

ANTHROPOLOGY AND THE MOTION PICTURE:
AN INTRODUCTION TO THE ART

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Editor's Note: The author is a professional still photographer and since 1959 has worked in many phases of motion picture production in Hollywood and later in San Francisco. He studied anthropological motion pictures at Goddard College, taught motion picture technique at the UCLA Experimental College, and is at present a guest lecturer on Anthropology and the Motion Picture in a course at U.C. Berkeley. He has produced two ethnographic films.

Although interest in motion pictures for anthropological study has swiftly grown, availability of reference material has not kept pace. The anthropologist with limited involvement in the general field of motion picture photography may have great difficulty in obtaining answers to important technical and procedural questions. The purpose then of this article is not to give a course in cine, but to give the prospective anthropologist-filmmaker a glimpse into the field, a pertinent bibliography and a concise list of valuable information sources concerning most phases of motion picture production.

If one is to use photography to its fullest advantage in anthropology, it is necessary to learn the art of communicating visually rather than orally. In order to get full value from motion pictures, it is necessary, in addition to being visual, to show movement, or change. This may sound like a simplistic statement, however if one were to turn off the narration, most anthropological motion pictures would become barely comprehensible.

The problem then, as I see it, is how to accustom people to

thinking visually and in forms of animation, when their entire educational history has been dominated by the written and spoken word. A partial solution is to give them an opportunity to work in non-verbal media. This might include still photography, 8mm silent films, 16mm silents or video tape.

Two common problems in instigating visual anthropology training programs are lack of funds for expensive equipment, and, more importantly, lack of personnel familiar with the highly involved and technical field of cinema. The availability of good reference sources may begin to fill these needs.

I have endeavored to include in the bibliography books that are almost never found in camera shops, book stores, or libraries--books that are used daily by professional filmmakers around the world. In addition I include names and addresses of suppliers of professional equipment and sources of technical information. It is hoped that with the use of the references suggested, students, professors, and other anthropologists will be able to gain a broad view of the field of motion pictures, and consider the possibilities of setting up programs suitable to their own needs.

The first anthropological "motion pictures," it may be said, were made in 1877 by Muybridge, who set up a series of clumsy still cameras, using fragile sensitized glass plates, and activated by tripwires, which accurately recorded complicated movements of humans and other animals. By 1890 the glass plates were being replaced by flexible film bases, one of the many inventions and refinements that were to make the still and motion picture camera a tool of great value to the field ethnographer.

In 1901 Sir Walter Baldwin Spencer went into central Australia with a Warwick Cinematograph. He had directions on how to load the film but had no idea on how fast to turn the crank. In 1912 Sir Walter journeyed to northern Australia to film aboriginal camp life. He claimed

his lack of success was due to bulky equipment that attracted too much attention, and longed for a small hand-held machine.

In 1919/1920 Flaherty filmed Nanook of the North. In 1925 Miriam C. Cooper completed Grass, and in 1927, using a bulky hand-cranked 35mm monster, Cooper captured the classic Chang. Cooper's feat was amazing even by modern standards. After months in the steaming jungle using very basic and primitive equipment, Cooper experienced no equipment malfunction and lost no footage to "jungle rot." (personal communication, Miriam C. Cooper).

As cameras became more sophisticated they also became more expensive. Closer tolerances made them highly susceptible to rough treatment and climatic changes. Due to bulk, complexity, and most of all cost, motion pictures were, for many years, restricted mainly to highly funded long range projects.

In 1963 the very fine ethno-motion picture Dead Birds was filmed using Arriflex cameras and Nagra recorders. The filmmakers experienced a freedom of movement and quality of picture and sound reproduction never dreamed of by pioneers such as Spencer, Flaherty, and Cooper. However, \$3500 or more per camera, and \$1300 and up per recorder still restricted the motion picture to the relatively well-funded project.

In the past few years a trend in the motion picture industry has been toward reliable, high quality, light-weight cameras and recorders, and high intensity portable lighting equipment. Surprisingly enough, these improvements have also engendered a more reasonable price range.

Now that the size and cost of motion picture equipment have been brought slightly below the Olympian level there seems to be a feeling among a few investigators that motion pictures are in some way a replacement for written ethnographies or still pictures. This thought requires closer examination.

Limits of Anthropological Motion Pictures

Cost of Equipment: A fine 35mm still camera and a small selection

of first class lenses can be purchased for as little as six or seven hundred dollars. It is not unusual to pay as much as a thousand dollars for a single lens used in 16mm motion picture photography.

Cost of Materials: For \$30 or \$40 an anthropologist doing his own lab work can assemble a vast number of 8 X 10 blow-ups. A ten minute motion picture could cost thousands of dollars.

Data Retrieval: With stills, data is almost immediately at hand, and high resolution makes relatively minute details readily available for close investigation. With motion pictures one must run through a great deal of footage to find a needed bit of information. Due to the small negative size, grain would become a major problem with 16mm blow-ups. This problem is aggravated by the slow shutter speeds used in motion photography, usually 1/40th to 1/60th of a second, which result in an almost assured blurring of individual frames when recording moving objects.

With high cost relative to stills, somewhat cumbersome data retrieval, and poor resolution, it becomes clear that the motion picture does not challenge still photography in its own domain. I submit therefore that motion pictures can be of greatest value when used to record events that move or that are changing in some relevant manner. Stills freeze time and are therefore valuable in studying things as they were. Motion pictures, if used properly, show the act of becoming. In addition it has been said that motion pictures can serve to approximate roughly certain aspects of the field experience. Dr. Laura Nader and Dr. Karl Heider, for example, present interactional footage to their students as an important part of training for participant observation. In the classroom students are presented with unfamiliar sets, such as Indian courtroom situations, or agricultural ritual from the highlands of New Guinea. They find themselves struggling to discern meaning from filmed interaction in much the same way as an investigator might struggle in the field.

Assuming a large number of needed studies concerning movement,

interaction, change and other situations that might benefit by the use of motion pictures, and also assuming that there exists a general lack of training in the art, as well as a restriction on finances, how does one go about instigating training programs and obtaining equipment?

What about the undergraduate funding his own limited study, the graduate doing summer field work on a budget of five hundred to a thousand dollars, or the department interested in setting up a trial anthropological film program with limited funds? The success of such undertakings requires a broad knowledge of the field, a very careful selection of learning aids, equipment, film stock and format (16mm, single/super 8 and 8mm). A brief outline of such information is given below.

Format

16mm.: Equipment in this format comes in a wide variety of prices which do not necessarily reflect quality, but generally reflect versatility and/or specialized functions.

Arriflex: From about \$3500 (up) depending on model, types of lenses and accessories. This is a fully professional camera used by the film industry and many independent filmmakers. It takes standard 100' loads of film (good for a little less than three minutes of continuous shooting), and it is not too difficult to handle with 400' magazines. Although light enough to carry for short periods of time, this camera is designed mainly to be used on a tripod. I find the Arriflex is a pleasure to work with in all but the most hectic of conditions, image quality is delightful and rugged construction practically assures reliability under trying field conditions. The camera can be used for a wide variety of specialized scientific purposes.

Beaulieu: \$1500 (up). An extremely light weight compact machine, ideal for hand holding and using in situations where it is necessary to be right in the action. Can take up to 200' loads and can be adapted to a wide range of scientific uses, e.g.,

medical photography, time lapse, macro and micro photography, etc.

Canon Scoopic: \$1250 (up). This small, compact camera is designed for newsreel and documentary filming, has fully automatic exposure control, and very clear and large reflex view finder, and can be operated one-handed. Although extremely basic, it does the job for which it was designed and is perfect for dangerous situations where one must move fast or where one needs a free hand, as in climbing. Takes 100' loads only.

Bolex: \$700 (up). The standard camera for low budget filmmakers and advanced students, and a popular second camera (or back-up) among documentary filmmakers. In its basic form the Bolex is capable of giving perfectly adequate images at a much lower price than any of the other cameras mentioned. This is done at some sacrifice; excess weight, lack of design finesse, and less than perfect balance. A full range of equipment, for most every scientific and documentary application is available from Bolex, and 400' magazines are available for some models.

Super/Single 8mm: The price range among 8mm's is much wider than among 16mm's. They run from approximately \$50 to close to \$1000. Virtually all the cameras from \$100 up will give satisfactory results. The following is a sampling of what is available in the various price ranges.

\$500 to \$850: Beaulieu Super 8 is similar to the 16mm model, has fully automatic exposure control and a macro-lens that lets you focus down to one millimeter from the lens, which makes it useful for capturing small objects or important details. Canon, Bauer and a few others also make professional type cameras in this price range.

\$100 to \$300: All the cameras in this range have zoom lenses and automatic exposure control, and some have features permitting

special effects such as single frame for stop-motion or delayed-time-exposures. To my knowledge the only cameras (super and single 8mm) that will allow for the back-winding of film are the Fujica and the Tri-Filmatic with the standard 8mm back. A few that might be considered are:

Prinz	\$100
Bauer	130
Capro	165
Nizo	195
Ansco	225
Nikon	300
Bolex	300 (macro-lens)
Elmo	300 (Honeywell Elmo Tri-Filmatic, uses 8mm, super 8mm or single 8)
Fujica	330 (single 8mm with back-wind)

Standard 8mm: Except for a few holdouts, such as Honeywell, standard 8mm cameras haven't been manufactured for several years. Consequently it is often possible to find an exceptional "buy" in used equipment, and this is probably the way to go for those with the tightest budget. It is frequently possible to pick up cameras for \$50 or \$75 that originally sold for \$250 to \$300--cleaning, oiling and adjusting runs another \$15. Film for these "obsolete" cameras is actually available in a much wider variety of emulsions than is now available for super 8, because standard 8mm film is merely resprocketed 16mm film.

The low cost for setting up in 8/super 8 production might be as follows:

Camera (new or used)	\$75
Projector (new or used)	55
Rewinds, viewer/editor and splicer	25
Color film (discount) 300'	
Super 8mm	18
Standard 8mm	\$.11.75
Totals.	\$173 / \$166.75

Choice of Format: If the plan is to produce professional motion pictures for possible distribution, and money is available, 16mm is the standard format. Stock is approximately 4 times larger than 8mm and is therefore much easier to handle. Professional equipment for editing and viewing 16mm sound film is available in most large cities, and laboratories are generally well equipped to develop, duplicate, and create optical effects and titles, as well as marry your visuals to optical sound tracks using your original tape recordings.

Cost of producing a 16mm color sound film is usually figured at \$1000 per minute of finished film (personal communication, Clyde B. Smith, Extension Media Center, U.C. Berkeley). However, I have found that it is possible to produce a professional 8 minute color film in 16mm sound for as little as \$1200 (less than 1/6 the standard cost).

In considering either standard 8mm or super/single 8mm, it is my opinion that the actual, rather than the technical quality of these two formats is so close that the choice of one over the other is strictly a matter of convenience, personal taste, and available finances. If one is short on time and has a fair amount of capital, super/single 8 equipment is available in almost any neighborhood camera shop. A complete outfit (camera, editor/viewer/splicer, projector, tape recorder, and film), admittedly of very basic sophistication, can be purchased for as little as \$200. However, for one who is limited in money, but is able to spend time looking for fine used equipment, standard 8mm is still the answer.

In the editing phase, due to their shoestring dimensions, one quarter the size of 16mm, the 8mm formats can be delicate and trying to work with. However, if care is taken the quality of results can be quite surprising. When distribution is desired, 8mm films can be optically printed on 16mm stock, which is much cheaper than shooting and cutting directly on 16mm. If great care is taken in all phases of production, shooting, editing, lab work, etc., the results can be superior to run-of-the-mill films produced directly on 16mm. (The U.C.L.A. Cine department

has been using the 8 to 16 blow-up process for years.)

Synchronized and wild (non-sync) sound tracks are now quite easily obtained for 16mm films using portable tape recorders. The standard in the industry is the Nagra (\$1325-up). Two other fine machines are the Tanberg and the Uher, both about half the price of the Nagra.

Wild sound for the 8mm formats can be obtained with a wide variety of light weight portable recorders, starting with a \$40 Craig and culminating in the Sony (anthro-standard according to Dr. Geoghegan, U.C. Berkeley) cassette at \$100 (up). All the more expensive recorders used with 16mm film can be used for 8mm wild tracks, and several manufacturers are releasing super 8mm/cassette combinations for shooting synchronized sound.

Near professional 8mm color/sound films of 12 to 15 minutes have been produced for \$200. It is possible, with great care, to produce a high quality 10 minute 8mm color film for as little as \$40 or \$50. In 8mm there is little or no saving in using black and white film.

Brands of Film: Kodak 8mm (and super) is of unquestionably high quality. It is also highly priced. The following companies have indicated a willingness to give discounts to students and educational institutions: Agfa-Gevaert Inc., Dupont, and Dynchrome (3M). Freestyle Films in Los Angeles gives discounts on 8, 16 and 35mm, and sells through the mail.

Conclusion

Anthropological motion pictures have a history bridging nearly 100 years of experimentation and refinement. Though limited in the past to a relatively narrow range of applications, new developments in the art have given the motion picture camera and related equipment a high degree of flexibility.

The motion picture is not a replacement for still photography or the written ethnography, but has unique contributions to make in the field of anthropology. Though the art can be difficult, it need not be so.

Though film expeditions can cost tens of thousands of dollars, valuable motion pictures can be made for less than a hundred.

If those interested in anthropology and the motion picture make serious use of the suggested references and other sources, they can gain a broad enough general knowledge of the field of cinematography to begin designing programs and projects suited to their needs and resources.

The availability of reference material, low cost 8mm, synchronized sound in super 8mm, sophisticated 16mm equipment, portable video tape machines, and specialized motion picture cameras and accessories for unusual applications, assures the interested investigator that a tool exists to fit his need and budget.

SUGGESTED READING

(*) particular interest to anthropologists

(**) suggested for purchase

(**) American Cinematographer, International Journal of Motion Picture Photography and Production Techniques. ASC Agency Inc., 1782 North Orange Drive, Hollywood, California 90028.

The title tells the story. The magazine is extremely useful for reference as well as interesting to read. New equipment and techniques are usually first presented to the film industry through the pages of American Cinematographer. By subscription only.

Arnheim, Rudolf
1957 Film as Art. Berkeley: University of California Press.

(*) Bateson, Gregory and Margaret Mead
1942 Balinese Character: A Photographic Analysis. Special Publications, Vol. II. New York: New York Academy of Sciences.

Battison, John H.
1950 Movies for TV. New York: The Macmillan Company.

- (*) Birdwhistell, Ray L.
 1963 The Use of Audio Visual Aids. In D.G. Mandelbaum and A.W. Lasker, eds., Resources for the Teaching of Anthropology. Berkeley: University of California Press. Pp. 49-63.
- (**) Burdner, John
 1968 The Techniques of Editing 16mm Films. New York: Hastings House Communication Art Books.
 Some of the entries in this clearly written book are The Production Background, Sound in Production, Visuals in Production, Editing Equipment and Facilities, Producing a Soundtrack, Master to Showprint, Technical Terms, plus another 120 or so areas. Highly recommended for any film library and for anthro-filmmakers interested in 16mm sound production.
- (**) Clark, Charles G. ASC
 1968 Professional Cinematography. Hollywood: The American Cinematographer, P.O. 2230.
 Recommended for film libraries and suggested reading for film students.
- (*) Collier, John Jr.
 1967 Visual Anthropology: Photography as a Research Method. New York: Holt, Rinehart and Winston, Inc.
 Mostly concerned with still photography, but there is a little on motion pictures.
- (*) Dyhrenfurth, Norman G.
 1952 Filmmaking for Scientific Fieldwork. American Anthropologist 54:147-152.
 Not too technical, but worth looking through. "One of the most important aims of a good filmmaker is to tell his story largely in visual terms, rather than in a lecture with a few pictures thrown in haphazardly to accompany the words."
- Eisenstein, Sergei
 1942 The Film Sense. New York: Harcourt, Brace and Company.
 1949 The Film Form. New York: Harcourt, Brace and Company.
 One of the world's few great filmmakers and a fine writer. Much of his work was documentary in flavor, and his

philosophies and techniques of filmmaking could be of value to documentary/anthropological filmmakers of this day.

- (*) Gardner, Robert
1957 Anthropology and Film. Daedalus 86:344-352.
- Jacobs, Lewis
1939 The Rise of the American Film. New York: Harcourt, Brace and Company.
- (*) Michaelis, Anthony B.
1955 Research Films in Biology, Anthropology, Psychology and Medicine. New York: Academic Press.
- (**) Miller, Arthur C. ASC and Walter Streng, ASC (eds.)
1969 American Cinematographer Manual, Third Edition.
P.O. Box 2230, Hollywood, California 90028.
A densely packed reference book considered the bible of the serious filmmaker.
- (**) O'Leary, Liam
1965 The Silent Cinema. New York: E.P. Dutton and Company.
A book of stills (with commentary) from the Silent Movies. Paperback.
- (*) Rowe, John H.
1952 Technical Aids in Anthropology. In A.L.Kroeber, ed., Anthropology Today. Chicago: University of Chicago Press. Pp. 895-940.
- (*) Seligman, Brenda (ed.)
1951 Notes and Queries on Anthropology. London: Routledge and Kegan Paul, Ltd. Pp. 359-361.

Valuable (but free) Sources of Information
For the Filmmaker

Agfa-Gevaert, Inc.

Bill Herndon, Cine Department, 1485 Bayshore Blvd., San Francisco, California 94124.

Agfa has long produced color film for still cameras. They have just introduced a color Cine Camera Stock for sale on the

American market. For technical information on the various camera stocks, as well as for suggested uses, write Bill Herndon.

Alan Gordon Enterprises, Inc.

1430 N. Cahuenga Blvd., Hollywood, California 90028.

Alan Gordon sells and rents both new and used equipment to individuals and production companies around the world. He has a very interesting selection of equipment for filming from unsteady platforms such as helicopters. Free sales and rental catalogs.

Angenieux Corporation of America

440 Merrick Rd., Oceanside, New York 11572.

Maker of fine camera lenses including the famous 12 to 120 Zoom. Write for information and technical specifications.

Arriflex Corporation of America

Woodside, New York 11377.

Professional 16mm and 35mm motion picture cameras. "...Film-makers have used their ingenuity and Arriflex versatility to solve problems which you may face...." They offer a free brochure entitled Arriflex at Work.

Bach Auricon, Inc.

6902 Romaine Street, Hollywood, California 90038.

Manufacturers of 16mm sound-on-film cameras. Free 74 page catalog.

Behrend's Incorporated

161 East Grand Avenue, Chicago, Illinois 60611.

Rent and sell a wide variety of professional equipment including still and motion picture cameras, lighting equipment, recording equipment, videotape recording equipment. Their catalog is illustrated and the items are well explained as to function.

Birns and Sawyer, Inc. (USA, Hong Kong, Sydney, Taipei)

1014 North Vine Street, Hollywood, California 90038.

In addition to the rental and sales of standard equipment, Jack Birns (Life Photographer during the Big War) manufactures exotic special purpose equipment. They have quite a large Oceanographics Division (P.O. Box 458, Sun City, California). Both a rental and a sales catalog. . . write to the Vine Street address.

Canon U.S.A., Inc.

64-10 Queens Blvd., Woodside, New York 11377.

They will send information on their still cameras and lenses as well as their Scoopic-16 Newsreel Camera.

Cinema Beaulieu, General Office

14225 Ventura Blvd., Sherman Oaks, California 91403.

They will send information on their 8mm and 16mm cameras, lenses and accessories for specialized cinematographic application.

Colburn Laboratory, Inc.

164 N. Wacker Drive, Chicago, Illinois 60606.

Free booklet Colburn Comments on Editing.

Dynachrome (3M)

11915 Olympic Blvd., West Los Angeles, California.

They manufacture still color film as well as 8mm and Super 8mm. The company has indicated that they will give substantial discounts to students and educational institutions.

Eclair

7262 Melrose Ave., Los Angeles, California 90046.

Eclair makes very fine, very expensive cameras that are said to hold up under the most brutal field conditions. Write for information.

Eastman Kodak Company

Motion Picture and Education Markets Division, 343 State St., Rochester, New York 14650.

Kodak sends out "tons" of technical information on their cine camera and lab films. Ask your question, and you'll get an answer from them.

Paillard, Inc. (Bolex)

1900 Lower Road, Linden, New Jersey 07036.

In addition to a free 32-page 16mm Product Buying Guide, Bolex also has a series of booklets covering various areas for motion picture photography, i.e., Documentary, Medical, In the Classroom, Sports, etc.

Red Lake Laboratories

2971 Corvin Drive, Santa Clara, California 95051.

Manufactures high-speed cameras. They have one that runs at 44,000 frames per second, giving a projected speed reduction of 2,000-to-1.

SOS Photo-Cine-Optics, Inc.

7051 Santa Monica Blvd., Hollywood, California 90038.

Catalog of Editing, Film Handling Equipment and Accessories.

Victor Duncan, Inc.

155 E. Ohio Street, Chicago, Illinois 60611.

Sales and rental of optical, electrical equipment, etc.

Sources of Used Cine Equipment

Most of the rental houses sell used equipment but here are a few that may be able to supply you with used (standard) 8mm cameras, projectors and editors.

San Francisco

Adolph Gasser, Inc., 5733 Geary Blvd (Geary at 22nd Avenue).

A very fine collection of 16mm cameras and recording equipment. Happy to talk with filmmakers and explain any of the equipment in stock. Expert lens and camera repairs and overhauls. If they don't have what you want they'll tell you where you can get it. Phone: 751-0145.

Los Angeles

Freestyle Sales Co., 1427 No. Western Ave. (at Sunset Blvd.), Hollywood, California 90027 or for Mail Service, P.O. Box 85128, Hollywood, California 90027.

A good low cost source of still and motion picture films, paper, bulk-loaders, changing bags, odd Aerial Cameras, etc.

Harry's Camera, 12142 Ventura Blvd., Studio City, California.

They have a wide stock of new and used standard and super 8mm cameras, and a fair range of 16mm equipment. They have sound

equipment and "everything for still photography." They give discounts to students. If you can't find it there, they are very good about suggesting other stores. Phone: 877-1954.

Chicago

Altman's, 129 N. Wabash, Chicago, Illinois, 60602.

Prices lower than most, and a good stock of new and used 8/16mm as well as still cameras. Tell them what you want, and they'll send you a list of what they have and prices. Phone: (312)263-0749.

New York

Olden, 1265 Broadway (at 32nd Street), New York, New York 10001.

Their catalog shows a wide selection of new and used motion picture and still cameras, lenses, projectors, etc., and their listed prices seem low. They deal at the store and by mail, and claim to be interested in trades. "All Shipments 10 day Trial-Money Back Guarantee." I have never dealt with them personally. Phone: (212) 684-4280.