Some Methodological Considerations on the Use of Multimedia Q-Sample Items

Paul Grosswiler
University of Maine

ABSTRACT: The design, selection, production and administering of two multimedia Q samples are described in a Q study designed to explore sensory orientations in media and arts preferences. The precedents for nonverbal stimulus items provide a basis for the multimedia samples. One Q sample includes slides of print news media, and audiotapes and videotapes of broadcast news media. The second Q sample contains slides of literature and visual art items, and audio and videotapes of music, television, movies and games. The multimedia items were coupled with typed references in a two-stage sorting process. Pretesting, subject responses and reliability testing suggest that multimedia Q samples can be effectively administered with interpretable factor results.

Precedents for Multimedia Q Samples

The use of nonverbal stimulus items, such as smells, colored paper and images of paintings, began with the birth of Q methodology. Stephenson (1987) has said that his first Q studies were of olfaction, with lavender at the positive extreme, sulphur at the

---

Author's address: Department of Journalism and Mass Communication, University of Maine, 107 Lord Hall, Orono, ME 04469 (Email PaulG@maine.bitnet).

Operant Subjectivity, 1992 (April), *15*(3), 65-80

negative and water in the middle. Some of his other early experiments were unpublished studies in aesthetics (Stephenson, n.d.). Stephenson (1986) has also said that in his first unpublished manuscript, written in 1935 on the measurement of aesthetics, subjects who were shown works of art liked half and disliked half the items on a scale of pleasure, through neutrality, to unpleasure.

In another early study, Stephenson (1935) constructed a Q sample to measure taste, or predilections for color, with 60 pieces of colored paper. He also created a Q sample to measure the aesthetic value of a work of art, or the "proper" way to look at art (Stephenson, n.d.), by assembling 50 color representations of paintings in the same class-schema, or concourse, as a Picasso abstract painting. The pictures were sorted on a forced-distribution scale from most-liked to most-disliked. Stephenson called for Q methodology to be used in the development of experimental aesthetics through individual impressions of the works of art themselves.

The really pertinent methods are those of *impression* (Beebe-Center, 1932, pp. 12-37), and they were invented to study aesthetical problems. These, as the term suggests, rely upon a person's judgment -- the individual is asked whether he or she likes or dislikes this or that painting, poem, or piece of sculpture. From the judgments given, we have to develop a science of aesthetics.

This suggestion of instructing subjects to sort paintings, poetry and sculpture has not been found in a single study by Stephenson, although he has used pictures (1960), advertisements (1963) and television programs (1976) as stimulus items. In the television viewing study, he proposed showing children a television program and immediately afterward presenting them with 3-by-5-inch photographs of significant frames from the program for sorting under a series of instructions, such as most frightening, most enjoyable, and most memorable.

He approached literature and movies as sources of statements rather than use the works themselves as stimulus items. In one, Stephenson (1978) showed a film to a group of subjects who were asked to write down their feelings about the film. Statements were composed from the reports and comprised the Q sample. Stephenson also took statements by and about a character in a Eugene O'Neill play for a Q study (1980) about the hero's sub-

jectivity. Two other Q samples of statements were derived from literary essays about Alexander Pope's "Rape of the Lock" (1980) and John Keats' "Ode on a Grecian Urn" (1972).

Other Q studies have employed nonverbal stimulus items, including images of faces and photographs of political posters. In the former, Koch-Weser's (1961) study of self-identification with advertising showed that subjects identified with smiling people and family groups instead of unsmiling or serious people. In the second, Brown (1976) studied the comparative preferences of 45 subjects to a set of 60 political posters selected from a published collection from most appealing to most unappealing. Standardized photographs were produced of the posters for sorting, and the four factors of preference systems that emerged were interpreted according to the political issues and figures in the posters. In a further step, one subject sorted the posters under 30 conditions of instruction.

Designing and Selecting Multimedia Q Samples

Combining stimulus items from different media and different class-schema, similar to Stephenson's suggestion of sorting poetry, sculpture and paintings, was selected for a Q study exploring three hypotheses derived from Marshall McLuhan's theorem that "the medium is the message" (Grosswiler, 1990a). McLuhan argued that dominant media forms shape sensory preferences: The visual book medium and related media create visual sensory preferences; the acoustic television medium and related media create acoustic sensory preferences. Further, media-shaped sensory preferences in turn shape aesthetic and ideological preferences.

Several studies since McLuhan's first study in the early 1950s (Marchand, 1989, p. 74) have exposed research subjects to the same content using different media to explore the effects of the medium separate from the effects of content.[1] This study departs

[1]In McLuhan's study, four groups of students observed a lecture either in person, on radio, in transcript form, or on television. The television group scored highest on comprehension and retention of content; the print group scored lowest; the radio group was third.

Responses to the same message and communicator presented in the "hot" media of print, film, and radio and the "cold" medium of tele-

from that research design for three reasons stemming from McLuhan's theoretical foundations. First, the design attempts to recognize McLuhan's "mosaic" methodology; second, it treats the medium and content as elements of a hybrid relationship rather than isolated factors; and third, it posits that medium effects will not be affected by intervening variables, such as the conscious responses of subjects. This study treats media and content as a totality rather than separating media from content and presenting Q items of the same content across different media.

McLuhan's mosaic methodology (1962, p. 7) was a nonlinear process based on constantly interacting media forms. The mosaic approach treats a problem without isolating units of analysis and attempts to discover relations and principles that influence the entire problem area (Lindley, 1986). Although accused of negating content altogether (Hauser, 1982, pp. 611-617), McLuhan identifies content as another expression of medium, as new media adopt old media as their content. The content is a red herring.

> For the content of the medium is like the juicy piece of meat carried by the burglar to distract the watchdog of the mind. The effect of the medium is made strong and intense just because it is given another medium as "content." The content of a movie is a novel or a play or an opera. The effect of the movie form is not related to its program content. (McLuhan, 1964, p. 32)

---

vision yielded no support for the concept of hot vs. cold media, or the view that any medium is superior or more effective (Dommermuth, 1974). Research also suggests that the medium affects recall (Stauffer, Frost & Rybolt, 1981), and a comparison of television instruction with other instruction methods (Quander, 1981) showed a difference in television communicating educational content in some types of development. Others (e.g., Greenfield, Farrar & Beagles-Roosl, 1986) found that radio more than television stimulates the imaginations of two age groups of children, with a more general effect caused by medium than by story content. And most recently, a study presented two news topics through radio, television and newspapers, suggesting that people tend to remember more from television than from audio alone, and that television does not lead to less information gain than newspapers (Wicks & Drew, 1991).

The research design also attempts to reflect McLuhan's assertion that media effects are not to be found in conscious understanding or evaluation:

> The effects of technology do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance. (McLuhan, 1964, p. 33)

The study was designed to begin measuring visual and acoustic orientations in (1) news media preferences, (2) aesthetic preferences, and (3) ideological preferences, working with McLuhan's theory. For the study, 68 undergraduate students at a state university in Maryland completed three separate Q sorts and a media-use questionnaire, and responded in writing to open-ended questions about extreme items. The subjects were selected in order to study the sensory preferences of a group born in a television-dominant culture. Three Q samples were included in order to separate the class-schema of stimulus items according to the study's three hypotheses and minimize the overlapping of categories of multimedia items. The three Q samples included two multimedia Q samples and a third Q sample of written statements. The two multimedia samples were divided into (1) news media items consisting of 32 items classified according to McLuhan's criteria of visual and acoustic media style and form; and (2) fine arts and popular culture items consisting of 48 items classified according to the same criteria. (For discussion of McLuhan's visual and acoustic criteria, see Grosswiler, 1990a, 30-35, 95-99, 180-215).

After defining the overall research design, solutions were needed for choosing specific stimulus items for the two multimedia Q samples. The news media sample consisted of 32 items in order to allow the researcher to include four visual-style items and four acoustic-style items for each of four media -- newspapers, magazines, radio and television. McLuhan's references to news media and the arts were used as often as possible in selecting stimulus items, and one reason the news media sample is smaller is that he referred less often to the news media than to the arts and popular culture. When McLuhan's specific references were not available or not specific, the researcher made selections based on McLuhan's general criteria.

For example, McLuhan referred to the *New York Times* and *New York Daily News* (McLuhan, 1964, p. 219) as examples of the

"literary" (or visual) and the "telegraph" (or acoustic) press, respectively; but only the *Times* was available for the study; the researcher inferred that the *Wall Street Journal* and *USA Today* are similar examples. McLuhan referred to *Time* and *Life* (1964, pp. 152, 183) as mosaic/acoustic and pictorial/visual, and both are in the sample; inferred by the researcher was *People.* McLuhan (1964, p. 192) differentiated the "book bias" of the British Broadcasting Corporation from the "hectic vivacity" of American commercial radio and the intimacy of the talk show; the study uses the BBC news and National Public Radio news as "book bias" examples contrasted with ABC Radio news and a local Baltimore talk show. Within television, some genres, such as Westerns, express a print-visual bias for McLuhan (1970, p. 90). The researcher here applied the criteria from the other three media to include "ABC World News Tonight" and "60 Minutes" as more linear, word-centered and visual television items than "CNN Headline News" and "48 Hours."

For the second multimedia Q sample of the arts and popular culture, more items were selected because the lion's share of McLuhan's references were to literature, music, art and popular culture, and his theory rests largely on arguments made in his analysis of the arts and popular culture rather than news media. Also, a large sample allowed the researcher to subdivide the four categories. For example, the literature items include visual and acoustic items from poetry, novels and drama. Specifically, James Joyce's *Finnegans Wake* creates a total, or acoustic, environment of all cultures from the past (McLuhan & Parker, 1968, p. 7), while Cervantes' *Don Quixote,* by contrast, reflects the power of print overtaking the real world (McLuhan & Watson, 1970, pp. 169, 189). In drama, Samuel Beckett's *Waiting for Godot* confronts the acoustic-electric age's destructiveness (pp. 8, 184), while George Bernard Shaw's *Pygmalion* embodies the mechanical industry of precise repetition (p. 144).

The music items included selections from the acoustic music of Arnold Schoenberg, Igor Stravinsky and the Beatles, in contrast to the visual music of Mozart, Johann Strauss and Dixieland jazz (McLuhan, 1964, pp. 40, 245, 286; McLuhan & Watson, 1970, p. 83; McLuhan & Parker, 1968, p. 41). The selections also were subdivided into groups such as choral, chamber and symphonic items. The art items included self-portraits, landscapes, still lifes and other sub-groups of both visual and

acoustic styles. For example, a self-portrait by Rembrandt, who represents the return of the gaze of the observer and the dualism of visual painting (1968, p. 13), contrasts with a self-portrait by Cezanne, who was the first to abandon the illusion of single-perspective and favor multiple perspective and structure in his acoustic painting (1964, p. 280). Also, Seurat's reversal of perspective in pointillism in a landscape, which makes the viewer the vanishing point (1968, pp. 24-25), offers an acoustic alternative to the visual matching of the outer world in a Gainsborough landscape (1968, pp. 119, 121). Finally, the popular culture category was subdivided into television, movies, comics and games. Also, several of the music and literature category items overlapped with the popular culture category. For movies, Marilyn Monroe's *Gentlemen Prefer Blondes* was chosen for McLuhan's (1964, pp. 277, 279) contrasting the movie star system, which is highly individualized and therefore visual, with the character-based television system. The acoustic-style film inferred from McLuhan was Madonna's *Desperately Seeking Susan*, which challenges middle-class goals and demands roles, much as McLuhan and Watson (1970, p. 66) argue does *The Graduate*. *Max Headroom* was chosen as an acoustic television item because of the character's solely electronic existence; *Magnum, p.i.* was chosen as a visual item based on a comparison of McLuhan's discussion of *Bonanza*. For comics, McLuhan (1964, pp. 153, 277) cites *Blondie* and *Pogo* as representing the two styles; this study used *Blondie* and added *Outland* as a substitute for *Pogo*. Finally, McLuhan (1964, pp. 211-212, 284) argued that baseball is a visual game and football an acoustic game.

Producing and Administering the Q Sorts

The multimedia Q samples represented a particular problem in producing and administering the sorts. Unlike Stephenson's (1976) proposal to study television viewing, which suggested 3×5-inch still photographs of key scenes in a program be sorted, this study sought a response to the television medium itself as differentiated from still images. Like Brown's (1976) political poster study, the print media items for newspapers and magazines, as well as literature and paintings, could be represented with standard photographs, or a combination of photographs, actual newspapers, magazines and books. The acoustic media --

radio, television, music and movies -- however, also needed to be represented in a way resembling their actual form. Radio news and music could be heard on individual audiotapes, and the subject could sort the tapes. The television items could be similarly treated, as could the movies if the video version could be accepted as a substitute for the screen version.

Envisioning an overwhelming task of reproducing individual tapes of all radio, music, television and movie items, and the seemingly impossible task of physically sorting the piles of tapes, books, magazines, newspapers and photographs, the researcher sought to simplify and equalize the representation in a comparable or normalized format. The goal was to present the actual media form of each item as closely as possible, and to make the sorting process as uniform and manageable as possible. Because the multimedia samples already were comparing extremely diverse items, the researcher felt it would make the sorting more manageable to simplify the bulk and types of presentation of stimulus items. Making the process uniform also would prevent some items from being translated into another form (e.g., music into an album cover, tape case or score, or radio into written titles), while other media retain their basic visual form (e.g., photographs of paintings). Another goal was to be able to administer the sorts in small groups.

The compromise solution was to devise a "coupling" of all multimedia stimulus items with typed references and a two-stage sorting process. First, slides were made of the newspaper, magazine, literature, art and comics items. Front pages and covers were used for the newspaper and magazine items. McLuhan and Parker's (1968) excerpts from poetry were used for those items; slides of title page and first page of text were used for novels; and a representative page of text was selected, with title page, for the drama items. Almost all the literature items were from McLuhan's published work; all of the art items were reproduced from 11-by-14-inch posters from the National Gallery of Art, Washington, DC. All but one of the works was from a specific artist referred to by McLuhan, and some were of specific works. Audiotape segments ranging from about 30 seconds to a minute were made of all radio and music items. Videotape segments, also ranging from about 30 seconds to a minute, were made of all television, movie and game items. When possible, the taped items were taken from the beginnings of well-known, represen-

tative or available works from the item, whether it was a radio or television news program, a symphony, or a movie. If the researcher could not obtain a satisfactory segment that was within the 30-60 second general time frame, a selection was made from within the item. Editions of magazines and newspapers were selected based on availability from the University of Missouri libraries. Because a response to the medium rather than the content was the objective, items were selected with as neutral content as possible. Likewise, overt sexual and religious content was avoided.

These multimedia items were coupled with typed references including the name of the author (if applicable), the title of the item, and the phrase "and similar newspapers" (or the appropriate medium) added to move the subject away from a response to the particular content and toward an overall response to content, style and form. The selection of this method of presentation was made to eliminate the awkwardness of sorting actual objects and to make the media presentation of all items uniform by focusing on their shared, underlying visual or acoustic form in the multimedia phase and by translating all the items to written statements and the same point in the sorting process.

The order of the stimulus items in both Q samples was randomized and the slides and tapes were placed in that order for all sorting. The sets of typed references were placed in the same randomized order and given to the subjects when they arrived for the study in groups ranging from 6 to 20 subjects. Most of the sorts were administered in a classroom containing a VCR-TV, a slide projector and screen, and a cassette player connected to four ceiling-mounted speakers. About half the 70 subjects sorted the news media Q sample first; the other half sorted the aesthetics Q sample first.

When they arrived, the subjects were told they were volunteering in a media aesthetics study and were asked to respond to the two Q samples based on whether they liked, disliked or were neutral about the items. They were instructed to sort the typed references in three preliminary piles as the slides and tapes were presented. After the initial sort using the slides, recordings and the typed references, the subjects were asked to continue sorting the typed references on an 11-point scale. They were not offered an opportunity to review any of the slides or tapes. After completing each sort, the subjects were asked to write comments

on why they selected their most-liked and most-disliked items, and what about those items they most liked or disliked.

Reactions to Pretest and Sorting Process

The designing and administering of the multimedia Q samples gave rise to several concerns. The first was that the wide range of class-schema, particularly in the arts and popular culture Q sample, would make comparisons and sorting difficult. The second concern was that the two-step sorting process would make it difficult to remember and distinguish stimulus items in the sorting by typed references alone, especially among unfamiliar items. The third concern was that the polarity of the sorts would not represent strong likes, dislikes and central neutral points. The fourth concern focused on the reliability of the sorts.

Concerning the first question, a pretest of the arts and popular culture sample among three university faculty and two college students indicated mixing class-schema presented no comparison problems. After administering both Q samples to the first group of subjects, several suggested that all the video and music items could be shortened because the subjects had already ranked the items in preliminary piles.

Concerning the matter of remembering the items, none of the subjects expressed any difficulty with continuing the sorting process from the typed references. Many subjects remarked about unfamiliar items in the arts and popular culture sorts, with several of the factor types disliking the unfamiliar and others seeking out challenge. Also, those subjects who sorted the news media Q sample first and knew how the process worked had an easier time sorting the more complex and longer arts and popular culture sample.

The presence of positive and negative polarity and a central neutral point were of concern because most art, if not media, is intended to be aesthetically pleasing; the selection of art and popular culture items could therefore be measuring a forced-distribution of mostly-liked items. Each subject was asked to indicate the column or item that marked his or her neutral zone. In the *arts* Q sorts, 50 of 68 subjects (74%) marked +1, 0, or -1 as their neutral point (28 in 0 and 11 each in +1 and -1), and 4 each marked +2 and -2; a sprinkling of others marked more extreme scores, and 6 did not respond. In the *news media* Q sorts,

52 subjects (76%) placed their neutral point between 1 (29 in 0, 17 in -1); in addition, 7 marked -2 and 2 marked +2, with 4 others taking more extreme scores and 2 not responding.

Table 1
Correlations of Repeated Sorts

	Sort	
Subject	Media	Arts
1	.672	.719
2	.832	.783
3	.724	.679
4	.844	.728

Testing reliability of the Q samples, the correlation of both Q sorts was between .67 and .84 for four subjects who repeated the sorts either three or nine months after the initial sorts (see Table 1). The first three subjects, repeating nine months later, were asked to sort the items according to their current likes and dislikes, and not to try to duplicate their earlier sorts. They also were asked to comment on whether they thought the new sorts were the same as or different than their previous sorts. All three subjects said their news media sorts were generally the same, but only the first subject felt his arts and popular culture sort was generally the same. The second subject said having an art class since the first sort had changed his responses somewhat. The third subject thought her responses were substantially different because she had difficulty remember the items the first time and was able to concentrate more during the second sort. Subject four repeated the sorts three months after the first sorts and was given no special instructions.

Correlations between the subjects for the first and repeated sorts also show the sorts were reliable. In 22 of 24 cases in the news media sorts, the correlations remained either insignificant or significant. Only the correlation between subject 1 and 2 crossed from insignificance to significance. The correlations in the arts and popular culture sorts cross .40 in 6 of 24 cases. Four involved the third subject, who felt her scores were substantially different, and correlations between subjects 1 and 2.

Operant Factor Summaries

A five-factor solution was selected for interpretation of the news media data preferences, and a four-factor solution for the arts and popular culture preferences. The factors were interpreted through the visual and acoustic categorical classifications as well as operantly for the study, and reported briefly (Grosswiler, 1990b). The operant interpretations, working from the factor scores and written responses without the visual and acoustic categories, suggest that multimedia Q samples yield interpretable factors.

News Media Factors

Factor I, the Television Colorist, focuses on entertainment, excitement and variety in strongly preferring television and magazines. The Colorist rejects newspapers and radio as boring, plain and monotonous. Preferred items are "entertaining, variety, never the same" and "informative, exciting, interesting." Disliked items are "boring" and "unfamiliar."

Factor II, the Easy News Watcher, is interested in news as a source of enjoyment, liking television and rejecting most print media. The Watcher weighs the entertainment and news functions equally and merges the two. Disliked are "gossip," "feminist" media, "irritating" talk shows, "bathroom reading material" and "gross commercialism" in favor of more serious, substantive media.

Factor III, the Watchful News Reader, has a strong news interest in television and magazines, and grants a niche to newspapers. The Reader treats print and electronic media as equals. The Reader reads, watches television and watches for "quality," seeking depth with a minor note on entertainment. The Reader dislikes "sensationalism" in "poor quality media," and avoids boredom, unfamiliarity, and radio itself.

Factor IV, the Feature Seeker, likes television and magazines that emphasize feature and lifestyle content, but also likes news. The Seeker looks for color, personality, relaxation, celebrities, "eye-catching and ear-catching" stories, "up-to-date fashions," the everyday, current events and brevity. The Seeker tries to get it all from the media, and avoids items that are boring, difficult

to understand, or on radio. Newspapers are disliked that are boring, "complex" or "confusing to read."

Factor V, the Entertainee, likes entertaining items, but feels some guilt about this aversion to news. The Entertainee emphasizes the search for entertainment, then qualifies or defends it. The Entertainee is bored by radio, but expresses a liking for radio news. Newspapers are disliked that are difficult to understand or boring.

Arts and Popular Culture Factors

Factor I, the Synaesthesiac, prefers the familiarity of popular culture and rejects unknown fine art and high culture. The Synaesthesiac seeks escape, lightness and soothing relaxation, and avoids darkness and depression. The type, whose name calls to mind McLuhan's reference to the audience that is attuned to acoustic and multisensory electronic media (McLuhan, 1964, pp. 274-75), prefers items that "I've grown up with" or form an identity with, such as the "fan of old musicals." The Synaesthesiac is either neutral toward or strongly dislikes the unfamiliar, strongly disliking art and the medieval period itself.

Factor II, the Visual Pluralist, prefers music spiced with literature and television. The Pluralist rejects music, art and popular culture, relying on involvement and nuance in liking and disliking both fine art and popular culture. Beethoven and the Beatles, Magnum and Mozart blend in the preferences. Reasons include "catchy" music, "politically minded" cartoons, "captivating" literature, and "classics and great authors." Madonna and medieval music are rejected. Dislikes include a movie that is a "waste of time," and "dreary" and "grating" music.

Factor III, the Non-Reading Spectator, prefers music, popular culture and sports, and expresses an aversion to reading. The refrain of this type is: "I love baseball and football." The Beatles are "a legend," but generally the Spectator comments sparingly about likes and dislikes. The dislikes center on discomfort and difficulty with fine art, music and literature. One music item is "noise" and another "annoying, disturbing -- gave me an uncomfortable feeling." Also, one strongly disliked poem presented difficult wording.

Factor IV, the Visual Stylist, is a listener who responds to the style of music. Preferring all high-culture items, the Stylist finds

Strauss "soothing, antique-feeling type of music" and Vivaldi "dreamy, light, refreshing music." The Stylist also negatively comments about violence, horror, senseless sports and spectacle. "*The Shining* [a motion picture] promotes violence and pure goose-bump irritation." Football makes "no sense" and organized sports are "getting ridiculous in cost and hype."

Concluding Remarks

By describing the precedents, design, selection, production, administration and reactions to two multimedia Q samples, this paper hopes to have demonstrated the effectiveness of such samples for researching problems in "medium" theory and related research questions about a popular culture which increasingly eschews written or word-centered communication in favor of image-centered communication. In combination with traditional opinion statements, the use of multimedia stimulus items offers an additional tool to the Q researcher in probing this new subjectivity. As "medium" theory probes the relationships of orality, literacy and the secondary orality of American culture, using media and content in tandem may provide an additional empirical test in an area that has been developed theoretically in disciplines as diverse as anthropology, linguistics, literary criticism and communication studies. The use of multimedia Q samples also may be fruitful in exploring the dynamics of communication in many of the oral cultures of the Third World that have bypassed literacy. It may, as well, have usefulness in exploring semiotics by using signs themselves as stimulus items.

References

Beebe-Center, J.G. (1932) *The psychology of pleasantness and unpleasantness.* New York: D. Van Nostrand.

Brown, S.R. (1976) Observational standpoints in the study of political communication. Read at a meeting of the International Communication Association, Portland, OR.

Dommermuth, W. (1974) How does the medium affect the message? *Journalism Quarterly, 51,* 441-447.

Greenfield, P., D. Farrar & J. Beagles-Roosl (1986) Is the medium the message? An experimental comparison of the effects of radio and te-

levision on imagination. *Journal of Applied Developmental Psychology, 7,* 210-218.

Grosswiler, P. (1990a) *The shifting sensorium: A Q-methodology and critical theory exploration of Marshall McLuhan's visual and acoustic typologies in media, aesthetics and ideology.* Doctoral dissertation, University of Missouri-Columbia.

Grosswiler, P. (1990b) A Q-study of McLuhan's theory of visual and acoustic preferences in media, aesthetics and ideology. Read at a meeting of the International Society for the Scientific Study of Subjectivity, Columbia, MO.

Hauser, A. (1982) *The sociology of art* (K.J. Northcott, Trans.). Chicago: University of Chicago Press.

Koch-Weser, E. (1961) *A Q-study in role identification using a sample of advertising photographs.* Master's thesis, Michigan State University.

Lindley, W.R. (1986) The McLuhan papers: Preliminary notes. *Journalism Quarterly, 63,* 391-433.

Marchand, P. (1989) *The medium and the messenger.* New York: Ticknor and Fields.

McLuhan, H.M. (1962) *The Gutenberg galaxy: The making of typographic man.* Toronto: University of Toronto Press.

McLuhan, H.M. (1964) *Understanding media: The extensions of man.* New York: Mentor.

McLuhan, H.M. & H. Parker (1968) *Through the vanishing point: Space in poetry and painting.* New York: Harper & Row.

McLuhan, H.M. & W. Watson (1970) *From cliche to archetype.* New York: Viking.

Quander, L. (1981) *A comparison of three communication modes in relation to the attainment of objectives in the cognitive, affective and psychomotor domains.* Doctoral dissertation, Howard University.

Stauffer, J., R. Frost & W. Rybolt (1981) Recall and learning from broadcast news: Is print better? *Journal of Broadcasting, 25,* 253-262.

Stephenson, W. (1935) Correlating persons instead of tests. *Character and Personality , 4,* 17-24.

Stephenson, W. (1960) Principles of selection of news pictures. *Journalism Quarterly, 37,* 61-68.

Stephenson, W. (1963) The "infantile" vs. the "sublime" in advertisements. *Journalism Quarterly, 39,* 181-186.

Stephenson, W. (1972) Applications of communication theory: II. Interpretations of Keats' "Ode on a Grecian Urn." *Psychological Record, 22,* 177-192.

Stephenson, W. (1976) Q methodology. *Journal for the Center of Advanced Television Studies, 4*(1), 17-18.

Stephenson, W. (1978) Applications of communication theory: IV. Immediate experience of movies. *Operant Subjectivity, 1,* 96-116.

Stephenson, W. (1980) Q methodology and the subjectivity of literature. *Operant Subjectivity, 3,* 111-133.

Stephenson, W. (1987) William James, Niels Bohr, and complementarity: III -- Schrodinger's cat. *Psychological Record, 37,* 523-544.

Stephenson, W. (1988) *William Stephenson on his life and career.* Columbia: New Directions for News, School of Journalism, University of Missouri. (videocassette)

Stephenson, W. (n.d.) *Theory and methodology of esthetics.* Columbia: Joint Collection, Western Historical Manuscript Collection, University of Missouri, and State Historical Society of Missouri Manuscripts.

Wicks, R. & D. Drew (1991) Learning from news: Effects of media consistency and medium on recall and inference making. *Journalism Quarterly, 68,* 155-164.