

THE EVOLUTION DEBATE ONSCREEN:
UNRELIABLE NARRATORS FIND A HOME

by

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ABSTRACT

Faced with increasingly influential opposition from fundamentalist religious groups, evolutionists could benefit from reexamining their strategies in the evolution vs. creation debate. This thesis is based on the understanding that the debate is not about scientific evidence, but rather warring ideologies. The religious fundamentalist ideology perceives materialism and moral relativism as threats that follow from the theory of evolution, and in this thesis both threats are debunked.

Understood as warring ideologies, the debate broadens, and calls for a wider range of approaches. Art could be advantageously employed to draw these ideologies out and show them more clearly, and this thesis explores the possibility of using found footage films in particular to do so.

INTRODUCTION

As the 150th anniversary of the publication of *The Origin of Species* approaches, America continues to generate a stunningly tenacious band of disbelievers in the theory of evolution, and their influence continues to grow. This is not merely an annoyance to the scientific community: their movement "teaches us not to change our minds, and not to want to know exciting things that are available to be known. It subverts science and saps the intellect" (Dawkins 284). To oppose this movement, new measures are called for, as it is not (and has not been for decades) truly about scientific evidence. In this thesis, I advocate a more substantial role for art as a method for engaging this debate, as it has the potential to draw out the true conflict, which is a war between ideologies. In particular, I will discuss the possibility of using film montage to expose the unscientific core of the widespread evolution-denying movement in America.

For anyone unconvinced that evolution denial has, in fact, become a widespread movement in America, a brief overview of recent events might help. In 2005, an article written by a leading proponent of intelligent design was included in *The Best American Science Writing 2005* (Berlinski; Lightman). A supporter of teaching intelligent design in science classrooms is currently running unopposed for president of the National School Board Association (Dean). George W. Bush himself has advocated the teaching of intelligent design (Hutcheson). Evolution deniers have made large inroads in their war against evolution through massive media campaigns (billboards, radio shows, seminars, books, websites, etc.), widely-publicized legal battles and the construction of public spectacles such as Dinosaur Adventure Land in Pensacola, Florida, and the \$27 million

Creation Museum in Petersburg, Kentucky (both of which teach visitors that the Earth is roughly 6,000 years old). This media campaign, unrivalled by the counter-efforts of the National Center for Science Education and other groups, is all the more disturbing given the recent study that provides "the first evidence that repetition of the same opinion gives rise to the impression that the opinion is widely shared, even if all the repetitions come from the same single communicator" (Weaver, et al. 822). Perhaps most tellingly, despite court rulings against challenges to science curricula brought by disbelievers in evolution, the percentage of the American public that accepts the theory of evolution has declined from 45% to 40% over the past 20 years (Miller et al. 765). While their influence is significant, however, disbelievers in evolution are not a united front. They range from young Earth creationists to somewhat more sophisticated intelligent design supporters. What do these factions have in common, and against what are they truly fighting? Why have scientists struggled with this debate and engaged in endless attempts to show the disbelievers the evidence for evolution? What is truly at stake and how can this battle be fought more effectively?

THE EVOLUTION DEBATE IS NOT ABOUT EVIDENCE

As I have already indicated, it is crucial to point out that what is truly taking place is an ideological war.

Even though most creationists are sincerely convinced of their positions, they are interested only in winning the ideological war. If evolutionary theory had no theological implications (say, like atomic theory), there would be no debate. This point is strangely missed by scientists, who continue to behave as if creationists were either lunatics (which by and large they are not) or as if they needed to be rebutted on solid scientific grounds, after which they would go away. (Pigliucci, "Denying" 45)

What exactly are these theological implications that have evolution deniers up in arms and that make refutations based on evidence so futile? Far and away the most threatening implication is philosophical materialism (Pigliucci, "Denying" 69), or the idea that the natural world is all that exists, that we came not from a creator but from natural processes. From this follows the threat of moral relativism (the idea that we all have equal claim to do what we like based on our own selfish desires, and there is no incentive to care about the next fellow), because if we are all that exists, we are not going to be held accountable to God, nor to anyone but ourselves. The threat of moral relativism receives an endless amount of attention from evolution deniers, despite the difficulty of actually extracting a set of unquestionable morals from the Bible itself, as well as the distasteful implication that, as Richard Dawkins puts it, it would "require quite a low self-regard to think that, should belief in God suddenly vanish from the world, we would all become callous and selfish hedonists, with no kindness, no charity, no generosity, nothing that would deserve the name of goodness" (Dawkins 227).

Although these two threats have motivated scores of people to attack the theory of evolution, they are severely misguided, as I will demonstrate. The scientific community and educators might find more success in this ongoing debate if they carefully address these threats. The critical distinction to make regarding the threat of materialism is one between *philosophical* materialism and *methodological* materialism (or naturalism). While a few outspoken scientists may argue otherwise, philosophical materialism is *not* implied by methodological naturalism. Methodological naturalism simply holds that in testing hypotheses and theories about the natural world, one must stick to naturalistic explanations. Without this principle, science would not proceed, as the involvement of supernatural causes cannot be tested empirically. This methodology has proven extremely reliable for gaining knowledge of the natural world, yet it is attacked by evolution deniers for its bias against supernatural explanations. Moreover, as Pigliucci points out, we all regularly act as methodological naturalists.

We are willing to bet (and this is an empirically verifiable prediction) that the next time that Williams' car breaks down he will not go to church and ask his preacher to fix it; he will instead bring it to a mechanic, seeking a natural solution to the problem. Moreover, even if the mechanic should not find any remedy, Williams will not therefore turn to God, but will ditch the car assuming (reasonably) that the facts are simply insufficient to find the correct natural fix, and that he is better served by another means of transportation. ("Fallacies" no.2)

Thus it is vital to defend methodological naturalism, and to point out that confining hypotheses about the natural world to observable natural phenomenon does *not* entail the philosophical position that natural phenomena are all that exist. There is no incompatibility with a belief in God and an appreciation of the usefulness of naturalistic methodology for examining the world.

As for the threat of moral relativism inevitably resulting from belief in evolution, a topic that evolution deniers expound on at great length, it can be disproved all too easily. The evidence against it is that millions of people, young and old, have managed to go on living decent lives, acting kindly to strangers rather than stealing from them, after understanding and accepting the theory of evolution. The concept that we evolved from animals without human consciences does not predict or even imply that we would choose to act against our consciences, given this understanding. In fact, very few would choose that, and the type who would has been in existence since long before the theory of evolution occurred to anyone. Yet evolution deniers tend to insist that without the moral absolutes laid down by our creator, society would fall into ruin. In fact, they often cite examples of ways that society is already falling into ruin as a direct result of the teaching of evolution in schools. Their examples commonly include school shootings, as well as the increasing rates of abortion and teen pregnancies since the 1960s. However, a study published in 2005 that analyzed data collected from 38 nations revealed that the United States, "the most theistic prosperous democracy" (Paul 7), did not show evidence of correspondingly higher societal health. In fact, quite the opposite. "In general, higher rates of belief in and worship of a creator correlate with higher rates of homicide, juvenile and early adult mortality, STD infection rates, teen pregnancy, and abortion in the prosperous democracies. ... The United States is almost always the most dysfunctional of the developed democracies, sometimes spectacularly so..." (Paul 7). Not only, then, do the evolution deniers' examples of moral decay due to the teaching of evolution not stand up, they actually can be used as evidence supporting their opponents' case. Even beyond this, and perhaps more importantly, the accusation of moral relativism that evolution

deniers level against evolution confuses an ethical question with a scientific one.

Pigliucci points out that this distinction is an important one in other areas of science as well:

The fundamental research that enabled us to understand how atoms are constructed was sound science. That same knowledge has subsequently given us power to split the atom and liberate an amount of energy sufficient to kill hundreds of thousands of our fellow humans at once, and probably to blow up the whole planet, if we wished to do so. No matter how strongly one might disapprove of the atomic bomb or of eugenics, it is simply a non sequitur to infer that the science that led to those practices or applications is bad science. ("Denying" 161)

One does not have to like the results of science, nor consider them "good," in order for them to be valid. Instead it must be a separate question, one that does not attack the legitimacy of the results, which asks what we should do with or about those results. In the case of evolution, this means accepting that natural selection is the best explanation we have for the diverse forms of life on Earth, and from that acceptance, asking what, if anything, that means for our religious faiths, and what should be done about it.

Obviously, evolution deniers have skipped the acceptance, decided they can't live with what it would mean for their religious faith, and set out to change the scientific results accordingly.

Those two threats may explain what motivates the religious and conservative leaders of our nation to declare war on the theory of evolution, but what explains the fact that so many millions of people follow their lead? Is it for the same reasons? Does your neighbor spend time fretting about moral relativism? Perhaps, but I propose that the supporters of this movement embrace it for other reasons. A recent review titled "Childhood Origins of Adult Resistance to Science" illuminates these reasons well. The

authors discuss the fact that scientific findings often contradict our native, intuitive understanding of the world, citing several examples. One example is that "children naturally see the world in terms of design and purpose. For instance, 4-year-olds insist that everything has a purpose, including lions ('to go in the zoo') and clouds ('for raining'), a propensity called 'promiscuous teleology.' Additionally, when asked about the origins of animals and people, children spontaneously tend to provide and prefer creationist explanations" (Bloom & Weisberg 1996). Thus, part of the difficulty in teaching and learning science is that children are not blank slates. They come with "alternative conceptual frameworks for understanding the phenomena covered by the theories we are trying to teach" (Bloom & Weisberg 1996). Added to this is the fact that we (as both children and adults) are often unqualified to evaluate the veracity of claims made by experts.

Few of us are qualified to assess claims about the merits of string theory, the role of mercury in the etiology of autism, or the existence of repressed memories. So, rather than evaluating the asserted claim itself, we instead evaluate the claim's source. If the source is deemed trustworthy, people will believe the claim, often without really understanding it. Consider, for example, that many Americans who claim to believe in natural selection are unable to accurately describe how natural selection works. This suggests that their belief is not necessarily rooted in an appreciation of the evidence and arguments. Rather, this scientifically credulous subpopulation accepts this information because they trust the people who say it is true. (Bloom & Weisberg 1997)

This clearly reminds us that the evolution debate is actually a war of ideologies. Even among the 40% of the population who accept the theory of evolution, a large proportion can't accurately describe how natural selection works. They believe in it (even stating their acceptance as "belief") because they trust the sources they learn it from; that is, they accept and live by the same or similar ideologies as those sources.

CONFLICTING IDEOLOGIES

It may be useful at this point to further discuss ideologies in general. Louis Althusser defines the term "Ideological State Apparatus (ISA)" (Althusser 142) in order to distinguish them from State apparatuses that operate mainly in the public domain and via repression and violence (police, the army, courts, etc.). ISAs, on the other hand, operate mainly in the private domain, and via ideology. He recognizes the religious ISA, the educational ISA, the family ISA and the cultural ISA, among others. Furthermore, he maintains that every action is informed by ideology, whether as simple as a handshake or as convoluted as confessing a sin. While the religious ideologies are easier to recognize, scientific ideologies are just as real, and people live by them as well. One does not need to go to the indefensible extreme of positivism to be influenced by or a supporter of scientific ideology. What does this mean with respect to the theory of evolution? As Pigliucci noted, there would be no debate if the theory of evolution had no theological implications ("Denying" 45). Stated another way, there would be no debate if evolution did not directly interfere with certain religious ideologies. For "it is not their real conditions of existence, their real world, that 'men' 'represent to themselves' in ideology, but above all it is *their relation* to those conditions of existence which is represented to them there" (Althusser 164, emphasis added). Thus, it is because evolution threatens, at the most fundamental level, what people get from their religious ideology: a representation of their relation to the real world. To believe in evolution would require a shift from a religious ideology, which tells them that they are a unique creation of an intelligent entity, to an evolutionary ideology, which tells them that they are the result of

unauthorized natural processes. The extent to which that appears to be an appallingly unacceptable shift in one's perceived relation to the real world is reflected in the vehemence and diligence with which evolution deniers have protested, attacked and otherwise tried to discredit the theory of evolution over the last 150 years.

However, this is not a universally unacceptable shift—America has seen far more of these attacks and highly charged court cases than most nations. Data collected in surveys of 34 European and Asian countries revealed that only Turkey has a lower rate of public acceptance of evolution than the U.S. "In Iceland, Denmark, Sweden, and France, 80% or more of adults accepted the concept of evolution, as did 78% of Japanese adults" (Miller et al. 765). Part of the reason for this is that evolution has become politicized in the U.S. In addition, it can partly be explained by the above-mentioned natural resistance to science and our willingness to trust certain sources. Bloom & Weisberg conclude their review thusly:

These developmental data suggest that resistance to science will arise in children when scientific claims clash with early emerging, intuitive expectations. This resistance will persist through adulthood if the scientific claims are contested within a society, and it will be especially strong if there is a nonscientific alternative that is rooted in common sense and championed by people who are thought of as reliable and trustworthy. This is the current situation in the United States, with regard to the central tenets of neuroscience and evolutionary biology. (997)

Their conclusion raises an interesting point: what is common sense? They say that if an alternative is rooted in common sense, it will be especially hard to replace. But biologists would accept evolution as common sense, and in fact many do publicly state it in those terms. A creationist firmly believes that it is common sense that we were all made by a creator, and that everywhere you look, complexity demands a designer. They, too, will

publicly declare that it comes down to common sense. So whose common sense are we meant to accept as authentic? The dilemma arises because, of course, "common sense" is deeply rooted in ideology. We accept as common sense those things that confirm our perception of our relation to the real world. For many things, everyone can indeed share a "common" sense of our relation to the real world—hot stoves will burn us, planes will transport us quickly, water will quench our thirst—but we quickly get into trouble with things that concern our relation to the real world when, at the most basic level, those perceived relations are at odds. If your ideology tells you that God designed you, and mine tells me we evolved from primates, we won't share a "common sense" about matters concerning science, religion or education.

ENGAGING THE DEBATE VIA ART

What tools do we possess, then, that will allow us to expand the discussion about evolution into one about competing ideologies? We will have to leave the domains of talk shows, churches, and science labs and head in the direction of philosophy periodicals. But what segment of the American public can we hope to engage with texts in philosophy journals? Only a minute fraction. I propose an alternative approach—less direct, perhaps, but much more wide reaching—and that is through art. Art exists outside of science, religion, and education. While it can't claim authority in any of those realms, or make objective truth claims in any of them, it can take their pronouncements and portray them in a way that comes closer to revealing them for what they are: competing ideologies. While it won't claim neutrality (every action is still informed by ideology), it can take advantage of the fact that neither side is trained to dismiss works of art in the way that they are trained to dismiss each other's claims. And while art surely can't change the world on its own, it *is* capable of effecting profound changes in our patterns of thought. As a character created by Darin Morgan says in an episode of the X-Files, "Still, as a storyteller, I'm fascinated how a person's sense of consciousness can be so transformed by nothing more magical than listening to words. Mere words" (Morgan). An excellent example of how art has been used effectively in the evolution debate is Bobby Henderson's "Church of the Flying Spaghetti Monster." The church, which is entirely a parody, began as an open letter to the Kansas School Board, in which Henderson insisted that the theory of intelligent design which holds that the universe was created by a Flying Spaghetti Monster must be taught alongside the more common theory of intelligent

design, as it, too, is based not on faith but on science, and has millions of strong (if secretive) supporters (Henderson). After Henderson also posted this brilliant missive on his website, the Kansas School Board responded, and a storm of mainstream media coverage followed. The FSM is now widely recognized as a symbol satirizing the intelligent design movement, and is often cited in discussions of the evolution debate.

FILM MONTAGE AS AGITATIONAL DOCUMENTARY

If art is a worthwhile approach in general, it is my contention that montage, and in particular film montage, is a strong method for recasting ideologies in particular.

Montage films have a long and venerable history of conveying subversive commentaries about dominant ideologies. Scott MacDonald (as quoted by Rob Yeo) noted that "the practice of using films from a variety of sources—found footage—as the raw material for new works of film art has a history that dates back almost to the origins of cinema and is currently considered 'a, if not *the*, dominant critical procedure in independent film and videomaking'" (Yeo 13). Among the first to pioneer this territory was Esther Shub. In *The Fall of the Romanov Dynasty*, "Shub reedits the czar's own home movies and newsreels to expose and foreground the ideological presumptions that inhered in the production of the original footage. Shub's montage recontextualizes the once celebratory discourse of the original footage, providing an ironic perspective that questions the images and their enabling logics of empire and class" (Zyrd 58). In this work, Shub rearranged and wove together newsreel scenes from 1912-1917, as well as the home movies of the wealthy, in a way that had previously been associated with fiction film editing (this was likely partly a result of her friendship with Sergei Eisenstein) (Bruzzi 22). Through this technique and her creative use of intertitles, Shub was able to create, out of mostly pro-Tsarist footage, a documentary that condemned Tsarist Russia. Her juxtaposition of images of the privileged life enjoyed by the ruling class with images of their poverty-stricken subjects made stark illustrations of social injustice. This work differs from my proposed portrayal of evolution denial in important ways. Most notably, her acts of social criticism exposed

a truth that was hidden from view, whereas the goal of my work would be to call attention to a national debate taking place in plain view. She was able to contextualize original footage in such a way that made it tell a different story than its authors intended. But evolution deniers cannot, through clever editing, be caught in compromising positions in quite the same manner as Shub's subjects (and even if they could, it would be beside the point). In that sense there is nothing to reveal—they are already loudly proclaiming their beliefs to anyone who will listen, and it is the ramifications of those proclamations that is the problem.

Another pioneering film montage artist, Bruce Conner, introduced a very different editing style than the rather straightforward method used by Shub. Conner's most famous work, *A Movie*, "is a prime example of how seemingly random film footage can be recombined to develop complex concepts and construct a larger logic" (Yeo 17). In *A Movie*, Conner created fast-paced sequences that are not narrative but centered around a few themes: transportation (especially transportation disasters), sex and violence, atrocities and military footage. Paul Arthur calls this film a "devastating critique of dominant media's exploitation of violent disaster" (5). In a later film, *Report*, Conner manipulates news footage of Kennedy's assassination (mainly through repetition and looping) and combines it with other found footage depicting our mass media culture and capitalism. It appears as if his intent "is to indict the media and its role in the American way of life, even implying that the corporate interests manifested in the media are complicit in Kennedy's death" (James 157). Though his technique is unlike Shub's, Conner is also revealing a truth hidden from view, or at least building a case for what he sees as a truth. Conner (and perhaps Shub, to a lesser extent) seems to want to scrub off

the sheen of acceptability and authority that mass media footage carries by recontextualizing it and giving it new (often ironic) meaning. While I heartily applaud Conner's work, I do not believe such a feat is possible (or desirable) with footage of evolution deniers; they honestly believe what they are saying, and are fully aware of the arguments for the other side. In my opinion there would be nothing to gain by cleverly editing their footage in an ironic fashion to make them say the opposite of their intended message. Instead it might be worthwhile to use the audio portion of their lectures, combined with archival footage, to foreground their intended message and make its import even clearer, a possibility that I will discuss below.

The films of Bruce Conner and Esther Shub are but two examples of how "montage practice is about radical realignments of power" (Teitelbaum 8).

[Whether montage artists] stretch, repair, erase, or arrange the films of others, their actions help reveal something about either the original work or the medium itself. . . . Indeed, the deconstructive tools that these artists choose to use—and simultaneously to reveal to their audience—are further proof that while many of these works entertain, they also educate. For unlike video work (or indeed artwork in any medium) that aims to seduce and entertain viewers by reassuring them and reinforcing their preconceived view of the world, these works require active engagement, which hopefully will lead to critical thinking or, at the least, a healthy dose of skepticism. . . . These artists encourage viewers to confront hard-held beliefs and reveal the often-hidden structures that helped to inculcate those very beliefs. (Basilico 43)

If one wants to specifically encourage viewers to confront the hard-held beliefs of creationism or intelligent design, then, how might one harness the proven reliability of film montage in doing so? I would suggest that creationism and intelligent design present a special case for film montage, and call for a unique approach. What might this unique approach look like? To begin with, "if the documentary is to work as an agitational text

(as one that provokes its audience into awareness and action as well as increasing its historical knowledge) it has to be able to use or manipulate its original documents into a polemical thesis" (Bruzzi 38). The polemical thesis in this case is simply that this (evolution denying) emperor has no clothes, and the original documents are the emperor's own words, illustrated by images that can neither save him nor expose him any more plainly than he himself has done. It should be encouraging that this is familiar territory to Bruce Conner; he stated that "the idea behind the story of 'The Emperor's New Clothes' is central to my sense of aesthetics. ... I've seen foolishness all my life, yet for some reason we all agree not to mention it" (McKenna 1). And also, as Mitch Tuchman put it (as quoted by Bruzzi), "There is no finer flattery nor more delicious treachery than verbatim quotation" (25). Additional incentive to allow the evolution deniers' own words to serve as the audio content of the montage can be gained from the following view of narration as stated by Stella Bruzzi.

The traditional voice-over form emphasizes the unity, and imaginary cohesion of its various elements; so the dominance of the narration covertly serves to emphasize the incontrovertibility of the images by refusing to dispute and doubt what they depict. Narration could thereby be viewed as a mechanism deployed to mask the realization that this mode of representation, and indeed its inherent belief in a consistent and unproblematic truth, are perpetually on the verge of collapse, that commentary, far from being a sign of omniscience and control, is the hysterical barrier erected against the spectre of ambivalence and uncertainty. (52)

This radical view of narration coincides completely with the actual content espoused by evolution deniers. They insist on "a consistent and unproblematic truth," which is, in reality, a "hysterical barrier erected against the spectre of ambivalence and uncertainty" that the theory of evolution raises. So by placing the actual words of evolution deniers in

the film as the narration, two functions are served: 1) this radical view of narration is realized, and in the process sheds its undesirable role as a "fascist act that proclaims a film's didacticism" (Bruzzi 39), and 2) the preposterous, egregious and bewildering claims made by the evolution deniers are laid bare.

While some audience members may crave the more "polemical, confrontational style of [Emile] de Antonio" (Bruzzi 32) in response to the evolution-denying claims in the narration, I would argue, as stated above, that the images accompanying the narration can neither save the emperor nor expose him any more plainly. In the traditional, didactic role of narration, the visuals normally support the voice-over, and vice-versa. In this case, while the narration still *sounds* didactic and authoritative, it is alternately patently absurd, unacceptable, and mystifyingly erroneous. Therefore it cannot be interpreted as the prototypical "voice of God" narration. Take for example, a few statements made by Kent Hovind: "The Apatosaurus had nostrils that were too small—he'd be sucking so hard to get a breath it'd set him on fire from the friction of trying to get air in there;" "If I get buried on top of a hamster, does that prove he's my grandpa?" and "The canopy of water overhead used to translate the vibration of the stars, the radio waves, into sound waves, so Adam and Eve could hear the gospel story proclaimed by the stars" (Hovind). Such outlandish statements simply don't call for a metaphoric or ironic visual retort. In their case, it is more subversive to let credulousness continue uninterrupted, or even to focus on credulity specifically, as by showing close-ups of a credulous audience. It is also worth noting that the bizarre statements are not actually narrating, per se, and that gives another reason to have the images be somewhat biased towards literal illustrations, so that the film stays close enough to the traditional model of narration to make the contrast

between the usual authoritarian, didactic voice and these misguided statements sufficiently pronounced. Furthermore, if the audience clearly knows something is wrong with the whole picture, but they are not explicitly *shown* what is wrong, the feeling of anxiety imparted by the unsettling narration will be heightened.

The fact that the narration is operating outside the bounds of reason and empirical thought makes this a fundamentally different project than Craig Baldwin's or de Antonio's incisive political critiques. In *In The Year of the Pig*, for instance, de Antonio was able to build a "furtively didactic" (Bruzzi 24) case out of pre-existing footage because he had amassed, among other powerful footage, scenes both of politicians giving authoritative reports on Vietnam and scenes that made it clear that those politicians were lying. This is true of much of the material that film montage artists such as Baldwin and de Antonio often work with, or base their works around. As Baldwin put it, referring to the "hysterical anticommunist rhetoric of the 1940s and 1950s Cold War-era footage," "It's just unabashed, unashamed propaganda—all you need to do is turn it over and it'll just shoot itself in the foot" (Zyrd 53). While creationist and intelligent design proponents do put out vast quantities of unabashed, unashamed propaganda, they do it so blatantly that it would hardly be a revelation to identify it as such. Furthermore, their propaganda is released mainly in the form of videos of lectures. These are mostly scenes of talking heads, interspersed with cartoons and PowerPoint slides. The potential for recombining these images and creating a subversive commentary is fairly low. Again, this gives more incentive to distill the most revealing audio from those materials and use it to form the basis of the montage. As for the visual content of the montage, using archival footage opens up a great abundance and variety of images (footage that would otherwise come at

a high financial cost, even if using university equipment). This, too, is part of the venerable tradition of film montage, which Baldwin calls "*cinema povera*" (Cox 2).

Conner recounts, "I made my first movie the way I did because of economics. I wanted to make a movie and I couldn't afford a movie camera" (MacDonald 254). But archival footage also places the filmmaker's motives in a dimension once-removed, in that they did not choose to set up a camera in that location and record what is being shown. They chose to show it in the current context, but they weren't invested in the creation of that footage. This can also lend the impression, at least subliminally, that many voices or viewpoints are being accessed and expressed, which is highly desirable in this case, as fundamentalist claims of exclusivity are one of the most pernicious aspects of their ideology. This would also seem to coincide well with what Matthew Teitelbaum sees as the role of montage:

Montage offers a kaleidoscopic expanded vision which, by collapsing many views into one, suggests an experience of unfolding time. In effect, montage replaces the image of a continuous life glimpsed through a window frame—the heritage of the fine arts since the Renaissance—with an image, or set of re-assembled images, that reflect a fast-paced, multifaceted reality seamlessly suited to a synthesis of twentieth century documentary, desire and utopian idealism. ... The compositional device of dramatic foregrounding provokes the viewer to re-think the relations between objects, to re-establish a hierarchy of correspondences. (8)

For a viewer used to glimpsing the debate through only their own window frame, then, a film montage could beneficially provoke them to see it from another perspective. This could be especially powerful if the montage draws heavily from educational films based around shots of children. For above all, what is truly at stake in this debate is the education of children. Are we going to attempt to teach them that life evolved on Earth, or are we going to teach them it was created by an intelligent being? As Kent Hovind is

fond of saying, "first graders believe anything you tell 'em" (Hovind). Again, this is not something that calls for a visual retort so much as a literal illustration. It is a simple fact of the debate that kids are at stake, and both sides take that fact seriously. Thus, one might see in the visual montage a theme of children, and especially of children filling the roles of the military, per se, in what the evolution deniers repeatedly describe as the war going on in America. I would argue that coupling, in the mind of the viewer, images of children engaged in a war (which can hardly fail to elicit a sense of disquiet, if not outrage) with the religious ideology being presented is one way of undermining the credibility of that ideology.

Even if it is too much to hope to undermine an ideology so firmly entrenched in the minds of millions, the creationist and intelligent design lectures do provide some low-hanging fruit that can be harvested. Recall that Bloom & Weisberg identified two major obstacles to increasing public acceptance of evolution: the counter-intuitiveness of the theory, and the fact that an alternative is supported by sources that many consider trustworthy. To simply reveal them as untrustworthy, then, would remove one of the legs the evolution deniers are standing on. In the film montage, this can be accomplished by including in the audio track the sexist statements made during their lectures. For while many might believe a source that tells them evolution is nonsense, few will believe a source that tells them in no uncertain terms that the man rules over the woman, or that women are inherently bad, or that women are mainly good for shopping, having babies and gossiping. This constitutes a simple, unambiguous way to reveal this source as untrustworthy.

CONCLUSION

In the United States, the evolution-denying movement is demonstrably mistaken, harmful to science, and needs to be opposed in new ways, such as through art. Artwork can help to re-frame the public debate in terms of warring ideologies, rather than honest, alternate interpretations of evidence. In the case of the Church of the Flying Spaghetti Monster, this has already occurred. This, in turn, could lead to more effective strategies for promoting acceptance of evolution—rather than racking up ever-more emphatic explanations of the evidence, evolutionists (and any interested parties) could expose and directly discuss the ideologies informing each side. This may eventually lead to a discussion of whether we should be as tolerant of religions as we are. Indeed, some notable scientists have already begun that discussion (Dawkins).

While I advocate the use of artwork in general to defend the theory of evolution against attacks from America's highly influential contingent of evolution deniers, in this thesis I have specifically explored the approach of creating a film montage containing a subversive commentary about this contingent, centered on a narration composed of their own words, and amplified by images that let the verbal statements resonate. The hoped-for outcome of such a film would be to get at least a few more villagers to look at the emperor without his clothes, and stand up and declare that this is foolishness.

For future work, I would enjoy finding a way to create a film montage piece that extended its subversive commentary to undermine the more sophisticatedly deceptive teachings of intelligent design proponents (rather than young earth creationists such as Kent Hovind). I also believe it would be highly worthwhile to find ways to promote the

teaching of the process of science, rather the facts and formulas that can be so readily misunderstood or disregarded if the process is not well understood.

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