Under conventional definitions, the notion of sign language literacy is inherently oxymoronic. However, I wish to argue that the problem exists with the conventional notion that literacy is about written language and also that limited understanding of literacy is problematic. An effort to contemplate how different acts of literacy may manifest themselves in different mediums is necessary to further deepen understanding about literacy. A discussion about literacy in sign language or visual media is essential since conceptualization of literacy has been constrained largely by perceiving it in an audiocentric framework. While literacy is usually associated with language, it is nevertheless helpful to think about dimensions of literacy in visual media such as pictures, movies, cartoons, and art especially when attempting to document examples of literacy events in a nonwritten language like American Sign Language (ASL). Even though language and visual media are different in some of the ways meaning is constructed, a discussion on how complex meaning is constructed and conveyed by the visual mode is made illustrative by examining how it may take place in visual media and in ASL. In short, an attempt to transcend literacy as a phenomenon that pertains to skills in written language will help facilitate the discussion about some of the larger questions related to literacy.

The prominence of literacy surfaces in tandem with the growing indispensability of written language in society. So frequently has the association been made between literacy and written language that the term "literacy" has come, in the minds of many people, to simply mean the ability to read and write. After all, according to the etymology of the term, "literacy" comes from a Latin word meaning "marked with letters." Anyone familiar with the skills of reading comprehension knows that there are two major components of reading comprehension. The first one, "literal"—also coming from the same Latin root—means to comprehend words and sentences at face value. The second one involves cognitive aspects of understanding and writing, for example, making inferences, predicting, or using decontextualized language, and this essay concerns this second component.

The stance that literacy concerns written language, however, has the unfortunate effect of limiting the scope and depth of the discussion. The importance to be attributed to literacy should concern the quality or state of being literate that is said to be literate when he or she is "educated and knowledgeable." In the context of a modern Western model of learning, it may seem counterintuitive that one can be educated and knowledgable without having read extensively. However, it is important to seriously ques

8. Turning Literacy Inside Out

MARLON KUNTZE

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like writing. Most of them fall between those two poles and combine both analogic and digital means of representing meaning, and they vary in how much of each is utilized. Analogically based communication attempts to mimic reality by re-creating it in some ways while digitally based communication uses arbitrary symbols such as words whose meanings have been conventionally agreed upon. In making utterances more animillated, a speaker would add to words analogically based information such as gestures or making more liberal use of intonations. So one way the use of language varies is through the extent to which analogically based information is incorporated. For films, where images are the chief means of conveying meaning, they almost inevitably do incorporate language. Films vary—from those that are "action packed" in which less language is used to those whose unfolding of the plot depends more on dialogues. In the traditional way languages are studied, little attention is paid to the analogic component of communication; however, the emerging studies of co-speech gesture are increasingly suggesting that gestures are an important part of human communication.2 Crosslinguistic studies, especially those of non-Western languages, have yielded evidence that the grammar of those languages is more intertwined with gestures than what is seen in Western languages.3

An important difference between spoken language and written language lies in the fact that the conventions of writing do not present language in the way language is used in speaking. Written language has no devices for conveying analogically based meanings such as intonations, gestures, and facial expressions. Writing has to compensate, albeit in a limited way, by utilizing more words and punctuation symbols. In essence, writing is more digital than speaking is and that is one of the important reasons why communication in written mode is difficult and challenging.

Linguistics based on Western languages, especially language in written form, has largely been the filter through which the description of ASL grammar has been developed. Furthermore, it was done during the time there was a strong motivation to prove to a skeptical world that ASL was in fact a language, and as a result effort was made, probably a little bit obliquely, to show that ASL was indeed like any spoken language that traditionally has been portrayed as digital. Unfortunately it has resulted in some blind spots in our understanding of how ASL works. There are structures of ASL, such as classifiers that linguists are now beginning to understand as digitally based symbols being used as analogic devices for describing gradience in verbs of motion, in verbs of location, and in appearances and shapes of objects.4 In the past, there was understandably a strong ideological resistance to any discussion that may lead to a view that ASL incorporates analogic structures because of the historical stigmatization that ASL was nothing more than "gestures." Now with the linguistic study of ASL having matured and ASL already established in the annals of linguistics, interest is increasing in how ASL exploits analogic means of representing reality and weaves together analogic and digital modes of representation.

The extent of gradience possible in analogic representation exceeds the extent that is possible in digital representation. For example, facial expressions, meaning conveyed in a smile may be that the smiling person is happy. There are gradient ways of smiling to show different degrees of happiness, that is, a little happy, somewhat happy, quite happy, or very happy. At the same time there are different ways of smiling, each with a meaning such as being wished at, admired, or painfully polite or trying to restrain joy or to conceal disgust. Furthermore, each meaning of smiling has its range of gradience. Adding an analogic symbol such as an intonation to a word helps infuse gradience in the meaning of the word. For example, by uttering the word "long" in different ways, its meaning of the word is modified to convey the gradience of "long-ness" (e.g., a little long, somewhat long, quite long, very long, or too long). Analogic means of meaning representation constitute a prominent component of the linguistic structure of ASL. More incorporation of analogic means of communicating is evident in ASL and other signed languages than in auditorially based languages. The greater combinatorial possibilities of digital and analogic modes of representation give a language like ASL some characteristics not found in spoken languages.

Inference-Making Skills

One of the goals of literacy development is the development of higher-order thinking and reasoning skills such as making an inference that involves making use of existing knowledge or identifying relevant pieces of information to help arrive at meaning that is not in the content on the literal level. I want to discuss the act of inference making when processing content not only in writing but also in other modes such as speaking, singing, acting, or drawing. Briefly stated, the process of making an inference involves going beyond what is explicitly expressed in order to arrive at what is implied. What is expressed on the literal level ("meaning at face value") is often not the full message. The assumption is often that the person or audience the message is intended for has the necessary background information and/or reasoning ability to help arrive at the implied meaning. Sometimes the necessary contextual information is provided in the content, and the expectation is that the reader/listener would be able to identify these pieces of information to help contextualize the content.

Sometimes information understood at the literal level may, at the first blush, seem adequate. However, a skilled reader may see that there is more to the message than what is evident at the surface or that something is amiss on the surface. Having skills to make inferences does help one see if an inference has to be made and how to do it. In the following passage the language and details are relatively sparse; however by making inferences the reader can "create" more details in his/her mind and get more complex meaning:

A man gave $10.00 to the woman behind the ticket window and got $4.00 back. A woman with the man gave him $1.00, but the man refused to take it. Once inside, she proceeded to buy him a large bag of popcorn.

The passage just states a series of events: a man paying and getting change, a woman trying to give him money and buying popcorn. The reader may stop here with an acknowledgment of these events. However, if the reader wonders where, when, or why these events take place, the only way to get answers to those questions is by making...
inferences. By thinking where one would buy popcorn and pay at a ticket window, the best guess is that it most likely takes place at the movie theater. One can connect the dots from when the woman offers three dollars to the man, he refuses, and then buys popcorn. It is reasonable to infer that she buys the man popcorn because she is trying to pay for her share of the cost of going to the movies. If one knew how expensive it is to go to the movies nowadays, the fact that it is three dollars per person in the passage would make one pause and wonder. By using background information, one can conclude that this event probably did not happen recently.

Whether the same content is expressed in written language or in a different language such as ASL, or in a different mode like film, the act of inference making will be necessary if one is to achieve a richer interpretation of the content. The particulars of the inferences to make may vary more likely vary for each. While some commonalities exist in how meaning may be inferred, the variance among them may be due to the extent and the manner to which analogic representation is utilized. In ASL, analogic representations such as changing facial expressions or eye gaze would be obligatory. As typical in ASL narratives, the narrator would tell the story through the "voices" of the characters. In so doing, a skilled narrator would show the facial expressions, eye gazes, and occasionally body movements of the characters. The narration would have included a series of changing facial expressions and eye gazes of the woman that begins when she attempts to reimburse the man for the ticket. They would change to show the woman's reaction when her offer is refused and again when the woman decides to pay her share by buying the man popcorn. The additional information provided by such analogic means doubtlessly facilitates the act of inference making that is needed for interpreting why the woman buys popcorn. However, written English has an advantage that ASL does not. Content in written English is permanent; the reader can reread a passage while thinking of the intended meaning and trying to make inferences. ASL is evanescent, and the interlocutor has to memorize the details while thinking about their meaning. The cognitive requirements for arriving at a richer interpretation of the passage will be qualitatively different in some particular ways for each language, but in other particular ways, such as inferring that the event probably took place some time in the past, it is virtually similar for each language.

A comic strip or film provides more analogic information than ASL does. When the same content is portrayed in a film, it would be obvious that the couple is going to the movies. At least there will be more details in a film on how the couple interacts with each other as one attempts to reimburse the other and is refused. Some of the same inference-making activities will still be required, such as understanding why the woman buys the man popcorn. One can also infer from the way the couple looks, their clothing and hair styles, that paying three dollars was how much it cost to see a movie in the past.

Visual Literacy

Visual literacy is often thought of only as the ability to recognize and understand ideas conveyed through visual actions or images; however, many of the same cognitive skills required for comprehending content in writing are also required for complete comprehension of ideas presented through visual media. Richard Stanaitis defines visual literacy as the ability to actively reconstruct past experiences with incoming visual information to obtain meaning. In a quest to develop a definition of visual literacy, attempts have been made to describe the characteristics of a visually literate person. One such example is that a visually literate person is someone who can "discriminate and interpret visible actions, objects, and symbols, natural or man-made."

A comic strip is a good example of largely nonlinguistically based content for which considerable inference making is often required to ensure a fuller comprehension. While comic strips are often a combination of images and words, they may come without any captions. Even without captions and even in cases where meaning at the "literal level" seems initially adequate, a full understanding of those wordless comic strips is often not possible without first making inferences. In a Calvin and Hobbes comic strip, Calvin is shown in the first frame walking past his mother, who is not paying attention to him. In the second and third frames, she looks up and then she walks up the stairs. In the final frame, we see Calvin building a snowman in one of the rooms and his mother covering her eyes. The reader can stop at that level of reading, thinking it funny that Calvin would try to build a snowman in the house. The reader may also cringe, feeling sorry for the mother. However, there is a lot more to the strip that is left unsaid, and what remains unsaid becomes obvious only after the reader attempts to interpret the fourth frame through the prism of information provided in the first three frames. As in a well-crafted piece of poetry, the cartoonist is sparse in detail and those details are carefully chosen. Full comprehension of what the cartoonist tries to convey hinges on the reader being able to make a full sense of each detail. In the second frame, Calvin's mother suddenly looks up. The reader needs to infer why the mother looked up. The first frame shows Calvin being fully clothed for cold weather. The third frame shows the mother going upstairs. These pieces of information should lead the reader to infer that Calvin being fully clothed for cold weather and going upstairs is what probably caught his mother's attention. We are able to make this inference because we know that when one is clothed for cold weather, it means going outdoors. Staying indoors and going upstairs is the opposite outcome. Familiarity with the Calvin and Hobbes comic strip will provide the reader with additional information about the kind of child Calvin is. When he uses his background information, it is possible to make an inference that if the circumstances prompted Calvin's mother to stop what she was doing to check on Calvin, it meant Calvin must be up to something. The reader will know that it may be something that his mother dreads. So his mother must have known something is up that she cannot ignore or leave unchecked. We can make several more inferences from the information provided in the fourth frame. The room is likely Calvin's; the mother covers her eyes because she is upset. The reader familiar with the Calvin and Hobbes comic strips would be able to infer from the look on Calvin's face that he seems baffled why his mother is upset. Understanding the punch line of the comic strip is not possible until the reader makes an inference that Calvin is likely thinking that he has followed the rule that if he is to play in snow, he needs to dress warmly. That is exactly what he is doing, but he is not as smart as why his mother is upset and what in the world could be wrong with what he is doing this time around.
with limited success, is he helpful, the interpreter collects valuable information from the deaf man and in the end tells the hearing neighbor that the deaf man would not reveal where the money is. Then the narrator, role-playing the interpreter, grins and wiggles a finger into her ear as if in response to a loud noise. Then she slowly smiles with a shy arch of her eyebrow. The punch line of the story is conveyed purely analogically. It is done using only pantomime and facial expressions. The inferences that the audience can make that the interpreter wiggled her finger into her ear because there was a loud noise and that the noise was from the neighbor's gun will become a basis for an inference that the deaf man was shot dead. The next inference to make on why the interpreter was smiling, by interpreting it as a result of being now thirty thousand dollars richer, helps affirm an earlier inference that the deaf man is dead.

The extent of incorporating analogic representations in literary pieces of ASL is a chief reason why they are noted for their vividness and ease of visualization. While analogically based information helps make the content increasingly accessible on the literal level, the intended meaning or message nevertheless can still be complex and is often not made explicit. One will thus need to exert effort to think deeply about what is said in order to determine what is meant. Thinking deeply about the content has the effect of triggering the act of making inferences.

Text and Literacy

Text is commonly defined as content that is shaped and thus preserved through writing. However, I would argue that the term should be understood more broadly, to mean content that has been linguistically recorded in one way or another. There are things we can do with content that is permanent that would be more difficult with content that is evanescent and disappears as soon as it is uttered. Content that is written on paper or recorded on a tape allows one to step back and deliberate the manner by which the content is organized and how language is crafted to convey it. Text provides a means for content, as well as the language it is in, to become separate from the speaker and becomes an object for the speaker to look at, to think about, and to critique. When preparing a text for communicating to an unseen audience, the author needs to deliberate what to say and how to say it by thinking about what the audience may already know and what additional information it may need in order to make sense of the content as intended by the author. The ability to see the content and language in a detached way helps the author on several fronts: to clarify the ideas being communicated, to include the necessary background information, and to reflect on how the content is being linguistically packaged in a quest to get the content across to the target audience in an effective way. The ability to do it is a mark of literacy whether it is in writing, signing, or speaking as well as drawing a comic strip or making a movie.

The process of rephrasing language and refining ideas when developing a text often leads to a denser as well as more eloquent use of language. Text exposes the reader to the kind of language and commonly encountered elsewhere. Literacy is promoted when others have an opportunity for exposure to language that has been thoughtfully and carefully crafted and to consume content whose development of complexity takes place...
On Being Literate

One of the conclusions one can make based on this essay is that in an extreme case it is entirely possible for one to become literate without ever having read a sentence. As a matter of fact, there was an account of a young man who was so dyslexic that reading a sentence was painful for him. His collegiate application was turned down everywhere because of "poor grades and low board scores." He had a chance to go to Claremont College as a special student. There he managed to pass all his classes and get an A+ in his Senior Seminar without ever having read a book or written a paper. His friends read books for him and he would dictate his papers to a friend who would type them in rough draft. He would edit his paper while his friend read each page out loud. It would be incorrect to call this young man illiterate. As far as his ability to process the content and to organize his thoughts, he is highly literate.

An important objective of literacy development is the development of skills to think about information and to respond to it thoughtfully. Literacy is less about the skills to access information. Learning to read is about learning how to access information through print. When one begins to read, it means he/she begins to access one of the means of becoming literate. However, the actual process of becoming literate depends on whether one gets to be cognitively engaged with the content. Because books are a depository of knowledge, ideas, and viewpoints accumulated over time, they will always be the most important and powerful means of literacy development. At the same time, books should not be thought of as the sole means. We have seen, in the case of the dyslexic student discussed above, how he became literate by accessing books through oral means. Actually, if he has access to all the content he needs for college through spoken language in a recorded form and if he can submit his work on an audiotape instead of paper, he would not have to depend on his friends to read his books aloud and to type in what he writes. In fact, it is entirely conceivable to conjure a society that builds its knowledge, ideas, and viewpoints by recording them in spoken language and creating libraries full of audiotapes.

On the contrary, because content is more accessible in spoken language than in written language, it is plausible to argue that the literacy level in such a society can possibly exceed that in a written society.

One of the important questions that this essay also attempts to hint at is whether literate skills acquired through one mode are the same as those acquired through another mode. It is an important question to pursue especially if we want to think about literacy development through multiple means. However, for now it seems reasonable to speculate that they are the same at least to the extent that they concern specific cognitive processes that are similar cross-modally. If it is true, it means that at least some literacy skills asquired through one mode are transferable to another mode. That question has a lot of implications related to the issue of ease of access to the content. It seems reasonable to argue that there may be an advantage from a developmental perspective to utilize a mode that provides the best access to content as a starting point for literacy development while skills for accessing content through other modes are being developed. For example, an opportunity to develop skills in making inferences through comic strips or ASL narratives may give a child a head start in literacy development while the child develops skills to access content in written English. It could be that we are making literacy development artificially difficult for many children by conjecturing it as a process that takes place only through the written domain.

In Summation

One way to delve deeper into the heart of literacy is to test the boundaries within which the discourse about it is currently confined. An investigation to understand literacy in ASL, which is not only nonwritten but also visually based, is an opportunity to achieve a more global understanding of literacy, as it allows us to move beyond the traditional associations between literacy and written language. An investigation to understand literacy in visual media that are largely nonlinguistic but visually based like ASL is an opportunity to move beyond the traditional association between literacy and language. A discussion about literacy as it cuts across different modes of communication is important for the effort to understand literacy in a more encompassing way.

Various tools of communication may share some of the same literacy skills, but some of those skills may be particular to a given modality or to a given mix of analogic and digital representations of meaning. Literacy concerns a kind of dimension in communication that is a product of various cognitive processes such as logical reasoning about the content and planning on how to get it across to others. Cognitive requirements and procedures for planning may vary to some extent across different modes of communication. For example, the lack of analogic information in written language may contribute to its difficulty as a medium for communication and visualization information. The cognitive engagement required for visualizing content presented in written form constitutes one kind of literacy skills. In public speaking, the lack of interaction with the


11. "Uncoding the Ethics," narrated by Freda Norma, is a part of the collection of literary work of ASL. In Signing Treasures: Excerpts from Signing Naturally Videos by Ellis Mae Lenz et al. (San Diego: DawnSignPress, 1996).

12. Patrick Boudreault gave a presentation at the Revolutions in Sign Language Studies conference (Gallaudet University, Washington, D.C., March 22-24, 2006) on how technology is now unleashing new opportunities to create and publish content in ASL topics ranging from journalism to academic discussion. For a different but related discussion on how language differs when it is spoken as opposed to written, see Khorow Jandahane, Spoken and Written Discourse: A Multidisciplinary Perspective (Stamford, Conn.: Ablex, 1998).


14. James Gee argues that the traditional definition of literacy is too constrained and maintains that literacy is about skills with language that are outside the scope of everyday use. He attempts to define literacy on the level of discourse and by discourse he means "a socially accepted association among ways of using language, of thinking, and of acting that can be used to identify oneself as a member of a socially meaningful group or social network." A community may come into being because of a common language or because of shared interest and knowledge such as a scientific community. For more information on his attempt to define literacy, see "What Is Literacy?" in Language and Linguistics in Context: Readings and Applications for Teachers, ed. Harriet Luria, Deborah Seymour, and Trudy Smoke (Mahwah, N.J.: Lawrence Erlbaum Associates, 2006), 257.

Notes


2. For recent work on co-speech gesture, see a collection edited by David McNell, Language and Gesture (Cambridge: Cambridge University Press, 2000).


4. See Karen Emmony, ed., Perspectives on Classifier Constructions in Sign Languages (Mahwah, N.J.: Lawrence Erlbaum Associates, 2003) for a collection of linguistic discussions on classifier constructions; the volume contains a few chapters that focus on the role of gesture in classifier constructions. Also see Scott Liddel, Grammar, Gesture, and Meaning in American Sign Language (Cambridge: Cambridge University Press, 2005) for a discussion on how grammar and gesture are integrated in ASL in meaning construction. Liddel suggests that the conventional concept of "language" has been much too narrow and that a more comprehensive look at vocally produced languages will reveal the same integration of gestural, graminatical, and symbolic elements.


6. An attempt to define visual literacy was probably first attempted by John Belen in "Some Founda ions for Visual Literacy," Audiovisual Instruction 13 (1980): 98. In a list of the defining characteristics of visual literacy, he lists three key components of visual literacy as skills to (1) perceive, (2) understand, and (3) evaluate.