

## Critical Viewing of Television

### **Biography**

Matthew McClain is a graduate student in the department of electrical and computer engineering at the University of Illinois at Urbana-Champaign. His research in artificial intelligence focuses on language acquisition in an anthropomorphic robot. His undergraduate degree is in electrical engineering from Rensselaer Polytechnic Institute.

### **Abstract**

Television provides people in technological societies with information of a completely different character than any other media. Compared to the activities of reading or normal interaction with our environment, the act of watching television is characterized by very little cognitive involvement of the viewer. Whether it is advertisements, sitcoms or even educational programming, the way that television is used to convey information inhibits the viewer's ability to critically challenge the information they are receiving. I propose two possibilities for television viewers to overcome this impediment to cognition — the first is to develop a personal means of facilitating a critical evaluation of the information presented on television, sometimes called critical viewing. The second possibility emerges from further advancements in technology where the viewer is enabled to take a more controlling and interactive role in the information they are receiving.

The dominant form of graphic mass media in our society is television. Because of the way in which this medium presents information, cognitive responses by the viewer are hindered. Mechanisms are used in the production of television to inhibit long-term storage and critical evaluation of the information presented. To assume that a viewer's purpose may be to cognitively analyze what they are watching as opposed to just wanting to be entertained, I will investigate and propose actions that can be taken the next time one decides to watch television. Last I'll explore the possibilities for new technology to enhance television and create new forms of graphic mass communication that will encourage the viewer to use their cognitive abilities. As everything is relative, I'll compare and contrast two other common situations in which we receive information: reading and normal interaction with our environment.

The two principle ways in which television hinders the viewer's ability to use cognitive functions are that it impedes long term storage and makes other functions such as imagination and planning nearly obsolete. In order to be able to perform cognitive tasks on the visual information we receive, we need to be able to recall it from our long-term memory. The problem with television is not that there is too much information present, as whenever our eyes are open we are receiving at least as much input. In order to deal with reception of massive amounts of information, we filter out much of what we see by focusing our attention. However, television's constant motion and scene switching grabs our attention, preventing us from focusing on any one thing for very long. As Singer points out, "Human beings are, in effect, 'wired up' to make a response to any sudden, new, and unexpected stimulation that occurs in the environment. This is called 'orienting reflex' and insures our safety since it makes certain that we will react suddenly and effectively to any major change that confronts us" (Singer, 37). This, combined with the fact that our short-term memory is very vulnerable to interference from continued input

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the information that it exposes us to. Singer states: "This is a basic problem with the television medium. It is in effect introducing us constantly to new material before we have had a chance to grasp either the printed or verbal and auditory material being presented, and as a result it yields a high rate of information loss" (Singer, 53).

Compounding this effect is the absence of time for reflection on the information given to us. In Posner's study of visual short-term memory, he cites Waugh and Norman's (1965) model of memory which states that "...the effect of rehearsal is to present an opportunity for information to be sampled from the short to the long-term store" (Posner, 55). Posner also refers to research by Sperling (1963) and Conrad (1960) which shows that this rehearsal is only effective for helping long term storage if it is done before the capacity of short term memory is reached (Posner, 55). Sperling's work on the capacity of visual information store finds that when presented with 12 symbols for 50 milliseconds, the subjects of his test could recall about 9.1 symbols immediately after the symbols were taken away, and this number decays to about 4.3 symbols one second later (Sperling, 20-21). So, the information presented to us on television quickly fills our short term visual memory, making frequent reflection necessary to retain what we see.

In contrast, when reading there are no inherent distractions (of course the environment one chooses to read in may present some). As well, we have full control over the rate at which we are receiving information. In order to help incorporate what we read into long-term memory we can stop at any time and reflect on what we were reading. When involved in normal discourse with our environment, we choose what we want to focus on and filter out the rest. Of course, there are situations when there is a lot of motion in our field of view, but usually most of it is gradual and/or predictable and so can also be filtered out. An exception would be a situation like driving a car, when there may be fast

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moving objects in our field of view, which is why the task commands so much of our attention. But even a situation like that doesn't have the distractive effect of instantaneously cutting to a new view as done on television through switching camera angles or shifting to a new scene. The only comparable phenomenon that comes to mind would be watching fireflies. If you've been outdoors on a warm summer evening in the company of these insects, it can be a distracting experience. You can't help focusing your attention on each little green blink.

The other cognitive functions that are used while reading or normal daily discourse and not used while watching television are imaginative/creative thinking and planning. I group these together since both involve synthesizing information from our own experiences with the information being received. One could also include the forming of schemas, a cognitive function that is performed to some extent while watching television. Anderson and Lorch theorize that while television viewers are actively engaged in creating schemata: "We assume that the viewer, through experience with television as well as through general world experience, develops expectations about the temporal and conceptual flow of normal television programs" (D.R. Anderson, 6). At this point, I would question how much of an active experience schema forming is as well as the complexity and variance in the schemata that we form for television viewing. If a show has simplistic characters and predictable plotlines, it would make sense that the schema formed for dealing with such a show would not be very complex and would not need frequent modification. Planning is a cognitive function that we need to use when interacting with our environment. We must think about what actions we are going to perform next to meet whatever goals we determine for ourselves. This capacity is not needed when viewing television — the viewer simply sits back and watches. Such a planning mechanism is not used when reading, either, however this is where imagination or creative thinking comes in (just as imagination is

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In order to facilitate a critical analysis of television, an active stance toward the viewing experience is necessary. This capacity can be generalized for all media and has been defined as "the skillful collection, interpretation, testing and application of information regardless of medium or presentation for some purposeful action" (J. Anderson, 22). First, in order to facilitate use of cognitive functions on the information received from television, it is imperative that the information enter long-term storage. Fundamental to this is extracting the information that is important and allowing time to reflect. Since this practice is simply a form of learning, principles of learning to learn and metacognition can be applied to become a more critical viewer. Becoming aware of the learning situation is an important aspect. "In order to become expert learners, students must develop some of the same insights as the psychologist into the demands of the learning situation. They must learn about their own cognitive characteristics, their available learning strategies, the demands of the various learning tasks and the inherent structure of the material" (Brown, Campione, and Day, 16-17). So, in order to watch television with a critical mind, we must be aware of factors like the method of production of television, the assumptions that we have while watching television and our purpose for watching. This awareness will help us ask the right questions about the information we receive — another key part of becoming a critical viewer. Reynolds and Wade note in their study of metacognition programs, "A characteristic underlying many successful elaborative approaches is the use of self-questioning to monitor and regulate learning"

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(Reynolds, 315). The types of questions one asks depend on the learning situation. Chances are that we already know most of the useful questions to ask from our academic training to become critical readers. Skills such as "rehearsal, anticipation and self-questioning" (Reynolds, 315) generalize well to similar activities, depending upon other factors such as "appropriateness and similarity of the generalization task,... and, perhaps most important, children's understanding of the value of the strategy as to its potential for success in variables that several authors also found important" (Reynolds, 315). Although this makes reference specifically to teaching children, these skills are also applicable to adults. Then, if the knowledge acquisition tasks of reading and television viewing are similar enough, we should be able to apply critical reading strategies to critical viewing. The questions we ask while reading would be changed only slightly to fit the new context. Consider elements of literature such as diction, tone, syntax and rhetoric. Questions that we ask ourselves while watching television could concern emergent properties of television that parallel these. These properties take form in context – for example when many words are put together onto pages of paper, bound into a book with an author's name on the cover and stuck on the bestseller's rack at a popular bookstore. New information emerges from the interaction of these factors. So then, what emergent properties are there for television? What is television comprised of and how it is produced? A television show is a series of pictures and dialogue, but it's funded by one group of people, written by another, directed by another and acted out by yet another. What emerges from that interaction? Similar to considering the author's word choices we could consider the writer's dialogue choices, the director's choice of camera angle and the actor's vocal tone or rhythm. These are just a few of the questions that can be considered if we become more aware of our television viewing experiences.

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Once we've identified the right questions to ask, time to reflect on the evidence to facilitate the long-term storage of the information is needed. In order to provide this time for reflection, an easy thing to do is mute the commercials and look away from the television. This is already a common practice among many television viewers. Another way to encourage rehearsal is to watch with someone else. A short discussion during commercials or even during the show creates good opportunities for reflection. If you see something important or something you don't understand, tell your viewing partner about it. Concerning learning programs, Bazeli notes that, "It is in cooperative learning approaches that the best conditions for promoting generative knowledge are found..." (Bazeli, 213). As well, your partner might pick up on or remember something that you didn't and bring a different point of view, both adding to what you can potentially take away from the viewing experience.

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Advancements in technology also hold some promise to help invoke critical thinking while watching TV. New products and innovations can help to control the rate at which information is delivered, make television a more interactive experience and provide additional information to reinforce what one is watching. Already products are available that allow you to control time through pausing. Such a device is ideal for giving oneself time to reflect on the material one is taking in, paralleling the reading experience. The Internet can offer great opportunities to share perspective as well as consider other's perspective. Imagine a network posting a website after a show in which you can participate in a discussion with people of other backgrounds. For example, if you were curious about what a middle-class factory worker thinks about a special on the new economy, you could access that point of view. Advancements in virtual reality could take you inside your favorite sitcom, so that instead of sitting back and watching, you could be a bystander or even participant. This would introduce the need for planning as a part of the experience. One can imagine the ability to become immersed in another world, as in the motion picture "The Matrix," where the viewer (or rather participant at this point) could have even more control over the environment. To even go beyond that, would it be possible to

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The manner in which television presents information actively inhibits the viewer's ability to perform a critical evaluation of the information conveyed as well as perform other cognitive tasks such as creative thinking and planning. It is possible, however, to train ourselves to become critical viewers using strategies of metacognition and learning. There is also the potential for advancements in technology to transform television and graphic mass media into more interactive and meaningful communicative events.

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Matthew McClain

University of Illinois  
Champaign-Urbana, IL 61820  
McClain, 266-277  
mcclai@uiuc.edu

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Rhode Island School of Design  
Providence, Rhode Island 02903

## References

ANDERSON, D. R. AND E. P. LORCH. 1983. *Looking at Television: Action or Reaction?*. In Bryant, J. and D. R. Anderson, editors. *Children's Understanding of Television: Research on Attention and Comprehension*. New York: Academic Press, Inc.

ANDERSON, J. A. The Theoretical Lineage of Critical Viewing Curricula. *Journal of Communication*, Summer 1980, 64-70.

ANDERSON, J. A. 1983. Television Literacy and the Critical Viewer. In Bryant, J. and D. R. Anderson, editors. *Children's Understanding of Television: Research on Attention and Comprehension*. New York: Academic Press, Inc.

BAZELI, F. P. 1990. A Thinking Curriculum for Secondary Schools. In Smith, R.M. and Associates. *Learning to Learn Across the Lifespan*. San Francisco: Jossey-Bass, Inc.

BIRKERTS, S. 1994. *The Gutenberg Elegies: The Fate of Reading in an Electronic Age*. Boston: Faber and Faber.

BRAND, S. 1987. *The Media Lab: Inventing Future at MIT*. New York: Viking Penguin, Inc.

BROWN, A. L., J. C. CAMPIONE AND J. D. DAY. 1981. Learning to Learn: On Training Students to Learn from Texts. *Educational Researcher*, 10:2, 14-21.

CANDY, P. C. 1990. How People Learn to Learn. In Smith, R.M. and Associates. *Learning to Learn Across the Lifespan*. San Francisco: Jossey-Bass, Inc.

CONRAD, R. 1964. Acoustic Confusions in Immediate Memory. *British Journal of Psychology*, 55:1, 75-84.

CSIKSZENTMIHALYI, M. AND R. KUBEY. 1981. Television and the Rest of Life: A Systematic Comparison of Subjective Experience. *Public Opinion Quarterly* 45, 317-328.

MERINGOFF, J. K. 1980. Influence of the Medium on Children's Story Apprehension. *Journal of Educational Psychology*, 72:2, 240-249.

POSNER, M. I. 1969. Short Term Memory Systems in Human Information Processing. In Haber, R.N., editor. *Information Processing Approaches to Visual Perception*. New York: Holt, Rinehart and Winston, Inc.

REYNOLDS, R.E. AND S.E. WADE, S.E. 1986. Thinking about Thinking about Thinking: Reflections on Metacognition. *Harvard Educational Review*, 56:3, 307-317.

SINGER, J. L. 1980. The Power and Limitations of Television: a Cognitive-Affective Analysis. In P. H. Tannenbaum, P.H., editor. *The Entertainment Function of Television*. Hillsdale, New Jersey: Erlbaum.

SINGER, J. L. AND D.G. SINGER. 1983. Implications of Childhood Television Viewing for Cognition, Imagination, and Emotion. In Bryant, J. and D. R. Anderson, editors. *Children's Understanding of Television: Research on Attention and Comprehension*. New York: Academic Press, Inc.

SPERLING, G. 1963. A Model for Visual Memory Tasks. *Human Factors*, 5, 19-31.

WAUGH, N.C. AND D.A. NORMAN. 1963. Primary Memory. *Psychology Review*, 72:2, 89-104.

"The Matrix" motion picture. 1999. Wachowski, L. and A. Wachowski, writers/directors. Warner Brothers.