17 Playing God: religious influences on the depictions of science in mainstream movies

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Introduction

Research on public attitudes toward science has revealed that an individual's personal values and belief system are crucial factors in determining how they respond to new developments in science, technology and medicine such as nanotechnology (Brossard et al., 2009; Nisbet & Scheufele, 2009; Scheufele et al., 2009; Toumey, 2011). Few cultural institutions have more influence on personal values and belief systems than religion, and few cultural products have as much impact on public perceptions of science as the mass media.

In popular works and in many scholarly texts the interface between science and religion has traditionally been depicted as one of unbridgeable conflict (Evans & Evans, 2008). In recent years scholars have raised doubts about the historical and contemporary basis of this conflict narrative (Ferngren, 2002). Nonetheless, the relationship between science and religion remains a topic of concern for the scientific community as well for various religious communities. One of the spaces where these concerns play out is in the stories we tell about science in the mass media.

In our research we find that religious communities, primarily western mainstream Christians, have often attempted to influence the way stories about science have appeared on cinema screens because they believed that movies were a powerful force in determining our perceptions of the world. These religious groups were concerned about the ways that movies portrayed science's role in society and science's place as a knowledge producer and tried to control how the stories are told and how audiences interpret them. By examining the negotiations between religious groups and the

entertainment industry we reveal how the culturally powerful medium of cinema has historically served as an arena where science, religion and morality come into conflict.

In this chapter we will explore the ways that filmmakers have converted the sciences into cinematic products and how religious groups have altered, responded to and appropriated these scripts by formal and informal censorship, negotiations with filmmakers during production and distribution and reviews written as guidance for religious audiences. This topic is far too large to be adequately covered in a single chapter. We can only provide a historical overview that focuses on Christian responses in the USA. This focus is justified by the fact that the USA has historically been the world's predominant producer of entertainment media and religious responses to movies have primarily emanated from Christian communities. The Christian community is not a monolithic entity, however.

This chapter will cover the diverse responses to science in movies among Christian groups, including differing responses from Catholics and Protestants. Through this exploration we provide some insights into what religiously minded people considered to be morally offensive, indecent, threatening or 'monstrous' about science and scientific ways of thinking. Religious responses to movie narratives show us the kinds of stories moral reformers did, and did not, want told about science as a social, political and cultural force.

1900–1933: origins of film censorship and movies as social propaganda

Religious anxieties about the moral impact of movies on the public began with the proliferation of nickelodeons in the 1900s. A number of reform organisations with religious orientations, such as the Women's Christian Temperance Union and the Federation of Churches, complained about the perceived immoral content of early movies. These groups worried that 'obscene' messages in films were degrading the morals of lower class and immigrant populations (Grieveson, 2004). Pressure from religious groups led to the creation of local censorship boards in municipalities and states across the USA in the 1910s. But the presence of local censors did not mollify religious protestors,

who continually pushed for a government-administrated national censor board. Fearing this, the film industry established an autonomous self-censorship organization called the National Board of Censorship in 1909 (renamed the National Board of Review in 1915). Although mainstream film producers agreed to submit their scripts to this board for approval, it proved to be ineffective, leading religious reformers to call for the creation of a federally run censorship board. Hollywood's response was to bring in Postmaster General Will H. Hays, who was also a Presbyterian deacon, in 1922 to head a new self-censorship organization called the Motion Picture Producers and Distributors of America, which became popularly known as the 'Hays Office' (Black, 1996).

Religious groups' (and thus censors') concerns about the persuasive power of the cinema were in line with the thinking of contemporary social science researchers about the influence of media messages on attitudes and behaviour, especially after witnessing the effectiveness of strategic propaganda during World War I. Activist groups of all types considered movies an ideal tool for social propaganda. These activists included public health officials, medical researchers and progressive reformers who used movies in campaigns to disseminate scientific discoveries about public health and to promote faith in scientific solutions to what were referred to as 'social diseases' such as syphilis, as well as other science-related social issues like eugenics and birth control (Parry, 2013; Pernick, 1996; Schaefer, 1999).

The producers of medical propaganda films believed that they were contributing to the moral good by persuading people to change their behaviour, but these films proved to be highly controversial. Initially, the difficulty for censors was that these films were all related to sexual reproduction and sex was the one subject that every censor board agreed was inappropriate for mainstream movies. But censors also considered that stories featuring modern medical science were emotionally upsetting and aesthetically unpleasant. Ultimately, responses to films dealing with venereal disease (VD), reproductive technologies and eugenics shaped subsequent national censorship policies by broadening censors' views on what aspects of a film were censorable beyond just sexual content.

Damaged Goods (1914) was the first motion picture to tackle the issue of VD, a term used until the 1990s, when it was replaced by the phrase 'sexually transmitted diseases'). The box office success of this sexually provocative morality tale resulted in the production of a host of other 'sex hygiene' films in the late 1910s such as *The Spreading Evil* (1918) and *The Scarlet Trail* (1919). Despite their significant sexual content there was very little official censorship of these films because they endorsed morality and abstinence as the weapons for fighting VD (Schaefer, 1999). After World War I, however, censors' policies on VD films shifted dramatically when two government-produced educational films, *Fit to Fight* (1918) and *The End of the Road* (1918), were released to wider audiences. They differed from earlier films by focusing on the use of prophylactics as a method for reducing the spread of VD, which led to widespread condemnation by Catholic groups (Parry, 2013). In addition, one of the very first studies into the effect of the cinema on audiences concluded that VD films could be harmful to mixed-gender audiences and should not be shown indiscriminately (Grieveson, 2004). These studies, combined with the Catholic protests, forced censorship groups to re-evaluate the entertainment value of VD films and their appropriateness for public consumption. Ultimately, VD films spurred censors' construction of a distinction between entertainment and educational films. This distinction played a crucial role in later censorship policies and it led to the physical segregation of the places where these two types of film could be shown (Pernick, 1996).

The inclusion of prophylactics in VD films was a major issue for religious groups because they were concerned with any cinematic narrative depicting birth control technologies. Contraceptives were illegal in the USA before 1918 but a large number of activists were working to repeal these laws. Movies became a battleground upon which both sides of the birth control controversy tried to sway public opinion, with advocate Margaret Sanger's *Birth Control* (1917) competing with anti-birth control films such as *The House Without Children* (1919). Unlike VD films, which escaped early censorship, birth control films were heavily censored and often banned outright by state censor boards. In some cases birth control proponents tried to get around religiously based censorship by

promoting birth control as a better alternative to abortion but this tactic was unsuccessful (Parry, 2013).

Religious organisations were not the only cultural group supporting censors' efforts to restrain public access to films featuring controversial medical topics like birth control. Medical scientists also strongly opposed activists' use of film. Birth control was a subject best left to scientific experts because its filmic depiction might undermine confidence in the medical professions by empowering the public to challenge medical authority. In this case, scientists joined religious reformers in endorsing the distinction censors made between entertainment and educational films (Ostherr, 2013).

Eugenics was one of the most controversial medical topics during this time and the subject appeared in a large number of propagandistic fictional films produced between 1910 and the mid-1920s, including the pro-eugenics *Heredity* (1915) and the anti-eugenics *The Regeneration of Margaret (*1916). Eugenics was a particularly thorny subject because it often led to overt discussions of birth control, sterilization and euthanasia. In addition, religious groups considered these stories immoral because they portrayed human reproduction as an outcome of scientific tinkering rather than as the spiritual expression of matrimonial love. But censors targeted eugenics films not just for their sexual morality but also because they were intellectually demanding, emotionally upsetting and aesthetically unpleasant (Pernick, 1996). Many religious film viewers and censors believed that the images of deformed bodies were too distressing for most viewers and could even cause birth defects in pregnant women.

The desire to eliminate 'unpleasant' medical subjects provoked censors to go beyond merely policing sexual morality to enforce visual standards for movies. In this way eugenic and other medical films played a central role in the emergence of what Martin Pernick (2007: 30) refers to as 'aesthetic censorship'. Many of the informal censorship policies that had arisen in direct response to medical films were formalized by the later adoption of the Motion Picture Production Code. This meant that

films that dealt with VD, birth control and eugenics virtually disappeared from commercial theatres by 1930.

Although the Hays Office took a strong position on medical films, it ultimately proved to be as ineffective as the National Board of Review. Hays believed that the only way studios would abide by his office's recommendations was if they agreed to adhere to a formal set of guidelines as to what was censorable. In 1930 studio heads agreed to abide by a code of standards called the Motion Picture Production Code that had been written by two prominent Catholics (Leff & Simmons, 2001). Martin Quigley was editor of the trade paper *Motion Picture Herald*. Father Daniel A. Lord was a Jesuit priest. (I will use the term Production Code to refer to the Motion Picture Production Code of 1930.) The Hays Office, however, could not force studios to accept their suggestions. This meant that, despite their agreement to abide by the Production Code, studios still frequently ignored its recommendations (Olasky, 1985). The director of the Hays Office at this time, Colonel Jason Joy, took a particularly lax approach to the Production Code, which he viewed as a flexible set of guidelines rather than a hard and fast set of rules. Because of Joy's lenient approach the period between 1930 and 1934 is referred to as the Pre-Code era.

There were no specific policies addressing science in the Production Code, although the document did include language explicitly addressing previous issues related to eugenics, VD and birth control. Other aspects of medical science became censorable because they fell under the heading of 'repellent subjects'. The Hays Office warned studios about the potentially 'gruesome' nature of film sequences involving surgical operations (Lederer, 1998).

Science did run afoul of local censor boards' religious sensibilities during this period. The rise of the horror film caused a number of censorship problems. Censors were concerned about the stories frightening audiences and the gruesomeness of monsters. But one of the primary issues was the blasphemous nature of plots in several films involving scientists usurping God's role as creator, including *Frankenstein* (1931), which several state boards banned for this reason. Censor boards also

removed specific dialogue in which the scientists claimed to be 'playing God' in films such as *Frankenstein*, *The Invisible Man* (1933) and *Island of Lost Souls* (1933). The fact that the Hays Office did not remove these lines at the script stage indicates how lenient Joy's interpretation of the code was before 1934.

1934–1966: controlling stories about science in the age of censorship

From the perspective of religious protestors the Hays Office's failure to rigorously enforce the Production Code meant that movies were just as morally problematic as they were before its adoption. In response, Will Hays created the Production Code Administration (PCA) as a way to curtail calls by religious groups for a government censorship organization (Black, 1996). This pressure also led the Catholic Church to form its own censorship organization, the Catholic Legion of Decency, in 1933 (Walsh, 1996). (The organization changed its name to the National Legion of Decency in 1935 but I will refer to it only as the Legion of Decency.) Tough-minded Catholic Joseph Breen took over as director of the PCA in 1934. Breen had the power he needed to force studios to alter their scripts to conform to the Production Code's standards or he would withhold the PCA's seal of approval (Leff & Simmons, 2001). The Production Code consisted of twelve major categories including crimes against the law, sex, vulgarity, obscenity, profanity, costume, dances, religion, locations, national feelings, film titles and repellent subjects. As such, the PCA and the Legion of Decency exerted significant influence over the types of stories studios could tell about science.

The intersection between science and sex continued to be a problem for censors. The censors' ban on VD films, for example, nearly prevented Warner Brothers from producing *Dr. Ehrlich's Magic Bullet* (1940) about the scientist who discovered the first cure for syphilis (Lederer & Parascandola, 1998). Negotiations with the PCA ultimately led to a film that celebrates the scientist without any references to his science (Kirby, 2014). The PCA also routinely censored scripts that used science in conjunction with criminal activity, such as the deployment of scientific progress as a justification for criminal activity in *The Amazing Dr. Clitterhouse* (1938) or the use of scientific methods to commit

the 'perfect' crime in *Before I Hang* (1940).[1] But broad notions of blasphemy and indecency allowed the PCA to censor science under almost any of the twelve categories. A scientist manipulating the soul in *Captive Wild Woman* (1943) violated the category of religion, while the PCA removed a lab experiment performed on a former church altar in the unproduced 1951 script 'Green Light' under the category of locations.

The PCA considered certain scientific fields to be particularly problematic under the Production Code. Stories involving evolution were a constant issue for the PCA, especially after the controversial Scopes Trial in July 1925. *Island of Lost Souls* may have made it through the Hays Office unscathed during Jason Joy's directorship in 1931, but the inflexible PCA removed every evolutionary element when Paramount re-released the film in 1941. The PCA also forced filmmakers to alter scripts for films such as *Dr. Renault's Secret* (1942) because they believed discussions of Darwin and evolution would offend religious individuals.

While the PCA altered films before production, the Legion of Decency classified films after their completion. The Legion's film classification system to guide Catholic viewers about which films were suitable and which were questionable used three levels: A, morally acceptable B, morally objectionable in part and C, condemned.[2] The Legion's judgement could seriously impact on a film's box office potential, so filmmakers were anxious to avoid a B or C classification (Black, 1996). Few films received C classifications for their scientific content and those that did were either VD films such as *Damaged Goods* (1937) or films concerning reproduction like *Men in White* (1934).

1 All information in this chapter concerning the PCA's censorship activities comes from the individual film files in the PCA files at the Margaret Herrick Library, Academy of Motion Picture Arts and Sciences, Los Angeles, CA.

2 All information in this chapter on the Legion of Decency's censorship activities comes from the individual film files in the Legion of Decency files at the Catholic University of America, Washington, DC.

Many films were given B classifications during this period because of the theological implications of their scientific depictions. For example, the Legion censured films that used scientific explanations to support the notion of transmigration of souls, as in *The Man with Two Lives* (1942) and *I've Lived Before* (1956). They also disliked film narratives that portrayed scientific progress as a more powerful progressive force than religion, as was the case with *Madame Curie* (1943). Like the PCA, the Legion took issue with films featuring psychiatry and evolution, but their responses to these depictions evolved over time along with Catholic policies. Before 1950 any depictions of evolution automatically led to a B classification. But the Legion embraced films with overt evolutionary themes like *Inherit the Wind* (1960) after Pope Pius XII acknowledged the Church's acceptance of biological evolution in his encyclical of 1950, *Humani generis*.

Fear of not obtaining the PCA's seal of approval or of receiving a B or C classification from the Legion of Decency led studios to appease these groups by altering their scripts or editing their final films. But filmmakers also took a number of other actions in order to get their scripts through the PCA or to avoid a B or C classification. The PCA often instructed filmmakers to consult the Catholic Church's Hollywood representative, Father John Devlin. Father Devlin's suggestions changed the scientific content of several films, including *Red Planet Mars* (1952), whose story originally involved a scientist perpetrating a religious hoax. Even before receiving formal feedback studios would often consult the Legion of Decency or other religious groups as a means of proactively placating censors and smoothing the approval process, as was the case for the biopic *Freud* (1962), where the Legion provided advice on how to make this scientific story palatable to religious audiences. In the case of *The Beginning or the End* (1947) the filmmakers consulted extensively with Cardinal Francis Spellman, which led to overt religious overtones in a film about the development of the atomic bomb (Gilbert, 1997: 52). This means that modifications to cinematic stories about science often did not come through censorship itself, but through the actions of filmmakers who were anticipating censure.

Despite the power of the PCA and the Legion of Decency, many religious organisations did not support the idea of movie censorship, even in the 1940s when the PCA and the Legion of Decency were at their most powerful. The Protestant Motion Picture Council (PMPC), for example, felt that censorship was morally reprehensible. Instead, they provided faith-based reviews in the *Christian Herald* that guided viewers but allowed the public to make their own decision about a film (Linnell, 2006).[3] The PMPC's reviews were not exclusively about morally problematic science in cinema. Reviews also reflected stories about science that they found inspirational or that they believed reflected their value system. Unlike the PCA and Legion of Decency, the PMPC celebrated films about psychiatry including giving a Picture of the Month award to Alfred Hitchcock's *Spellbound* (1945). They also embraced films featuring brave scientists undertaking scientific expeditions in the pursuit of scientific progress such as *Scott of the Antarctic* (1949), which they also named Picture of the Month. Ultimately, the PMPC preferred stories in which the goals of science aligned with the goals of religion by improving the human condition as in *Sister Kenny* (1946).

Unlike the PCA and the Legion of Decency, the PMPC trusted audiences to make the 'correct' interpretations about science in cinema. Proponents of censorship like the PCA, however, felt that it was a better strategy to modify movie plots in order to tell what they considered more appropriate narratives about science. These differences in approach reflected differing attitudes to morality between Catholics and Protestants in the 1940s and 1950s. The Catholic Church dictated its conceptions of morality to its followers, who were then expected to adhere to these judgements. Protestants offered guidance but wanted people to make their own choices about morality (Curran, 2008).

The threat of censorship during this period forced filmmakers to make decisions about which science to include or remove, based on reasons that had nothing to do with artistic merit, as they

3 All information in this chapter on the PMPC comes from the individual film reviews in *The Christian Herald*.

anticipated censure. The censors sense of moral certainty did not require them to even understand the science upon which they were passing judgement. Ultimately, the PCA and the Legion of Decency began to lose their influence in the 1960s due to broader cultural changes, including the rise of television, an increasingly permissive social stance towards sexual matters and a more socially progressive attitude in the Catholic Church (Leff & Simmons, 2001). The PCA became less worried about the theological implications of science and re-focused their efforts on retaining some influence over the growing depiction of graphic sex and violence. But concerns among religious groups about scientific content in films remained after the end of official censorship. Without the power to censor movies, however, these groups had to find other ways to influence the way that audiences interpreted cinematic stories about science.

1967–1992: new Hollywood and new science require new approaches

The Code and Ratings Administration (CARA) replaced the PCA in 1968. CARA advised and negotiated with studios over proposed movie content in order for a film to get its desired rating but it did not censor content. Hoping the new system would increase audiences due to the production of more ambitious films with uninhibited themes, the industry received the introduction of ratings warmly (Wyatt, 2000). Filmmakers, freed from prohibited or restricted material under the religiously constrictive Production Code, created an adventurous and vibrant cinema (Neale, 2005). Science played an important role in this period as immediate post-censorship Hollywood movies positioned controversial science and scientific ideas at the core of their narratives. The shift from censorship to ratings influenced the ways religious groups responded to the film industry.

Film reviews became one of the primary Christian strategies for dealing with Hollywood's perceived onscreen depravity. The Catholic Church dissolved the Legion of Decency in 1966 and established a new movie oversight organization named the National Catholic Office for Motion Pictures (NCOMP). Like the PMPC in the 1940s, the NCOMP decided to provide guidance at the point of reception rather than attempting to censor material prior to release (Gillis, 1999; Romanowski, 2012). The

NCOMP's bi-monthly *Catholic Film Newsletter* provided reviews through the lens of Catholic values, including their assessment of scientific content. The NCOMP was particularly sensitive to the deification of science and scientists in the films of the seventies. They believed that films like *The Andromeda Strain* (1972), *Zardoz* (1974), and *The Terminal Man* (1974) 'worshipped' science and technology and apparently attempted to demythologize God.[4] The NCOMP also found recurrent science versus religion narratives to be problematic. For example, Catholic reviews were unhappy that religion was framed as the antithesis to science in *Planet of the Apes* (1968). Even films that depicted religion as morally right, such as *The Exorcist* (1973) and *A Clockwork Orange* (1971), still placed religion in opposition to science and this caused the NCOMP concern.

Another approach that religious groups took to controlling movie content after the censorship era was the introduction of film awards. Film awards allowed religious groups to take a more positive approach to responding to Hollywood without turning its back on their original mission. The NCOMP launched annual film awards in 1965. Some of the earliest awards were given to science-based movies. The organization awarded the 1966 film of the year to the controversial *The War Game* (1965), which was about the impact of a nuclear war and atomic science policy in Britain. In 1969 the National Council of Churches and the NCOMP awarded Stanley Kubrick's *2001: A Space Odyssey* (1968) their film of the year as part of a joint award programme. It also won the NCOMP's Film of Best Educational Value that year. Religious groups readily interpreted Kubrick's science-based film as a religiously valuable film because of its dealings with supreme beings, whether metaphorical, alien or divine. They hoped that these awards would encourage studios to produce science-based films that allowed for discussions of the nature of the divine and promoted a role for morality in scientific progress.

4 All information in this chapter on NCOMP's activities comes from the individual film files in the NCOMP files at the Catholic University of America, Washington, DC.

Filmmakers' post-censorship freedom allowed them to tackle more serious science-based topics. Humanity's stewardship of the Earth became a prevalent theme; a concern also shared by religious communities during this time. The growing environmental movement inspired eco-films like *Silent Running* (1972), *Omega Man* (1971), and *Soylent Green* (1973). Protestant publications like *The Christian Century* suggested that the church should be more active in the environmental movement and that religious groups must rethink their traditional attitudes to reproduction (Cobb, 1970). This attitude was reflected in their reviews of eco-films that celebrated nature but warned against humanity destroying creation (Kavanaugh, 1971). In the eco-horror *Soylent Green*, where starving humans unknowingly eat processed human remains, the church survives as a refuge for the masses and attempts to treat those whom science has failed. This was a theme that the NCOMP's reviewers found 'consoling'. Religion and faith became frequent elements of science-based films throughout the latter part of the 20th century, appearing not only in opposition to science, but also as its ally.

Religious communities may have lost their direct input into film productions (via script and final approval) but there was still open dialogue between filmmakers and religious communities. Although this was an era of cinematic experimentation many filmmakers continued to court religious audiences. Audiences would be quick to associate Charlton Heston of the biblical films of the 1950s with his title role in late 1960s and early 1970s dystopian narratives. Reviews of *Planet of the Apes*, *Omega Man* and *Soylent Green* pointed out that it was Moses fighting apes, humanoids and evil corporations in these cinematic futures.[5] Heston's casting allowed filmmakers to court traditional and religious audiences. Studios also supported the production of viewing guides, including those published by the Lutheran Church. There was even a Lutheran Church Study Guide created for the

5 These film reviews can be found in the clippings files at the Margaret Herrick Library, Academy of Motion Picture Arts and Sciences, Los Angeles, CA.

religiously controversial movie *The Exorcist* which other Protestant groups, such as the Methodist Church, asked to use after the film's release.[6]

Filmmakers in the 1960s and 1970s also continued to work directly with religious organisations when their films dealt with sensitive topics. For example, director William Friedkin was in constant correspondence with the Roman Catholic Church in the USA throughout production of *The Exorcist* discussing the technical correctness of the religious rituals and the church's attitudes towards scientific practice.[7] Friedkin's consultation with the church meant that, despite erroneous reports of Catholic outrage in the popular press, the NCOMP's response to the film was mostly positive because they appreciated the film's 'salutary reflections on religious belief and the limits of science' (NCOMP, 1974).

Many science fiction films released between 1968 and 1977 were dystopian and serious, drawing upon imagined science and futures that would see the end of humanity. But the unexpected success of a 20th Century Fox release in 1977 signalled a significant shift in the depiction of science and the future. *Star Wars* ushered in a new genre and the era of science fantasy, as George Lucas termed it, began. *Star Wars* rejected the scientific realism that had defined science-based movies since 1968 by positioning itself firmly within the fantasy genre. The movie was well received by religious groups as a 'breath of fresh air' that avoided the unsettling science that had defined the science fiction of the 1960s and 1970s (Siska, 1977: 668). Comments from some of the film's producers backed up this religious reading. *Star Wars* producer Gary Kurtz, for example, told the First Congregational Church in Los Angeles that the film was a parable and that the spiritual nature of the characters and the notion of the Force were intended as touchstones for a predominately Christian audience (quoted in Dart, 1978). Other science fantasy movies of the late 1970s and early 1980s, including *Close*

6 See the Lutheran Study Guides Folder in the William Friedkin Papers at the Margaret Herrick Library, Academy of Motion Picture Arts and Sciences, Los Angeles, CA

7 See the William Friedkin Papers.

Encounters of the Third Kind (1977), *E.T. the Extra-Terrestrial* (1982) and the *Back to the Future* (1985, 1989, 1990) series, offered religious groups little to worry about with their blockbuster, family-friendly focus.

1993–2015: courting religious audiences with reconciliatory narratives

Throughout the 1980s religious groups continued to focus most of their attention on Hollywood's predilection for violence and sex rather than scientific content. But with the release of *Jurassic Park* in 1993 the religious community took a renewed interest in cinematic science. The film's success resulted in a subsequent flood of science-themed films that has not diminished (Kirby, 2011). Film reviews continued to be an important way for religious groups to respond to the science in movies. The rise of the internet in the 1990s increased the number of outlets for these reviews. But filmmakers were also beginning to appreciate the growing economic power of the Christian community. This awareness not only encouraged Hollywood filmmakers to court religious audiences for their science-based movies, it also convinced the Christian film industry that their own science-based movies could find success in mainstream theatres.

The high profile of *Jurassic Park* and the prominence of its evolutionary themes led to an almost unprecedented response from conservative Christians who sought to blunt or re-frame the film's scientific messages. Conservative Christian film reviews consistently deplored the film's overt discussions of dinosaur and bird evolution, with one reviewer calling it an 'unceasing barrage of evolutionist propaganda' (Dickerson, 1993). Several conservative Christian groups even tried to counter the film's pro-evolutionary stance by producing booklets and pamphlets explaining creationism and the 'real' origins of Jurassic Park's dinosaurs (see Figure 1). But it was the emergence of the internet during this period that led to an explosion of film reviews attacking the film's position on evolution. The lack of gatekeepers for this new medium meant that anybody could disseminate their ideas online about the blasphemous science of *Jurassic Park*. A large number of anti-*Jurassic Park* web pages sprang up soon after the film's release, including one hosted by Probe

Ministries (Bohlin, 1995). Fundamentalist Christian communities were not the only religious groups upset about the film's pro-evolution narrative. Some Orthodox Jews protested against the use of *Jurassic Park* promotional material on milk cartons in Israel because they believed that 'dinosaurs symbolize a heresy of creation' (Goldman, 1993, 7).

Nowadays, while official censorship is no longer a threat, it is possible to indirectly censor a movie through means other than directly changing a script or by directly banning a film. Movies can face a de facto ban if theatres are unwilling to show the film or if the film is unable to find distribution. This was the case for the 2009 film *Creation*, which was unable to initially find a distributor in the USA because its sympathetic portrait of Charles Darwin was considered to be 'too controversial' (Singh, 2009). According to Christian commentators this was not censorship; it was an example of market forces in action (Silvestru, 2009). From their perspective, it was not because of its subject matter that conservative Christian groups were keeping the film out of the USA. Rather, they believed that distributors had decided for financial reasons that the film would not be able to find an audience in a country in which only 39% of the population believed in the theory of evolution (Newport, 2009). In the end *Creation* received a limited distribution through Newmarket Films, a company that specialized in distributing controversial films, including Mel Gibson's *The Passion of the Christ* (2004).

The same economic concerns about potential Catholic protests that fuelled the development of the PCA and the Legion of Decency back in the 1930s also drove studios to consult the Catholic Church during the production of two films in the late 2000s. *The Golden Compass* (2007) and *Angels and Demons* (2009) were both based on controversial books whose plots revolved around depictions of the Catholic Church as an organization that actively obstructs scientific progress. In order to avoid Catholic boycotts of the film adaptations, the studios substantially reduced or removed any indication of an anti-science stance on the part of the Church. In a move reminiscent of the Legion of Decency, the studios also showed rough print versions to Church officials while indicating that they might be willing to edit out any problematical elements (Pacatte, 2011). In spite of the studios'

attempts to appease Catholic viewers the films still ran into significant opposition and boycotts from Catholic organisations.

Although some films during this period feature contestation narratives about science and religion, filmmakers have also crafted a number of movies that function as reconciliation stories. Space exploration films such as *Contact* (1997), *Gravity* (2013) and *Interstellar* (2014) use a sense of wonder about the universe to introduce metaphysical ambiguities that can be understood as both scientifically and religiously inspired. Several recent films include scientist characters struggling with their faith in the face of scientific discoveries, such as *Knowing* (2009) and *Prometheus* (2012). Despite sympathetic portrayals of both science and faith, the Christian community's responses to these films were mixed. Christian commentators received *Knowing*'s message of benevolent extra-terrestrials rekindling a scientist's religious faith warmly (DeMar, 2009). Interstellar's almost spiritual exploration of themes relating to love, death and sacrifice also resonated with many Christian reviewers (McCracken, 2014). On the other hand, while some Christians were pleased with the scientist's religiosity in *Prometheus*, most were disturbed by the notion of ancient alien creators in the film. Despite the earlier award for the similarly themed *2001*, the *Catholic News Service*'s review of *Prometheus* found that the alien-directed human evolution plotline 'renders '*Prometheus*' extremely problematic for viewers of faith' (McCarthy, 2012).

Reconciliation narratives were meant to appease religious audiences who might have taken offense at these films' clear reverence for science. But some filmmakers have gone even further by crafting science-heavy films that are directly aimed at courting religious audiences. The box office success of *The Passion of the Christ* provided a blueprint of how to use grassroots marketing to attract the religious right (Russell, 2013). Two films in the mid-2010s, *Noah* (2014) and *Exodus: Gods and Kings* (2014), used this blueprint to target religious audiences. But the directors of both films consciously attempted to frame traditional religious narratives as scientifically viable in order to also appeal to secular audiences (Bowman, 2008).

Ridley Scott looked to scientific rationales rather than miracles to explain the parting of the Red Sea and the Ten Plagues of Egypt in *Exodus* (Vilkomerson, 2014), while Darren Aronofsky openly merged religion with science in *Noah* (Chattaway, 2014). Although they were adaptations of biblical stories neither film managed to garner the approval of religious audiences. Noah proved to be problematic for religious audiences who rejected the science-based creation narrative as well as Noah's obsessive focus on contemporaneous environmental concerns (Masters, 2014). In the case of *Noah* and *Exodus*, religious audiences rejected science's intrusion into their stories of faith, while the scientific explanations were not enough to attract secular audiences to these biblical tales.

The recent proliferation of streaming services such as Netflix has meant that Christian films have become available to significantly larger audiences. Improved production values also mean that Christian films are often indistinguishable from major Hollywood movies. Many of the most successful mainstream Christian films have explored scientific and medical themes including *October Baby* (2011), *God's Not Dead* (2014) and *Heaven is For Real* (2014) (Macauley, 2015). Since 1968 religious organisations can no longer exert direct control over the scientific content in mainstream Hollywood movies. The current strategy for religious groups is to produce their own cinematic stories about science, and they have experienced a modicum of success in this outside their traditional Christian audience.

Conclusions

The created nature of movies makes them useful in understanding society's relationship with science because movies reveal the kinds of stories people want to tell about science. Filmmakers have made specific decisions to tell a story about science in a particular way. But our research demonstrates that decisions about scientific depictions in movies were not always left solely in the hands of filmmakers. Since the beginnings of cinema religious groups in America have tried to influence the way that filmmakers used science to tell their cinematic stories or they have tried to influence the way audiences interpret these stories about science. Religious organisations based

their approach on simplistic assumptions about the nature of movies and the nature of communication. From their perspective, films told linear stories using a heightened visual realism that conveyed easily understandable narratives to a monolithic audience. From this simplistic viewpoint, cinema seemed to be a powerful force in determining our perceptions of the world. As such, they were concerned about the ways that movies portrayed science's role in society, science's status as a knowledge producer and science's relationship to the spiritual.

In cinema's early days, religious reformers believed that by controlling the content of scripts and distribution of finished films they could ensure that movies disseminated only morally or theologically appropriate messages about science. For many religious groups censorship seemed to be a rational response to the dangers of cinema, especially at a time when activists were using the medium to promote scientific solutions to sexually based social issues such as VD, birth control and eugenics. Anticipating censure or boycotts forced filmmakers to make decisions about what science to include or remove, based on reasons that had nothing to do with artistic merit. In the case of the Hays Office, the PCA and the Catholic Legion of Decency, censorship decisions were founded on beliefs rooted in mid-20th century American Christianity. These organisations' sense of moral certainty did not require their censors to understand the scientific topics upon which they were passing judgement, including evolution, psychiatry and atomic science.

When filmmakers were no longer under the threat of censorship they could address more serious science-based topics, including environmental issues and biomedical ethics. This meant that religious groups had to change their tactics to address the scientific messages in films when direct censorship was no longer an option. Instead of preventing immoral messages, they decided to encourage studios by giving awards to films containing what they considered to be morally and theologically appropriate messages about the uses of science. Religious groups also began to provide their own movie reviews as a way to influence audiences' interpretations of scientific stories in films. These reviews allowed them to call attention to themes they found problematic. Reviews were also a

means by which groups could celebrate narratives about science they found inspirational, such as films promoting the spiritual nature of science. Mainstream filmmakers subsequently realized that they could achieve greater box office successes for their science-based films by incorporating scientific themes that appealed to Christian audiences. Ultimately, the Christian film industry decided that the easiest and, for their purposes, perhaps best way to control scientific themes in movies was by creating their own science-based films.

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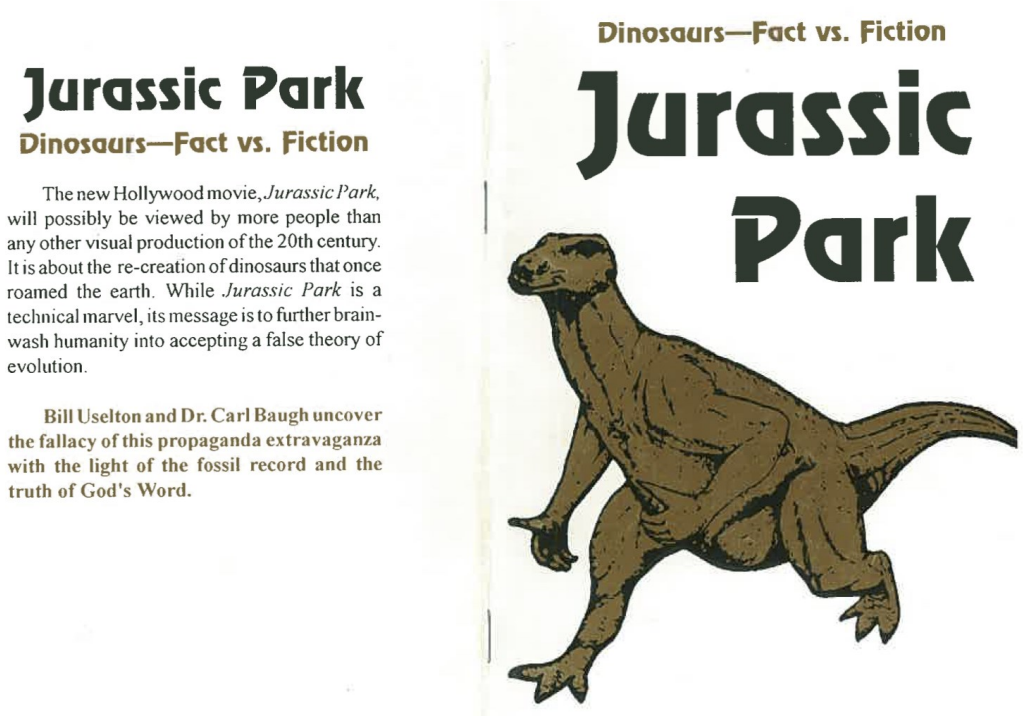

Jurassic Park

Dinosaurs—Fact vs. Fiction

The new Hollywood movie, *Jurassic Park*, will possibly be viewed by more people than any other visual production of the 20th century. It is about the re-creation of dinosaurs that once roamed the earth. While *Jurassic Park* is a technical marvel, its message is to further brain-wash humanity into accepting a false theory of evolution.

Bill Uselton and Dr. Carl Baugh uncover the fallacy of this propaganda extravaganza with the light of the fossil record and the truth of God's Word.

Dinosaurs—Fact vs. Fiction

Jurassic Park

Figure 1. Pamphlet on the creationist origins of Jurassic Park's dinosaurs disseminated by the Southwest Radio Church.

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