

For the 1996 JFK Lancer Conference in Dallas, 21-24 November, I was invited by Debra Conway and George Michael Evica to organize a session on the possibility that the Zapruder film might have been edited or otherwise altered to misrepresent events in Dealey Plaza on 22 November 1963. After extensive discussion, we agreed to hold a preliminary workshop on the 21st that would be limited to a small group of investigators for us to have the opportunity to exchange our findings and critique our results prior to their presentation during the public session to be held on the 22nd.

Workshop participants included David Mantik, David Lifton, Jack White, Chuck Marler, Noel Twyman, Ron Hepler, Roy Schaeffer, and Robert Morningstar, with contributions by Martin Shackelford, Art Snyder, and Sherry Gutierrez. The public session held on the 22nd involved presentations by Jack White, Chuck Marler, Noel Twyman, David Lifton, David Mantik, and me. In my capacity as chair of this session, I also provided a framework for reasoning about the evidence in this case from the perspective of what is known as "inference to the best explanation." On the basis of the results presented, I suggested to the audience in closing that we now have what appears to be "conclusive evidence" the Zapruder film has been extensively edited using highly sophisticated techniques.

This characterization generated a certain degree of controversy in subsequent discussion that occurred, especially over e-mail, during which I provided the following post as a summary of the session and as an explanation of the meaning of the language of "proof" within various contexts. This post has met with a generally favorable response. I am delighted it has been chosen for re-publication here.

THE ZAPRUDER FILM AND THE LANGUAGE OF PROOF

by James Fetzer

The recent comments since the symposium from another researcher suggest this may be an appropriate occasion to address the question of the nature and language of "proof," namely: what qualifies as "proof," when do we have "proof," and do standards of proof vary by context?

(1) Legal Contexts: "Proof" in Courts of Law

The situation is that the language of proof is ambiguous, meaning there is more than one meaning attached to "proof" as a function of different contexts. Consider, for example, the use of "proof" in legal contexts and in courts of law. In this sense, proof of crime exists whenever incriminating evidence exists. So O.J.'s blood at the scene, in the Bronco, in his home, etc., the matching gloves, the hair follicles, the Bruno Magli shoe prints, the photographs, etc., all qualify as "proof" that O.J. committed the crime. In this sense, call it "PROOF (1)"; of course, "proofs" may or may not be conclusive, since there may be alternative explanations that are just as reasonable as O.J. committed the crime. When no alternative explanation is reasonable, given the totality of the evidence, however, then the evidence may qualify as "proof beyond a reasonable doubt."

(2) Abstract Contexts: "Proofs" in Mathematics

A second use of "proof" occurs within the context of pure mathematics and deductive logic, where "proofs" involve deductive demonstrations from premises that are true as a matter of definition or of stipulation. When these premises are axioms of a formal system, the conclusions that follow from them deductively are known as theorems. This is the strongest sense of "proof," which might be referred to as "PROOF (2)." This is a sense that is so strong that "proofs" in this sense are seldom encountered outside abstract contexts of inquiry. But that is because ordinarily the premises on which reasoning is based reflect the results of observation, measurements, or experimentation, which are not true by definition or by stipulation. A typical use of the term in this sense would be claims to have discovered a proof of, say, Fermat's Last Theorem, for example.

(3) Empirical Contexts: "Proof" in Science

Alternative uses of the term "proof" sometimes occur within the context of empirical inquiries in senses that are stronger than the legal sense of PROOF (1) but weaker than the mathematician's sense of PROOF (2). However, the mathematician's sense is so strong that empirical scientists tend to avoid the use of this term in order not to convey a stronger sense of certainty than they intend. The premises upon which scientific arguments are based, moreover, typically involve definitions but require empirical evidence that has been derived from observation, measurements, and experiments. The conclusions of these arguments are often, but not always, inductive and general, drawing conclusions about classes of things and relations between properties in a search for laws, which may be deterministic or indeterministic. The discovery of new species that have evolved in short periods of time could still be cited as "proof" such things are possible.

An alternative but more prevalent use of the term in scientific contexts arises when evidence is cited that establishes within a narrow margin of error that some hypothesis or conjecture is false. Eddington's expedition to Africa to measure the deflection of rays of light in the vicinity of the Sun's gravitational mass was a crucial experiment in the history of physics because it provided evidence (inconclusively) confirmed Einstein's theory of relativity and (conclusively) disconfirmed Newtonian gravitational theory. The phenomenon of light deflection was inconsistent with Newton's theory, but predicted by Einstein's. What is most important about this sense of "proof," which we might refer to as "PROOF (3)," is that it establishes a negative result in falsifying a general hypotheses on the basis of observations and measurements that are subject to replication.

In discussions of Zapruder film authenticity, it is important to note that, from a logical point of view, the hypothesis that the film is authentic possesses the character of a general hypothesis asserting that, in every respect, the Z-film has not been altered/modified forged/... except perhaps in some obvious respects that are acknowledged by everyone (such as the large splice at frames 207-210 and an earlier splice). Such, for example, is the position of Robert Groden and, I suspect, of Josiah Thompson and perhaps Joe Riley, among others. Notice, however, that if it should turn out that we discover the existence of specific features of the film that indicate it has been altered/modified/forged/... in other respects than those that have been admitted, then the hypothesis that the film is authentic might be falsified, even "conclusively."

Presumably, of course, the conclusive falsification of such an hypothesis should be based upon observations, measurements, or experiments that are subject to replication by anyone with the appropriate background, training, and technology at their disposal, who would be expected to arrive at the same conclusions on the basis of the same evidence. Thus, scientific objectivity may best be understood as intersubjective reliability, in the sense that different students of comparable competence using the same methods and standards of proof examining the same evidence should arrive at (more or less) all and only the same conclusions, accepting as true, accepting as false or suspending judgment when the evidence is inadequate, as appropriate.

In the case of the Zapruder Film Symposium, which I

organized and moderated, many different arguments were posed based upon many different features of the film that appear to be inconsistent with its authenticity. For simplicity, let me refer to these features as "anomalies." These are features of the film that establish what might be called a PRIMA FACIE CASE for the film's lack of authenticity as apparent indications of alteration/modification/forgery/... During a workshop held on the 21st, the participants exchanged views about the anomalies they had noticed and the plausibility of various explanations for them. The results that we presented during the Zapruder Film Symposium, therefore, had already been subjected to preliminary critical scrutiny by the participants.

To illustrate the inferential situation, therefore, I shall mention four different kinds of evidence that we presented:

CASE 1: Mantik's studies of background magnification.

Mantik has discovered that background features in the film increase in their degree of magnification monotonically from about the Stemmons Freeway Sign through the head shot at Z-313 in spite of no increase in relation to the limousine. This strongly suggests that features of the foreground have been deleted by horizontal editing, as it were, and that background features have been increased in size to compensate in relation to an incomplete visual field, etc.

Mantik's studies support the following argument:

P1: If Mantik's studies of magnification are well-founded, then the Zapruder film has been extensively edited using sophisticated techniques.

P2: Mantik's magnification studies are well-founded.

C1: The Zapruder film has been extensively edited using sophisticated techniques.

This argument, of course, is deductively valid, which means that its conclusion cannot be false if its premises are true. Based upon my familiarity with Mantik's studies and appreciating the quality of his very precise and meticulous research, I am convinced that its premises are true. Consequently, I accept the conclusion C1.

CASE 2: Mantik's studies of the anomalous "white spot."

Mantik has also discovered a white spot in the background near the limousine (which is not to be confused with the "blob" that appears on the head), which changes in shape and size in a manner that cannot be accounted for on the basis of camera-induced variations, which have been measured relative to changes in shape and size of other features of the scene (a part of the limousine) that would not have otherwise changed in these respects. The result strongly supports the conjecture that this spot has been added to the film to create the impression that the limousine is in motion when it is either slowing or has actually stopped, a conjecture for which the Muchmore film provides striking corroboration in the form of nine consecutive frames which show that the brake light of the limousine is on.

These studies support the following argument:

P3: If Mantik's studies of the white spot are well-founded, then the film has been altered by the addition of this feature and is to this extent a forgery.

P4: Mantik's studies of the white spot appear to be well-founded.

C2: The film has been altered by the addition of a white spot and is to this extent a forgery.

My attitude toward his work on this subject is the same as before. I therefore also accept C2.

CASE 3: Twyman's studies of the Greer Head Turn.

Noel Twyman has conducted extensive studies using highly-conditioned athletes to measure the speed at which a person can turn their head from looking back over their right shoulder to looking straight forward, as Greer appears to do in the film. He has compared the speed of his subjects with that of Greer and has calculated that Greer's turn is approximately twice as fast as his subjects'. This may not sound impressive at first, until you consider that a runner who runs a 4 minute mile would correspondingly have run a 2 minute mile. His findings thus suggest that at least several frames have been vertically edited, as it were.

Twyman's studies support the following argument:

P5: If Twyman's studies of the Greer head turn are well-founded, then at least several frames have been edited from the film, which has been altered at least to that extent.

P6: Twyman's studies of the Greer head turn are well-founded.

C3: At least several frames have been edited from the film, which has been altered at least to that extent.

My confidence here is less only because the evidence of the motion of Greer's head turn in the film is not quite as conspicuous as that of the white spot, for example. However, I do believe that Twyman's studies are well-founded and that conclusion C3 is warranted.

CASE 4: Jack White has noticed numerous anomalies in the film.

These include an automobile turning the corner which looks as though it is suspended in the air ("auto-levitation," I called it at the meeting), a series of frames where the line of spectators near the Stemmons Freeway Sign seem to be virtually motionless for quite a few frames (even though they are seen smiling and waving at that same time in the

Muchmore film), a little girl in the background who takes two steps forward with the same leg in succession, and numerous other small anomalies.

White's observations support the following argument:

P7: If White's observations of anomalies are well-founded, then the film has been subjected to alteration.

P8: White's observations of anomalies are well-founded.

C4: The film has been subjected to alteration.

Viewing and discussing these anomalies with White and other participants, both premises appear to me to be well-founded. I therefore also accept conclusion C4.

Further elaboration on each of these lines of argument may be found in other posts, but the most complete resource should turn out to be the videotape of the Zapruder Film Symposium, which JFK Lancer Productions has assured us will be made available in its entirety at a date early during 1997. I have said before and I reassert here that this evidence appears to provide conclusive evidence that the film has been subjected to extensive editing using sophisticated techniques. Those who resist this conclusion are invited to dispute either the first premises of each of these arguments—namely, P1, P3, P5, or P7—or their second premises—namely, P2, P4, P6, and P8—because unless something is wrong with these premises, their conclusions—C1, C2, C3, and C4—are warranted and ought to be accepted as true.

Those who reject them in the face of the evidence that has now been presented, therefore, are obligated to explain in what ways these studies have gone wrong or run the risk of qualifying as irrational. Rationality in this sense, after all, involves accepting or rejecting conclusions on the basis of the available relevant evidence, which in the case at hand suggests that, as in the case of Eddington's expedition to Africa, an hypothesis, namely: that the Zapruder film is authentic and has been decisively falsified on the basis of evidence that is subject to objective replication. In a sense that is weaker than the mathematician's sense of "PROOF (2)" but stronger than the legal sense of "PROOF(1)," it appears to be entirely appropriate to assert that, in the scientific sense of "PROOF (3)," the case has been proven.



JFK Lancer Bus Tour

Hosted by Joe Backes and Tom Jones

seeing the actual places where an event happened, such as Parkland Hospital and the Texas Theater, made their studies clearer and enabled them to have a better focus on the case.

The bus tour was a real successful part of the conference. Sunday morning more than 60 persons braved the weather to see the local assassination sights. Joe Backes proved a very informative narrator, providing a comprehensive booklet and important insights to the participants. Many riders related to us that