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TO WHAT EXTENT DOES
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Paul Messaris

The film theorist Béla Balázs tells a story of an English colonial administrator in the early part of this century who lived for many years in places cut off from the Western technological developments of the period. One of these developments was film. Although he had read about it in newspapers and magazines received from home, the Englishman had never seen it. When he finally returned home, he eagerly went to the movies for the first time; but, although some children sitting near him clearly had no trouble following the picture, he himself found it utterly impossible to understand (Balázs, 1970: 34). This story and many others like it (e.g., Wilson, 1961; Worth and Adair, 1972: 130-131) have been used to support the notion that the interpretation of film requires a special set of skills, which viewers have to learn. The purpose of this chapter is to examine the degree of validity of this notion. It will be argued that the extent to which film content can be interpreted by analogy with its real-life counterpart is probably greater than frequently assumed, and that the popular notion that viewers must learn a special "language of film" may be, in certain respects, an overstatement.

Before we begin this examination, it must be emphasized that by "interpretation" what is meant here is only the identification of what it is that a

film represents. Other kinds of interpretation, such as the extraction of a moral, the abstraction of a metaphor, or the aesthetic assessment of a nonrepresentational film, are not our concern, and they would certainly not come under the kind of argument that will be developed in the following pages.

The case of still pictures

It will be convenient, for reasons that will become apparent later on, to begin this discussion with a look at still pictures (photographs, cartoons, etc.) before turning to film itself. As with movies, so also with photographs and some kinds of drawings. There are many stories about people who, on encountering them for the first time, reportedly had a lot of trouble understanding them (Herskovits, 1948: 381; 1959: 56). Stories of this kind are often cited as evidence supporting the argument that even photographs cannot be interpreted correctly without a certain amount of prior experience and learning. In theoretical terms the argument usually goes something like this: Clearly, photographs--and even the most "faithful" handmade pictures on a flat surface--are not exact copies of the things they represent. Nor can they be exact copies of the appearance of these things, except in a very limited sense: for our normal view of the world (whether we are looking at it with two eyes or with one) involves countless shifts of perspective accompanying even our slightest movement, whereas a still picture can give us only a single view of whatever it depicts. Therefore, the argument goes, even the most realistic picture presents our eyes with slightly different information from that which the "real thing" would have given us, and we must therefore learn to make the leap from the picture's information to the correct identification of the things that it represents.

Put in this way the argument seems to make perfect sense. However, it has a flaw. It fails to take into account a critical fact about the way in which we interpret the visual world, namely, that we rarely process visual information very thoroughly, so that incomplete or "imperfect" information may not constitute an obstacle to interpretation so long as a reasonable estimate of what it represents can be made from it. This point has long been a cornerstone of the psychology of perception (see Neisser, 1967). The more general point is this: our normal perception of the objects and events in our environment can be said to be a series of guesses, drawing on available information only so much as is needed to form

a guess that reasonably corresponds to our expectations of what is there (Gregory, 1970). So, for example, mistyped words are read "correctly" as long as we do not look carefully enough to spot the error. In the case of pictures, then, it can be argued that our ability to make the necessary leap from the incomplete/incorrect information that they give us to an accurate "reading" of their referent is part of our normal perceptual apparatus and need not involve any special set of skills (Hochberg, 1972; see also Gibson, 1971; Kennedy, 1974: 42-64). Nor need it involve any special kind of learning.

Several studies have investigated various aspects of this issue, and there is a variety of evidence in favor of the argument we have just gone over. Among these studies the one that deals with the issue in the most direct way was performed by Julian Hochberg and Virginia Brooks (1962) with their son as subject. This child was brought up from infancy in almost total isolation from any kind of pictorial material and with no instruction whatsoever, direct or indirect, on the meaning of a picture. Halfway through his second year the child began spontaneously to name the objects of the rare pictures that his parents were unable to prevent him from seeing. At that point Hochberg and Brooks conducted a careful series of tests in which the child was shown a variety of pictures (photographs and cartoons) to see if he could correctly identify what they represented (faces of familiar and unfamiliar people, various toy objects, etc.). Almost without exception the child gave accurate identifications without difficulty.

This kind of study is obviously difficult to do with human children, but relevant information has been obtained in several experiments in which animals were found to be able to recognize pictures (not just photographs but also line drawings) without previous training (Hayes and Hayes, 1953; Herrnstein and Loveland, 1964; Zimmerman and Hochberg, 1963). In the case of animals, of course, the criterion of recognition is not the verbal labeling of a picture (except for some of the apes who have been trained to "speak") but, rather, the correct performance, in the presence of a picture, of discrimination tasks previously learned in reference to real-life objects.

From what has been said so far it seems reasonable to conclude, for both theoretical and practical reasons, that the ability to interpret ordinary still pictures is not a special

skill that viewers have to learn to perform. With this idea in mind we can now turn to moving pictures and resume our examination of whether their interpretation requires specific learning.

From stills to single-take (unedited) motion pictures

On the basis of what has been said about still pictures, especially photographs, it seems reasonable to make the following extrapolation about movies: if viewers do not have to learn to interpret a still picture, they should not have to learn to interpret a moving picture either, so long as the picture is unedited and the action in it flows without interruption, as it would in reality. The reasoning here is that a moving picture of this kind (uninterrupted by editing of any sort) is, if anything, closer to the appearance of the real world than a still picture can ever be. And since we have argued that our habits of processing real-life visual information are readily transferable to stills, the same should hold for unedited motion pictures (i. e., single unedited shots).

There does not seem to be any systematic evidence on this issue, although it is worth noting that one of the first images that the child studied by Hochberg and Brooks labeled spontaneously was a television picture. Nevertheless, relevant information is contained in surviving accounts of audience reactions to the first movies ever made, which were of the kind we are considering at this point, namely, single shots. (The duration of these early films was typically only a few minutes, and the subjects were such things as dancing girls, street scenes, comic skits, and nature scenes.) Although there are several firsthand reports, from newspapers or private correspondence, of the reactions of "first-night" audiences (including the writers themselves) to these early movies (see Ramsay, 1926: 129-130, 196-197, 204-205, 227-228, 240-241; Kauffmann and Henstell, 1972: 3-4), there is not a single instance, in these accounts, of reported incomprehension or even of difficulty of comprehension. On the contrary, the recurrent theme in most of these accounts is admiration at how true-to-life the images appeared to their audience (even though, with a few exceptions, these images lacked color and sound). For example, an account of the first public film exhibition in Richmond, Indiana (the date: October 29, 1895), in the Richmond Telegram explained that the new device gave "a complete picture, with the changing expression of countenance and every movement of the figure just as in life" (Ram-

saye, 1926: 196); while a New York Journal story about Thomas Edison's first public demonstration of a film projector (on April 3, 1896) says that the screen figures (of dancing girls, etc.) "all of life size, seemed to exist as realities on the big white screen" (Ramsaye, 1926: 228). Even the occasional reports of viewers panicking at the sight of a train headed toward them as it entered a station (Ceram, n.d.: 150) or ducking to avoid the spray from the Dover surf (Ramsaye, 1926: 232) are not, as is sometimes claimed, proof of mis-interpretation (in the sense in which we are using the term here); for, while such reports do indicate an incomplete adjustment to the degree of reality of the image (a reaction one can still see, for example, in audiences at 3-D movies), they also clearly indicate that these viewers' interpretation of the image (a train coming at them; a seascape) was correct. The same can be said of the classic apocryphal story about African tribesmen throwing spears at filmed images of elephants.

Naturally, anecdotal information of the kind we have just examined is no substitute for systematic evidence. It doesn't tell us, for example, what difference a moving camera makes to audience comprehension (since the early film camera was almost always fixed), nor does it indicate the role of prior "training" with photographs and various optical devices (see Ceram, n.d.) in preparing early audiences for the acceptance of movies. Consequently, we have to say that we do not yet have completely satisfactory evidence on the question we are examining at this point, namely, whether single, unedited shots require special interpretational skills that a viewer would not have developed anyway in learning to deal with the real visible world. Nevertheless, as we have seen, it is possible to construct a good argument on this point by analogy with what we know about still pictures; and the available data do support this argument. Therefore the tentative conclusion that viewers do not have to learn to interpret the content of most single shots seems to be within the bounds of prudence.

How does editing affect comprehension?

Very few present-day films--or even scenes within films--are constructed entirely of one shot. Let us move on, then, to what seems to be the next logical step in this discussion. What happens when we add editing to the picture? How much does the introduction of editing change a film's visuals from the kind of visual information that is available to us in our

"real" environment? The answer to this question depends on the kind of editing one is talking about. Some kinds of editing result in a sequence of images that is similar to "ordinary" visual experience in the real world. For example, if the camera cuts back and forth between two people talking without changing its position (in other words, simply by changing angle with each shot), it is doing what a human spectator might well do in such a situation. (As you will see if you try this yourself with two objects in different parts of a room; you do not normally notice any blur as your eyes switch back and forth, and the film will not contain one if cuts are used.) On the other hand, there are many kinds of editing that put images together in a way vastly different from any real-life experience, sudden changes in location being a good example. If we continue the line of argument that we have used so far, it seems reasonable to assume that the extent to which the interpretation of any particular kind of editing requires a special set of skills (different from the visual perceptual skills one uses in the real world) must depend on how much that kind of editing departs from everyday visual experience. We should expect, in other words, that some kinds of editing (such as the manner of filming a conversation described above) should require little or no adaptation on the part of the audience, whereas others, such as abrupt changes in location, should require much more. The notion we will be dealing with here, then, is that the various types of editing can be arranged along a continuum, according to the degree to which film-specific rules are required for the interpretation of any particular type.

Evidence concerning this notion comes from several studies of the difficulty with which children of various ages interpret various kinds of editing. Two studies of children's comprehension of editing styles will be discussed here. The first of these was conducted by Bianka Zazzo, a French film scholar whose subjects were the pupils of the six grades of a French secondary school (Zazzo, 1952). Zazzo's question was precisely the general one we are asking here: do viewers (in this case, young children) have to learn to interpret a film adequately? Zazzo's method was to show the children a five-minute segment of a standard commercial movie and then to test their comprehension in various ways. The movie contained a confrontation between two rival gangs of youths, a brief scuffle between the leaders, a scene of one gang pursuing the other, and, finally, the restoration of order by the police. An important component of this movie, from the point of view of our immediate concern with editing, was the

presence of the following editing devices: first, a pair of shots in which the camera cuts from the point of view of one of the gang leaders to the point of view of the other; second, a scene in which one of the gangs is barricaded in a hut and the camera cuts back and forth between interior and exterior; third, a time lapse at the end of the movie, between the arrival of the police and the conclusion.

The reason these sequences are important for our purposes is that, although they all represent standard examples of Hollywood editing, by the criteria we have used here they depart considerably from the possibilities of real-life visual experience. Although a Hollywood editor might argue that it is "natural" to want to see each of the gang leaders as the other sees him at the moment of confrontation (cf. Pudovkin, 1970: 54-121; Bazin, 1967: 23-40), nevertheless this alternation of subjective views is a complete physical impossibility; likewise, while one might wish that one were able to jump instantaneously back and forth between interior and exterior views of the cabin so as to witness all aspects of that confrontation, there is not really anything in real life that could approximate that experience; and the same goes for the time lapse at the end of the film. Except for these three segments the rest of the film was edited in a more "realistic" style--that is, without any other time lapses and with much less dramatic shifts in point of view. In testing the children's comprehension Zazzo was careful to distinguish between the three "difficult" segments and the remainder of the film. For example, she compared their performance on picture-sequencing tests corresponding to portions of the film with and without these editing devices. What she found was that there was a dramatic difference between the two. Almost none of the children had any trouble with the more "realistic" segments of the film; almost half failed to perform correctly on the tests involving the "unrealistic" segments, the proportion of failures ranging from almost all of the first-grade children to almost none of the sixth-graders. In other words, the departures from "realism" in the three critical sequences of this film appear to have made those sequences quite difficult for all but the most experienced viewers among these children to follow (assuming, of course, that it was indeed greater film experience, rather than other developmental differences, that accounted for the age-related trends in the results).

Similar results were found in a second study, by Mialaret and Méliès (1954), which we shall discuss rather more

briefly. This study compared children's responses to three versions of a film: 1/ a version filmed in long shot, with very little editing; 2/ a version with greater variety in shot types (i. e., including medium shots and close-ups) and more frequent changes in point of view within scenes; and 3/ a version intended as the most "unrealistic" of the three, including much use of "subjective camera," cross-cutting between locations, and temporal discontinuity. Interestingly enough, the second version did not appear to be more difficult to follow than the first, and in fact there was some indication that the closer views aided comprehension. On the other hand, as Zazzo's study (and the argument being developed here) would have led one to expect, the more radical departure from real-life visual possibilities represented by the third version did appear to cause severe interpretational difficulties. As with Zazzo's study, too, there was an age-related trend in these difficulties.

Both of these studies support the overall argument that there is a continuum in the degree to which editing devices present an obstacle to interpretation and that the place of a particular device on this continuum depends on the degree to which it combines images in a way similar to the possibilities of real-life visual experience. Furthermore, assuming that the age-related trends in these findings are due to differences in amount of film experience (rather than other aspects of growing up), these findings round off the evidence in support of the more general notion that we have been examining here: that the amount of film experience and learning required for the interpretation of any particular editing device depends upon its place on this continuum.

well said!

Steps toward a continuum of editing types

The next question to ask is whether it is possible to be more precise about what kinds of editing belong in what position on this continuum. Unfortunately there is little systematic empirical evidence to go by on this issue, aside from the studies just cited. In the absence of sufficient evidence the best we can do is to form a tentative and necessarily crude set of guesses.

A useful distinction to begin with is the one between two overall categories of editing: on the one hand, editing within a scene, that is, editing that does not involve a change in time or location; and, on the other hand, editing that does

involve such changes. We shall assume that the former general category is the more basic of the two, since it involves no break in the natural continuity of place, time, and character, although it may of course involve "unnatural" sequences of images within its single location and time period.

Within this simpler of the two categories it may be possible to make some finer distinctions. We have already discussed what is taken here to be the very simplest editing device in common use, namely, cutting to various parts of a scene from a single camera position with no change in focal length. This is also the only editing device of which it could be argued that it actually does not depart at all from the physical possibilities open to a real-life spectator. The most common devices for editing within a scene, however, both involve slight departures from this situation. These two editing devices are, first, the shifting back and forth of camera position by which conversations are usually filmed if they are not done in a single two-shot (both speakers in one shot); and, second, changes in the magnification of people and objects in a scene (e.g., going in from a long establishing shot to medium shots at the beginning of a scene or moving farther in for close-ups of speakers later on).

The first of these two devices appears to be the simpler. All available evidence indicates that, when the change in camera position involved is not so extreme as to cause an apparent reversal of the relative position of the characters in a scene, this device does not appear to offer any obstacles to interpretation, despite its "slight" violation of "naturalistic" sequences. So, for example, even studies of very young children (below school age) have not reported any degree of incomprehension associated with this device (Mialaret and Méliès, 1954; Noble, 1975; Winick and Winick, 1979). Furthermore, although the introduction of this kind of editing into the films of the first decade of this century, in place of the single-take, theaterlike scenes of the very first movies, was apparently undertaken with some hesitation by the film pioneers of the day, there is no record of audience difficulty with it or protests against it. Edwin S. Porter's The Life of an American Fireman (1903), whose three-shot climactic scene makes it the earliest recorded departure from the theaterlike style of its day, was an unambiguous success with audiences (Jacobs, 1968: 37-41); while D. W. Griffith, who liked to boast about resistance to his many innovations in film structure, appears not to have encountered any ob-

stacles in his initial moves to break scenes down into shots (beginning with For Love of Gold in 1908; see Jacobs, 1968: 101-201).

What has been claimed to be a source of difficulty, in some of its uses, is the second of these devices (changes in magnification). In particular, transitions to a tight close-up have been said to disorient inexperienced viewers. This kind of disorientation has been reported in accounts of the introduction of close-ups into early movies. There are many stories of audience members protesting against them (e.g., Griffith, 1972: 86) or even being frightened by them (e.g., Balázs, 1970: 34-35). Some of these stories are clearly mistaken in their premises. For example, it is sometimes claimed that a famous close-up of an outlaw in Porter's The Great Train Robbery (1903) terrified audiences because they interpreted it as a disembodied bust. Yet equally tight close-ups (from the chest up) had been in use in film since its very first days (e.g., Fred Ott's Sneeze, made by W. K. L. Dixon in 1893, and The Kiss, an Edison film from 1896), and, as Griffith argued, all audience members must also have seen the same kind of close-up in painting and photography (Griffith, 1972: 86). Furthermore, there is a much more plausible reason for any apprehension the audience may have felt at the close-up in The Great Train Robbery: in this shot the gangster is seen firing a gun directly at the audience. Surely this was a novelty. Nevertheless, the variety of anecdotal evidence concerning audience resistance to some early close-ups makes it more than likely that at least in some cases this did happen. What must be stressed, however, is that the cause of difficulty could not have been the close-up by itself: there is no record of objection to the single-take close-up films of the 1890s (on grounds of intelligibility, that is; on the other hand, The Kiss was widely attacked for its alleged immorality; see Ramsay, 1926: 257-261). Rather, it seems that the transition to a close-up--that is, the loss of previously available contextual information--is what may have disturbed some of these early audiences. The same conclusion is indicated by some more recent evidence: In a study of young children's preferences for various editing styles Noble found that, while older children tended to like the detail provided by close-ups, younger children tended to prefer longer views that allowed them to maintain a sense of the location of things at all times (Noble, 1975: 189-190).

Aside from these occasional difficulties reported with regard to transitions to close-up, the two editing devices we have been talking about here appear not to depart sufficiently from realistic sequence to cause any interpretational problems, even among the most inexperienced viewers. Among the common devices for editing within a scene it would appear that it is only the more extreme departures from realism, such as the alternation of subjective viewpoints studied by Zazzo, that are serious obstacles to interpretation. Since there is no further systematic evidence on these issues, beyond that already examined above, a more detailed discussion of within-scene editing will not be attempted here.

Instead, we will now consider the other overall category of editing devices--transitional editing--in which there is some discontinuity in time, place, or both. It was argued earlier that this kind of editing is more complex than the kind of within-scene editing we have just discussed, since transitional editing violates realistic sequence more than within-scene editing does. In other words, transitional editing presents the spectator with time and space juxtapositions that could almost never be encountered in reality, and, for an adequate interpretation of anything but the most episodic film, the spectator must be able to weave these disparate times and places into a single, uniform "network of causality," within which the film's plot, character development, and so on acquire meaning. This point bears some emphasis. The adequate interpretation of a film is not merely a matter of correct interpretation of the action at any one point. The spectator must be able to make all the connections between one incident and another through which the world depicted on the screen acquires unity and coherence. This maxim holds true whether one is talking about the relationship between one tiny shot and the next or about the structure of an entire film; but the point that has just been suggested is that making sense of the juxtaposition between disparate times and places may be more "unrealistic" a task than piecing together the various incidents in a single time and place.

Evidence in favor of this proposition comes from both of the studies with children described earlier. According to Zazzo, the time lapse in the concluding part of the film in her study was the single most difficult feature for the children to interpret (Zazzo, 1952: 33), while the cross-cutting between locations in the third version of the film used by Mialaret and Méliès was reportedly the greatest source of difficulty for the children in that study (Mialaret

and Méliès, 1954: 227). Furthermore, in a related study by Zazzo and Zazzo in which a "difficult" kind of within-scene editing--cross-cutting between subjective viewpoints--was compared with editing based on time lapses, the latter was found to be the more difficult for viewers (including adults) to interpret (Zazzo and Zazzo, 1951: 168).

In addition to these studies there is a considerable amount of other research with a less direct bearing on this point. The general finding, which any one project may approach in its own way, is that children (or even older viewers) who do not give evidence of any difficulty with the editing within individual scenes do, on the other hand, misinterpret the larger connections in a film's structure. In a study by Collins, Berndt, and Hess (1974), for example, age-related differences were found in the ability of children to make the connection between three different scenes (a crime; a subsequent attack against a witness; and the consequent arrest and trial of the criminal), even though the younger children were apparently able to report the action within individual scenes (see also Collins, 1975; 1979). In several sets of observations Noble has found that younger children were less able than older ones to determine the point at which a film's scenes added up to a completed story, whereas following the action at any one point did not seem to be as major a problem (Noble, 1975: 91-94). In a series of studies summarized in Messaris and Gross (1977) even older viewers (eighth-graders and college students) who had no difficulty with the individual incidents of a visual narrative were almost totally unable to make certain connections spanning its entire structure (see also Pallenik, 1976). Finally, a study of adult subjects by Messaris (1975) found that only experienced viewers (filmmakers and film students) were able to make competent structural connections in parts of a film involving severe departures from "naturalistic" time-space sequence.

The notion that transitions in time, space, or both constitute a particularly acute obstacle to interpretation, and require considerable film-viewing experience on the part of audience members, is also supported by the historical evidence on the introduction and evolution of such transitions in American movies. In an elegant study of this history Carey has shown how long it took before Hollywood filmmakers were confident enough of their audiences' level of comprehension to be able to dispense with lengthy transitional material (titles, shots of locomotive wheels, pages flipping off a calendar, slow dissolves) between two different space-time points in a

film. It was not until the sixties that the use of simple cuts in these situations became a common thing (Carey, 1974). An interesting example of the kind of early audience reaction that was presumably responsible for this directorial apprehension over space-time transitions occurs in a trade review (from the New York Dramatic Mirror of June 20, 1908) of the film The Blue and the Grey. This film contains a transition from a scene in which the hero is brought before a firing squad to be shot, to a scene in which his girlfriend manages to secure a letter of pardon and then hurries back to save him. What is involved here, in other words, is not only a space shift but also a shift backward in time, so that the two actions could climax simultaneously. This dramatic device, rather obvious by today's standards of film editing, was considered a case of "faulty story construction" by the reviewer of the day, whose interpretation of the scene obviously could not accommodate the backward time shift: "The spectator is then asked to imagine the firing squad suspending the fatal discharge while the girl rides from Washington to the Union camp" (quoted in Kauffmann and Henstell, 1972: 7). Another good example of early resistance to transitions of this sort is the classic case of D. W. Griffith's experience in making the film After Many Years (1908). Griffith's wife has recorded the serious objections of his associates to his inclusion in this film of a direct cut from the film's heroine, deep in thought, to the object of her thoughts, her husband cast away on a desert island. In this case, however, it appears that the audience did not share these objections (Mrs. D. W. Griffith, 1975: 66).

In general, then, there is a variety of evidence in support of the notion that breaks in space and time violate the inexperienced viewer's reality-based expectations of image flow more than most kinds of within-scene editing and therefore occupy the more extreme positions on the continuum of editing-types. Clearly, a thorough description of such a continuum would deal with distinctions among various subcategories of space-time transitions, some of which (e.g., flash-forwards) depart from the possibilities of real-life visual experience more than others (e.g., transitions from the exterior to the interior of a building). However, since the kind of data that would be needed to support such finer distinctions are not yet available, our construction of a continuum of editing types must necessarily stop with the tentative outline discussed thus far.

Conclusion

In this chapter we have examined a question that has long been a concern of film scholarship: is the interpretation of a film something that a viewer has to learn to do? In response to this question we developed the following argument: from what we know about human perceptual processes, visual perception is apparently not dependent on absolute accuracy or completeness of available visual information; therefore the fact that photographs and single-shot unedited pieces of film depart from the appearance of reality in certain ways need not mean that special interpretational skills must be developed for dealing with them. The introduction of editing into a film should change this situation to a greater or lesser degree, depending on the extent to which a particular type of editing approximates the kinds of combinations of images that could occur in real-life visual experience. The degree to which experience with film and special skills for film interpretation are required by any one type of editing should vary accordingly. The presentation of this argument concluded with a first attempt to construct a continuum of editing types, according to the extent of film-related interpretational experience required by each.

Several observations should be added to this summary of our argument. First, it must be emphasized again that the only kind of interpretation of concern to us here has been the identification of what a film represents, assuming that it does represent something. Our argument is clearly irrelevant to other kinds or aspects of interpretation. Second, it must also be emphasized that there are many types of editing that this discussion had to overlook for lack of space and of relevant data. Finally, it should be pointed out that our discussion has also omitted consideration of an important corollary question to the one we have been dealing with: if viewers do have to learn to interpret some aspects of film structure, how does this learning occur? While the question may seem obvious once stated, it does not appear to have received any attention in the literature on film, and the most one can do here is to acknowledge its importance.

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