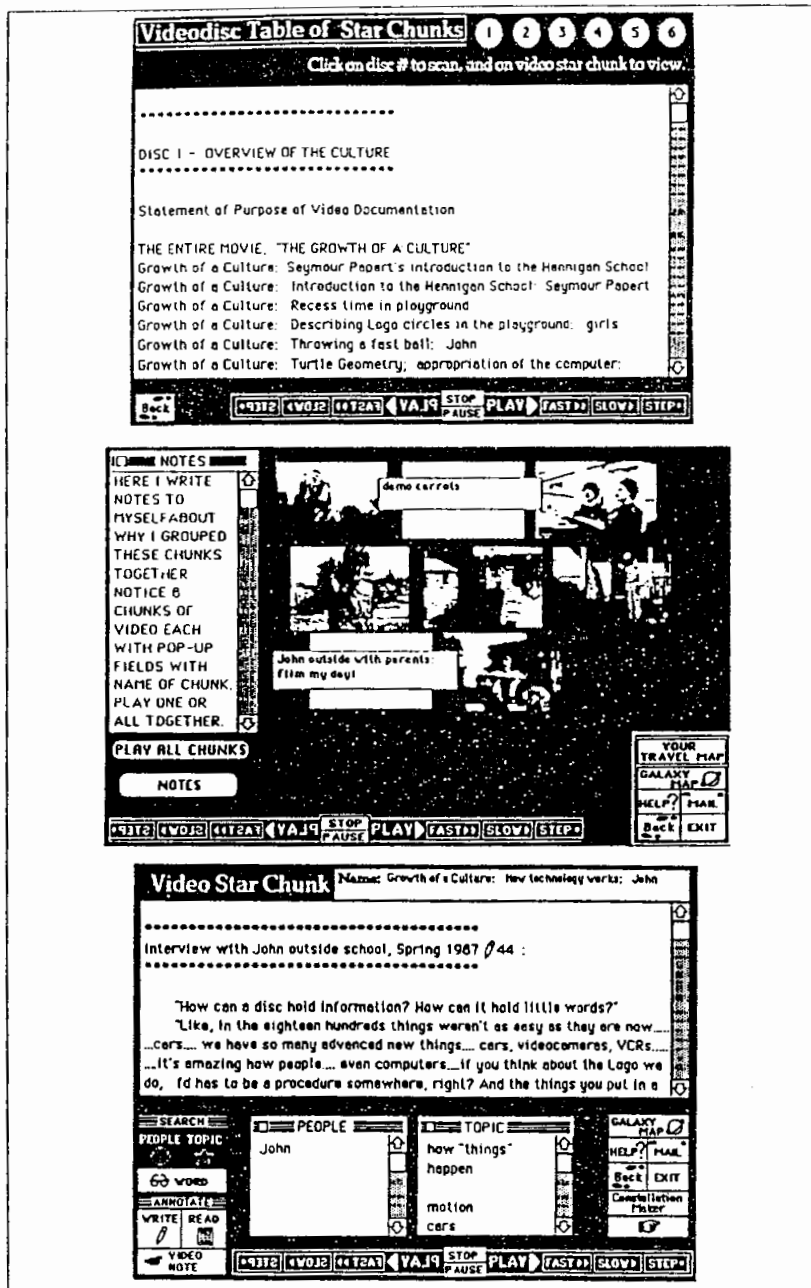


Figure 1. Learning Constellations 1.0

this version of the interface is simple: a tool to segment digitized video in chunks called “stars” that could be assembled into larger grouping by different users/authors called “constellations.” Then, to take the metaphor one step further, to find a method of visualizing and comparing different users’ constellations into larger configurations that convey a broader interpretation of the diverse points of view.

My goal has been to build a platform for multi-logging video and text data. From recorded video, selected chunks become representative of larger groupings of collected data. (After all, it is impossible at this time to store in a digital mode all the video data of a large study.) These selected video chunks are digitized using any number of digitizing programs and the chunks are placed into folders. When working from within *Constellations™*, the star chunks can be linked into constellations, and they can be described using attributes with a rating system called a *Significance Measure* (Goldman-Segall, 1993b). Annotations can be added while the video is being viewed. By linking the stars into constellations, users can interpret the data in diverse ways according to themes they have assigned. In fact, the same data could be linked to a variety of constellations. These interpretations can be shared and negotiated as new users log onto the system. *Constellations™* is a collaborative multimedia research tool designed with the goal of researchers, participants, and readers from distributed locations working as a team. Although that goal has not yet been realized, telecommunications are paving the way for this next level of collaboration in ethnographic research.

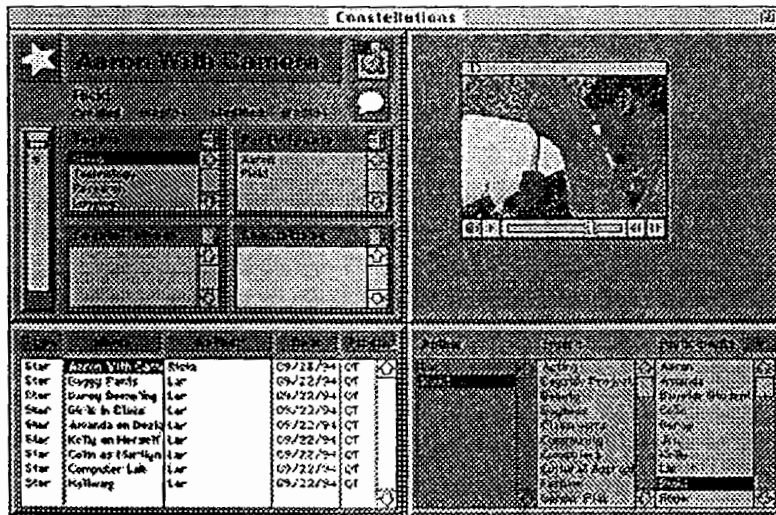


Figure 2. *Constellations™* 2.0. For detailed description of how these tools function, see Goldman-Segall, 1993b.

To collect the research data, I use a videocamera and take fieldnotes on a portable computer. The idea is not to exclude the subjectivity of the videotaped material, but to elicit responses that are genuine while also taking advantage of the performance factor. I carry my videocamera with me most of the time. I ask the children if and when they would like to contribute. The children, then, not only became involved in the research but begin to be the directors of the research.

A major problem in making sense of video data is that the data is especially subject to at least one person's point of view...the researcher/cameraperson's (Goldman-Segall, 1990; Mehan, 1993). Therefore it is essential to recognize who the researcher is and pay particular attention to the context in which an event was shot.

From the hours of recorded video, I select and digitize small slices or chunks of video which are representative of the entire body of collected data. These chunks are referred to in the software as "stars." Related chunks can be linked together into "constellations." By linking these star chunks together, I can begin to develop meanings and stories associated with actions and gestures. This material is available to other researchers who will also construct their constellations, creating an open-ended research environment which maintains the integrity of the original source material while allowing the other researchers an unlimited number of connections with the material.

The layering of data blurs the distinctions between original researcher and users. Each user accesses and chunks the data differently. An interactive document is created where interpretations continue to be shared and negotiated, enabling researchers to interact with other researchers in a way that all users become part of the interpretation process. This tool initiates dialogue or what I now term a "platform for multi-logging."

ConstellationsTM has also been designed to address the issues of evocation, re/presentation (not representation), and *configurational validity* (Goldman-Segall, 1994). The use of *ConstellationsTM* by readers—including a possible "audience" on the Internet and those whose stories are being recorded and constructed by themselves and other authors—is aimed at validating interpretations that are both evocative and descriptive.

How can *ConstellationsTM* enable multimedia stories to become more trustworthy?

- Include the voices of multiple authors. This method is an integral part of *ConstellationsTM*.
- Build tools that let multiple authors mark their points of view by rating the attributes that describe the data. A *Significance Measure* helps

readers to see what was important to other readers (Goldman-Segall, 1993b).

- Layer data (Goldman-Segall, 1993b). Layering enables readers to juxtapose various segments into their own configuration and to share larger groupings of data that hold together and form constellations. Layering data is also achieved by enabling multiple readers to add their video or text annotations.
- Enable the layers of groupings of data—"constellations"—to form new configurations.

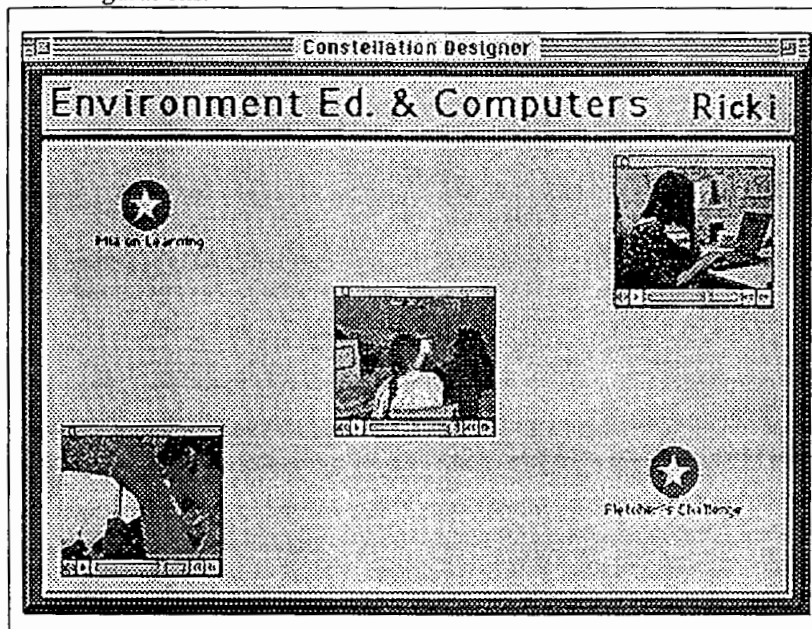


Figure 3. Constellation page in ConstellationsTM 2.0.

Having random access to my data lets me segment the pieces or chunks of video data, organize them into meaningful categories, and then reconstruct the chunks into case studies. The random access environment helps me communicate with my viewers and readers in a manner which gives them the opportunity to build their own meanings. Moreover, I establish a new kind of relationship with my viewers and readers; they become part of the research process. Resulting case studies reflect the interpretation of the various users of the database. Users become researchers, building their own theories about my interpretations of the selected video and

text data. As a result, the video research environment becomes a growing video and text documentation with possibilities for expansion by adding text and video annotations to the material or by including related studies with different databases. Fixed interpretations are a part of our pre-electronic past.

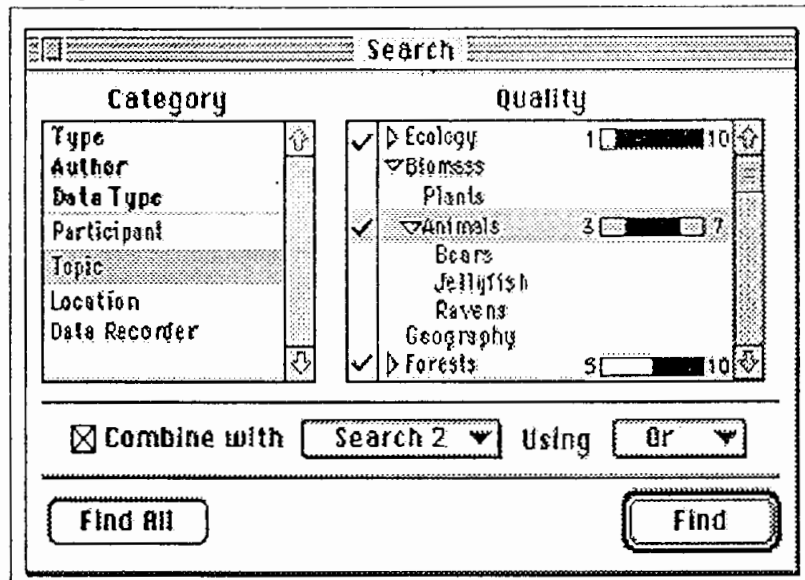


Figure 4. Outline for page in Constellations™ 3.0 that will enable users to add many levels of descriptors and attributes in the database and to conduct complex searches. Constellations will be able to be grouped into new configurations.

Implications of Theoretical Proposal

You may be asking yourself: "Why do I need to know about configurational validity?" I believe we are at a critical time and place in our development of new tools. We have yet to build tools that enable us to design research environments which address Elliot Eisner's call for "connoisseurship" in using artistically inspired methods of research (1992, 1993). However, we can choose to design tools to be convivial and beneficial for the development of humankind. A troubling dilemma facing designers and users of new technologies is how to deal with the fact that by giving the user

untold degrees of freedom with the source material, the intention of those who experienced the original event, as well as the intention of the recorder and interface designer, could be changed to a point where neither is recognizable. New users experiencing the synthesis of these "authors" may miss the point. In other words, what happens to the meaning of an event which was originally experienced by the subjects and seen through the eyes of the filmmaker/ethnographer, if the pieces or units are taken out of context and misrepresented by the user? How do we maintain the original configuration while remaining cognizant that new interpretations will emerge? And from the readers' and viewers' perspective, we must ask how we will provide ways for them to become participants in the creation of our multimedia documents so that our re/constructions of reality are made known and easily felt. For example, as our tools allow for greater control over "reality"—as in the computer animated handshaking in the movie *Forest Gump*, for example—how do we invite the audience of readers and viewers to get the main idea of what we are re/presenting? Or are we, as the postmodern ethnographer is doing in the joke quoted earlier in this article, just talking to and about ourselves?

References

- Bateson, M.C. (1989). *Composing a life*. New York: Atlantic Monthly Press.
- Barrett, E. (Ed.). (1992). *Sociomedia: Multimedia, hypermedia, and the social construction of knowledge*. Cambridge, MA: MIT Press.
- Bjerrum Nielsen, H. (1995). Seductive texts with serious intentions. *Educational Researcher*, 24(1), 4-12.
- Broadma, P., & Davenport, G. (1989). Creating and viewing the *Elastic Charles*: A hypermedia journal. Hypertext II. York, England.
- Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.
- Clifford, J. (1986). Introduction: Partial truths. In J. Clifford & G. Marcus (Eds.), *Writing culture: The poetics and politics of ethnography*. Berkeley: University of California Press.
- Eisner, E. (1992). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. New York: MacMillan.
- Eisner, E. (1993) *Forms of understanding and the future of educational research*. American Education Research Association (AERA) Presidential Address.
- Firth, R. (1936). *We, the Tikopia*. London.
- Geertz, C. (1973). *The Interpretation of cultures*. New York: Basic Books.

- Geertz, C. (1988). *Works and lives: Anthropologist as author*. Palo Alto, CA: Stanford University Press.
- Goldman-Segall, R. (1989). Thick descriptions: A tool for designing ethnographic interactive videodisks. *SIGCHI Bulletin*, 21(2), 118-122.
- Goldman-Segall, R. (1990). *Learning Constellations: A multimedia ethnographic research environment using video technology to explore children's thinking*. Doctoral dissertation, Massachusetts Institute of Technology, Cambridge.
- Goldman-Segall, R. (1993a). The growth of a multimedia school culture: A multivoiced narrative. *The Arachnet Electronic Journal on Virtual Culture*, 1(7), 7-12.
- Goldman-Segall, R. (1993b). Interpreting video data. Introducing a significance measure to layer descriptions. *Journal of Educational Multimedia and Hypermedia*, 2(3), 261-282.
- Goldman-Segall, R. (1994). Whose story is it, anyway? An ethnographic answer. *IEEE Multimedia* (Institute of Electrical and Electronics Engineers), 1(4).
- Harel, I., & Papert, S. (Eds.) (1991). *Constructionism*. Norwood, NJ: Ablex.
- Heider, K. A. (1979). "Truth" in film and ethnography. *Ethnographic Film*, 2, 16-18.
- Heshusius, L. (1994). Freeing ourselves from objectivity: Managing subjectivity or turning toward a participatory mode of consciousness? *Educational Researcher*, 23(3), 15-22.
- Horney, M. (1994). Interactive data visualization in qualitative research. *Computer Graphics*, 28(1), 38-40.
- Lather, P. (1991). Issues of validity. *Interchange*, 17(4), 63-84.
- Marshall, J. (1967). *N!OWA T'AMA: The melon tossing*. Film Distributor: DER.
- Marshall, J. (1969). *N/UM TCHAI: The ceremonial dance of the !Kung Bushmen*. Film Distributor: DER.
- Mehan, H. (1993). Why I like to look: On the use of videotape as an instrument in educational research. In M. Schratz (Ed.), *Qualitative voices in educational research*. London: The Falmer Press.
- Newton, E. (1993). My best informant's dress: The erotic equation in fieldwork. *Cultural Anthropology*, 8(1), 3-23.
- Papert, S. (1991). Introduction. In I. Harel & S. Papert (Eds.) *Constructionism*. Norwood, NJ: Ablex.
- Pratt, M. L. (1986) Fieldwork in common places. In J. Clifford & G. Marcus (Eds.), *Writing culture*. Berkeley: University of California Press.
- Rabinow, P. (1986). Representations are social facts: Modernity and postmodernity in anthropology. In J. Clifford & G. Marcus (Eds.), *Writing culture*. Berkeley: University of California Press.

- Tobin, J., & Davidson, D. (1990). The ethics of polyvocal ethnography: Empowering vs. contextualizing children and teachers. *International Journal of Qualitative Studies in Education*, 3(3), 271-283.
- Tyler, S. (1986). Post-modern ethnography: From document of the occult to occult document. In J. Clifford & G. Marcus (Eds.), *Writing culture*. Berkeley: University of California Press.

Notes

1. The term, Platform for Multi-Loguing, is a play on the three words: Dia-logue, logging video data (when using *Constellations™*) and on the logging practices of the forestry industry in British Columbia, the subject of the research that we are conducting at the Bayside Middle School. The term emerged during a conversation with Dr. J. P. (Jim) Gaskell at the University of British Columbia.
2. David Schneider has been quoted as having told the following joke that he heard from Marshall Sahlins. See Ester Newton's (1993) enticing article called, "My best dress: The erotic equation in fieldwork" in references for full citation.
3. Programmer David Greschler and documentary filmmaker Vivian Orni Mester were members of the team who worked on *Learning Constellations 1.0* with me.
4. In July of 1994, when I presented my research approach to a graduate class of Dr. Elliot Eisner at Stanford University, we discussed how validity could be determined in video ethnography given its inherent "untidiness." Eisner's comments have proved to be a source of challenge to me as I continue to question how any research can be tidy and neat. In whose eyes? For what purposes? I wonder if Piaget worried about neatness? Is an elegant theorem neat because it excludes so many interesting alternative possibilities? What is lost for the sake of neatness?
5. For further discussion of this passage, see both C. Geertz, *Works and Lives: Anthropologist as Author* (Stanford, CA, 1988), pp. 11-13, and M. L. Pratt, "Fieldwork in Common Places," in J. Clifford and G.E. Marcus, eds., *Writing Cultures: The Poetics and the Politics of Ethnography* (Berkeley, CA, 1986), pp. 35-37.

Acknowledgements

Many people have added rich layers to the ideas presented this article. Obviously, my deepest acknowledgment goes to those persons who have written so eloquently in the field. I have cited those who have deeply enhanced my way of thinking. On a more local level, my graduate students in a course I established called *Video Ethnography: Culture, Interpretation and Technology* have contributed in many special ways to the theoretical perspectives presented. Special thanks go to Lawrence Half. Elizabeth Crittendon has also contributed ideas and editorial expertise. I would also like to thank designers and programmers in MERLin—Monika Marcovici, who has now started her own software company called *Made by Magik*, and Lawrence Half for design and programming of the last HyperCard version of *Constellations*TM. Thanks to Rob McKeever for his work on the latest C++ version. Finally, I would like to thank both the *Natural Science and Engineering Research Council of Canada* (#5-81457) and the *Social Science and Humanities Research Council of Canada* (#410-94-1202) for generously funding this research of multimedia ethnographic research tools.