Cancer, Research, and Educational Film at Midcentury

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Introduction

IN 1949, THE US NATIONAL CANCER INSTITUTE (NCI) AND THE CANADIAN DEPARTMENT OF NATIONAL HEALTH AND WELFARE (DNHW) COMMISSIONED A FILM, EVENTUALLY CALLED CHALLENGE: SCIENCE AGAINST CANCER, AS PART OF A MAJOR EFFORT TO RECRUIT YOUNG SCIENTISTS INTO CANCER RESEARCH. BOTH ORGANIZATIONS WERE CONCERNED THAT POOR RECRUITMENT WOULD STIFLE THE DEVELOPMENT OF THE FIELD AT A TIME WHEN FUNDING FOR RESEARCH HAD GROWN SIGNIFICANTLY AND WAS EXPECTED TO CONTINUE TO GROW IN THE FORESEENABLE FUTURE. THE FEAR WAS THAT THERE WOULD NOT BE ENOUGH NEW YOUNG SCIENTISTS TO MEET THE DEMAND, AND THAT THE SHORTFALL WOULD UNDERMINE CANCER RESEARCH AND THE HOPES INVESTED IN IT. CHALLENGE AIMED TO PERSUADE YOUNG SCIENTISTS TO THINK OF CANCER RESEARCH AND BIOMEDICINE AS CAREERS. CANCER, RESEARCH, AND EDUCATIONAL FILM AT MIDCENTURY IS THE STORY OF THAT FILM: WHY IT WAS COMMISSIONED, HOW IT WAS MADE, AND HOW IT WAS PROMOTED AND PACKAGED.

Today Challenge is a largely forgotten film. It receives an occasional mention in histories of cancer control, and film historians and critics sometimes refer to its innovative animation sequences, and to the original score by Louis Applebaum. And that is about it: Challenge is barely a footnote in the historiography of medicine and film. However, for much of 1949 the movie was a major focus of an international collaboration between the Americans and Canadians, and by the early 1950s it had come to be regarded as a triumph by the two government health agencies and had gained recognition in the film world. It won first prize in film competitions in Venice and New York, and a theatrical version was nominated for an Academy Award in 1951. The prospect of the award generated huge excitement among officials in both health agencies. Some hoped for a trip to the Oscar ceremony. Thus, by 1951, the NCI and the Department of National Health and Welfare proclaimed themselves satisfied that their money was well spent, despite a lack of evidence that it had done much to aid recruitment. Like many, if not most, educational films on medical subjects, however, Challenge had a short screen life. By the 1960s the film was rarely shown, displaced by newer films, newer people within the sponsoring agencies, and newer agendas.

The film might have been quietly forgotten by the sponsors, but memories of it remained alive in the organization that made it, the National Film Board of Canada (NFB), Canada’s state-funded film producer and distributor. The
board, founded in 1939, was a pioneer of documentary and animated film, as well as a propaganda arm of the Canadian government during the Second World War. Despite internal doubts about the quality and effectiveness of the film, the NFB presented it as one of the best produced after the war, a harbinger of NFB Oscar nominations achieved by those involved in the film in the 1950s, and of future NFB technical innovations in documentary film and animation.

The influence of Challenge lingered on in other ways as well. The animation techniques in the film formed part of a genealogy that would eventually lead to the director Stanley Kubrick’s film 2001: A Space Odyssey (1968). In Challenge, the cell is portrayed as a universe in miniature in which the viewer is in the position of a traveler through outer space, the celestial bodies passing by comprising the inner parts of the cell. One of the two animators, Colin Low, later adapted ideas and techniques used in Challenge to make Universe (1960), an NFB educational film in which the viewer is again in the position of a traveler through outer space, the celestial bodies passing by representing stars, planets, and constellations. (Not the inner parts of the cell in this case.) It was Universe that caught the eye of Kubrick, who used it as inspiration for 2001, tempted Low to work for him on the film, and used the narrator of Universe as the voice of the malfunctioning computer, HAL.³

Themes

In telling the story of Challenge this book has several aims. A first is to contribute to the story of post-Second World War cancer research. It is well known that funding for cancer research in both the United States and Canada expanded as never before after the war, the beginning of a vast research endeavor against this group of diseases, and the foundation for what became the US “War on Cancer” in the 1970s, and for smaller Canadian efforts. What is less well known is the concern in those early years that the expansion might falter because young scientists were not entering the field. Challenge was a central part of government responses to such concerns in both Canada and the US and marked a major change in public cancer education programs in both countries. Until its release, such programs had focused more on recruiting patients into programs of cancer control than on recruiting scientists into cancer research. However, as funding for research increased after the war the balance began to shift. With the increase in funding, government and private initiatives against cancer came to focus on the recruitment of scientists and on generating public support for and understanding of research and its possibilities.
The book also highlights the role of government administrators in both Canada and the US who have not received much attention from historians: information or public affairs officers, struggling in different ways in each country to establish themselves within their agencies. Most historiographical attention has focused on the roles of leading philanthropists, politicians, scientists, physicians, and administrators in the growth of cancer research after the Second World War. Yet information officers were crucial to the efforts of both national agencies. They labored to justify new federal commitments to research with their special focus on cancer and helped to recruit both patients and physicians and scientists. Individual information officers never achieved the kind of recognition accorded to those who ran the two major federal agencies. Nor would they ever achieve the prominence of a figure like the philanthropist Mary Lasker, who is often credited with helping to expand research. Instead, they worked behind the scenes, often anonymously, setting the stage for their more visible colleagues. This book is thus revealing of a relatively unknown side of the postwar expansion of cancer research.

A third aim of this book is to explore the history of post-Second World War cancer educational filmmaking. As funding for cancer expanded dramatically after the war, so too did cancer filmmaking, especially in the US, which also came to target new audiences and new genres of film. Before the 1940s, filmmakers had used melodrama, primarily aimed at women, as a part of mass multimedia campaigns to promote programs of early detection and treatment of cancer. Through the 1940s, such campaigns came increasingly to address men as well, supplementing melodrama with genres such as cartoon comedies and detective stories. At the same time, films aimed at women now included how-to movies such as instructions for breast self-examination. In addition, children and young adults—alongside older adults—became the target of films that sought to explain the biology of cancer, the nature of research, and what needed to be done.

Challenge fell into this latter category of film, but unlike the others made at this time, it was produced in Canada for distribution in the two countries. As this book will show, until then Canada had made very few educational films about cancer and had largely relied on US films for its cancer education campaigns. Challenge turned this situation around and for the first time the Americans were to be reliant on Canadian filmmakers. Moreover, unlike in the US where cancer filmmaking was often farmed out to commercial filmmakers, Challenge was to be made by Canada’s state-funded NFB. The NFB had developed a close relationship with the Canadian DNHW and was making a growing number of educational films to feed the department’s new enthusiasm for film. Among these
were the highly acclaimed *Mental Mechanisms* series of films, the success of which was a factor in tempting the Americans to turn to the NFB to make *Challenge*.8

A final aim of this book is to examine the place of health education films within broader public education programs. Films had been incorporated into such programs from the early twentieth century, starting in the 1920s for cancer.9 Enthusiasts for film argued that movies would be a transformative educational medium, a key to the success of future health campaigns. But organizers came to recognize that films by themselves could not achieve their educational goals. Even the best could do as much harm as good. Critics argued that some produced in audiences an excessive optimism about therapeutic interventions that undermined faith in the film’s message when the expected cure failed to come through. Others, they suggested, created an excessive fear of diseases or interventions against them that paralyzed audiences into inaction and so undermined programs of disease control. So if films were to transform health education campaigns, those campaigns had to compensate for such problems. Few, if any, saw films as so much of a problem that they should be abandoned. Instead, it was suggested that embedding them within broader multimedia campaigns might compensate for films’ limitations. Books, magazines, newspapers, radio, pamphlets, posters, medical lectures, and face-to-face encounters between doctor and patient could direct people to watch the film, expand on points raised within it, answer concerns of patients, or counter misunderstandings or unwarranted fears or hopes generated by a film.

*Challenge* illustrates the persistence of such concerns in the postwar period. On the one hand, the book aims to show how the filmmakers sought to transform the concerns of their sponsors about science recruitment into something that would work as a film. Such efforts were shaped by a filmmaking culture within the NFB that established the themes of the film by mobilizing iconic figures such as the scientist and patient, alongside symbols such as the use of darkness to evoke ignorance. On the other hand, it also shows how sponsors did not feel that the film—however good it might be—could do all the work expected of it. They planned for several different versions of the film as part of a broader media campaign organized around film premieres in the US and Canada. They additionally produced books and pamphlets designed to help get the film into the classroom. Indeed, the film and the broader information and educational campaign were themselves part of even wider campaigns within the US and Canada to expand and reorganize research funding.

In the end, the NCI and the DNHW commissioned between them five different versions of the film: *Challenge: Science Against Cancer* (thirty minutes) and
a French version, *Alerte: Science Contre Cancer* (thirty minutes), both targeted at students; *The Fight: Science Against Cancer*, a twenty-minute theatrical release aimed at a general cinema audience (only in English); and *The Outlaw Within* (English) and *Cancer* (French), ten-minute versions of the same film for the NFB’s Canadian film circuits. For the NCI and the DNHW, these films were to be part of package that would eventually include Lester Grant’s award-winning book, *The Challenge of Cancer* (1950), which explained to a general audience the state of scientific and medical knowledge about cancer and what could be done about it, a teacher’s guide to facilitate the classroom use of the film and the book, and a filmstrip available in French and English versions—*What We Know About Cancer* and *Ce Que Nous Savons du Cancer*. The filmstrips were intended at first to be made from stills from the *Challenge* or its companion films, an intention abandoned in favor of using specially made images. They also launched an intense media campaign to advertise the film package and influence audience perceptions by shaping reporting of it in television, radio, and print. Both Americans and Canadians—often the information specialists within the NCI and DNHW—saw the film as a powerful means of getting a message to the public, but both also saw limitations to its power. The media and educational campaigns in which it was embedded were intended to counter such limitations.

**Sources**

One of the frustrations of working on the history of sponsored films can be the dearth of artifacts and records. The films themselves have often crumbled to dust, and the paper trails that recorded why they were commissioned, how they were made, distributed, or shown have disappeared. *Challenge* is different. Not only do all five versions of the movie still exist, but so also do major collections of papers from the various organizations and individuals that sponsored, made, and evaluated the movie. At times it is possible to know what was happening day-to-day, and from multiple, sometimes opposing, viewpoints: why certain choices were made, how tensions between different stakeholders were addressed, how the filmmakers went about making the movie, and how it fit into the politics of the organizations that sponsored or made the film.

Nor do the records stop with the commissioning and making of the film. The broader multimedia package is also well documented. Lester Grant’s book, the teaching guide, and the filmstrip have all survived, as have records of those who commissioned or made them. These records preserve the smallest details, from the seemingly mundane (debates over paper quality, typography, font, print
Introduction

runs, and costs, not to mention the problems of working during a Washington DC summer without air conditioning) to bigger questions about how best to ensure such publications would inspire an audience of high school science students. At the same time, the information specialists at the NCI and the DNHW compiled a large scrapbook for their agencies documenting the media campaigns around this film, which includes clippings of various media reports along with internal documents on the planning of the campaign. This scrapbook was likely assembled as part of institutional efforts to demonstrate the success of the film and perhaps to provide a model for future campaigns. In combination with other documentary and oral sources, the scrapbook allows us to explore not only the media plans devised by information specialists but also their views. It provides a rare glimpse into institutional process, documenting the steps in planning campaigns; the strategies adopted to approach different media and institutions; the response to these strategies; and the attempts to manage the responses.

Such rich evidence provides a unique opportunity to explore the roles of sponsors, filmmakers, and the media in such campaigns. In particular, it permits us not only to trace why the sponsors wanted a film to educate and recruit, but how and why the NFB transformed these ideas into something that they thought would work as a film. We can follow the institutional agendas of the Film Board and explore how information specialists, the media, and educators sought to transform these ideas through media and educational campaigns. Cancer, Research, and Educational Film at Midcentury is, in short, an exercise in reconstructing the contingencies of putting a health/science education film together in the 1940s and early 1950s, and how its form, uses, and reception were shaped by various stakeholders: the sponsors, the filmmakers, and those who promoted and viewed it. It shows how such contingencies ensured that control of the film and its argument remained elusive, and that it was a continual struggle to stimulate interest among sponsors, to define what they wanted of it, to produce the film itself, to shape its argument, and to influence its reception. Sometimes groups and individuals succeeded in their goals, sometimes they did not, but mainly they adjusted them as the film project developed.

Three projects

Challenge was one of thousands of films commissioned by medical, biomedical, and public health organizations after the Second World War. Unlike most Hollywood productions, such films did not aim primarily to entertain but to serve the agendas of their sponsoring agencies by educating, training, and informing
Introduction

various audiences and (crucially) transforming or reinforcing their beliefs and behaviors. Thus, like the industrial films studied by Vinzenz Hediger and Patrick Vondrau, these types of pictures must be understood in terms of their specific, usually organizational, purpose, in the context of power and organizational practice in which they were sponsored, created, and shown. They were a form of *utility film*, as Hediger and Vondrau put it, sponsored and produced in particular situations, for particular organizational reasons, and targeted at particular audiences. Films such as *Challenge* thus required more than the technical work of scriptwriting, camerawork, animation, music, sound, editing, and direction. They also involved other forms of work: administrative and managerial, marketing and educational, political, and institutional. In writing a history of this film, I divide such work into three overlapping projects — sponsoring, making, and packaging — each a work in progress that involved intersecting, sometimes antagonistic, groups and individuals, with different interests, skills, and agendas, distributed across a variety of organizations. In this way we can trace the evolution of the film, its multiple aims, how the filmmakers sought to transform a biomedical project into film, and how the sponsors sought to cultivate audiences and shape their responses to it.

The chapters that document the first project — *sponsoring* — explore the two major sponsors, the NCI and the Canadian Department of National Health and Welfare, and their different interests and concerns. While both wanted to increase recruitment of young scientists to biomedical research and were fearful that competition for recruits from industry and from atomic physics would undermine plans, the Canadians were also wary of the Americans who seemed to be poaching some of their best scientists. *Challenge* was therefore a mixed blessing to the Canadians.

If the two sponsoring organizations had different agendas, it was also the case that groups and individuals within each sponsoring agency had different interests and agendas. Two key groups need to be highlighted. The first was composed of government scientists and physicians, some included formally as advisers to the film, overseeing its scientific content, and others who offered advice regardless, muttering at times in discontent at their exclusion. Not all scientists, physicians, and administrators were in favor of spending money on a film, but once the money was committed advocates and (former) malcontents were generally united in claiming that they wanted to ensure scientific and medical accuracy. All involved shared the concern that the film not cause untoward effects such as dissuading the public from seeking medical help or turning away would-be biologists from a career in cancer research. But they did not always
agree on what constituted accuracy, and most were also keen to ensure adequate representation within the film of their own specialty or institution (and perhaps themselves), which led to complaints such as that one field of science was over-represented (generally not the field of the complainant), while another suffered by neglect (generally the field of the complainant). Such disciplinary and professional struggles thus found expression in disputes over the cinematic representation of science and shaped efforts to recruit scientists into cancer research in the late 1940s and early 1950s.

Working alongside these government scientists and physicians was the second group, the information officers—sometimes called public affairs officers—whose role it was to promote the agendas of their sponsoring organizations, rather as their counterparts in public relations sought to promote and protect businesses and corporations. The book pays special attention to this group, for it was the directors of the information offices of the NCI (Dallas Johnson) and the DNHW (Lt. Col. C. W. Gilchrist) who were the film's principal advocates. Yet both Johnson and Gilchrist often found themselves in a similar, awkward situation, caught between the demands of scientists, physicians, and other administrators and those of the filmmakers, both uneasy with their dependence on the other. The issue was true for both Gilchrist and Johnson, but was particularly important for Johnson whose office, the NCI’s Cancer Reports Section, had been created only recently in 1948, and who found herself at times struggling to keep both the NCI’s scientists, physicians, and administrators and the filmmakers happy. Johnson might have been hired for her knowledge of the public and how best to reach it, but such knowledge was not sufficient to manage the relations between sponsors and filmmakers. That would involve considerable political footwork, in particular because of the importance of this film to the future of the Cancer Reports Section in the NCI. The film was the largest and most visible project undertaken by the section, and if the scientists, physicians, and other administrators were not happy with the outcome, it would complicate other public education efforts and undermine the place of the section within the agency.

The problem for Johnson was twofold. First, NCI scientists, physicians, and administrators were sometimes divided over the film and, second, the filmmakers sometimes seemed tempted to disregard NCI advice, since this film was a one-off without clear lasting consequences. In Johnson’s view, the fallout from both problems would be borne by her Cancer Reports Section, and she therefore spent much of her time struggling to reconcile these differences, and to keep everyone on board. The Cancer Reports Section is the institutional origin of
what would become cancer communications at the NCI, and this book is the first account of its beginnings, and the importance of Challenge to its history. It also provides the first account of the origin of what would become the Office of Communications and Public Liaison at the NIH and its sometimes difficult relations with its NCI counterpart. It is a paradox of this story that Johnson sometimes had better relations with her counterpart in Canada, Lt. Col. Gilchrist, than with her counterpart at the NIH, Judson Hardy. A focus on the work of Johnson and Hardy helps to answer the question of why the NIH and the NCI felt it necessary to bring in specialists in communications and to create communications offices after the Second World War, while a focus on Gilchrist helps to answer the question of why pre-existing health communications efforts within the DNHW were reorganized after the war.

The chapters that explore the second project—making—focus on the production of the film itself, both its political and technical aspects: how the filmmakers sought to turn the biomedical commission into something they thought would work as a film. This commission was something of a coup for the Canadians, since until then educational films about cancer had been produced largely in the United States, and “Canadianized” for home audiences. Challenge both allowed the Canadians to trumpet their own expertise in educational filmmaking and helped the NFB to address some of its postwar political problems. The story of Challenge thus allows us to examine the development of cancer educational films in Canada. It also allows us to explore the political meanings of this film for the NFB at a time when it was trying to find a role for itself, fend off criticism from Ottawa, and develop new means of financing movies. One example of the latter was the creation of international coproduction deals where the NFB partnered with other organizations abroad: Challenge was among the first of such deals.

Challenge provides insights into these political and institutional struggles, and into the cultures of filmmaking within NFB and how they shaped this film. The task of the NFB filmmakers was to turn the sponsors’ goal of producing a recruitment film into something that worked cinematically for the intended audiences, but the sponsors changed, and the NFB adjusted its film to reflect this change. The film had started out as a commission from the Canadian DNHW, for which the NFB quickly produced a script. However, the NFB also saw the script as an opportunity to bring in international cosponsors, and when eventually they recruited the NCI, the script had to be revised. Despite Johnson’s worries that the NFB might disregard the concerns of NCI scientists, the NFB’s desire to develop coproduction deals meant that it saw the film as a very malleable project, one that had to address the interests and agendas of the sponsors. For
this reason, the script was written and rewritten many times, in part to make the film work better, but also to adapt it to the addition of a new sponsor.

For those readers who wish to know how the final version of the film turned out see Chapter 4. Table 4.3 gives an outline of the film’s final structure. You may also watch the film by following the NLM link provided above in “Viewing the Films.” But it is worth holding off and reading through the first few chapters before seeing the film, for this version was a long time coming. The final version was quite different than that in the first iterations of the script, and there was no certainty in the beginning that table 4.3 would be the outcome (for comparison with earlier versions see tables 3.1, 4.1 and 4.2). Not only did the nature of the film change during the rewrites of the script but it was further modified as the filmmakers got down to making the movie itself, deploying skills and equipment available within the organization. The NFB used its own staff to make the film, and they employed techniques and practices that had been developed at the NFB since the 1940s (along with one key imported animation technique). It is here that the richness of the archival record is telling. The chapters on this project—*making*—explore how the NFB brought together the skills of in-house animators, cameramen, editors, scriptwriters, actors, and others to construct the film, along with technologies such as an optical printer or a motorized zoom used in the creation of visual effects.

The book not only traces how the script was shaped by the political and institutional goals of the NFB and the technical skills of staff, it also shows how the sponsors’ desires to attract young recruits to cancer research were inflected through the approach to filmmaking of the founder of the NFB, John Grierson. For Grierson, the aim of documentary film was not to capture the phenomena that paraded before a camera, but to use the phenomena to reach a more abstract or generalizable reality, the essence of the age. For Grierson this meant that naturalistic representation had to be subordinated to symbolic expression. With an educational film such as *Challenge* this approach involved deploying a variety of symbols: the patient and scientist representative of these categories, the representation of the cell-as-universe, the use of light and darkness to symbolize knowledge and ignorance, the rain to symbolize environmental dangers to the cell, among others. Such symbols aimed to represent the patient as respectful, obedient, and subject to science; the scientist as a hero, explorer, and ordinary man; the cell as a universe or outer space to evoke the wonder of its biology and the huge scale of the cancer problem; and, in the case of the rain, the dangers of cancer in the environment. Such symbols would be evoked through the live action and the animation, and also in the musical score, the ambient
sound, and the narration. The music, for example, included evocations of cell division, embryological growth, the work of science, the wonder of nature, the fear of cancer, and the harmony of the body; the ambient sound invoked the calm hope of a hospital waiting room and the constant work of science; and the writers of the narration tried to hold these visual and aural symbols together, often ditching scientific precision for poetic expression. The film thus emerged as a complex of symbols and ideas that aimed to argue for a subjugation of the body and cancer to science. *Challenge* aimed to educate its audience on the science of cancer, while portraying cancer research as an enterprise filled with wonder and excitement.

It would, however, be a mistake to see this as simply a film about cancer or scientist recruitment. Some viewers complained that the film was stronger as a piece of art than as an educational tool. And, indeed, the filmmakers saw themselves as much in conversation with the arts as with science. They played with surrealism, neoromanticism, and Renaissance anatomy, and conjured up (aurally and visually) genres of science fiction and, fleetingly, gothic films among other cultural references. In so doing, they mixed the scientific with the artistic, sometimes the fantastical, so that the lines between science and the arts could be very blurred—something that the filmmakers wanted, but that also drew criticism from some viewers, who grumbled that they could not distinguish what was real and what was imaginary. Such issues raised a problem for the sponsors, who wanted the film to present scientific facts as then understood. For the filmmakers, adherence to facts alone would make for a very dull film that would fail to inspire. Nor would cautious didacticism allow them full rein to develop the symbolic expression necessary to make a broader argument about the relationship of the body, cell, and cancer to science.

The chapters on the third project—*packaging*—focus on efforts to target the movie at different audiences, both internal and external. In regard to internal audiences, the book explores how public affairs specialists and filmmakers sought to keep scientists and physicians within the sponsoring agencies on board both during the production of the film and after; in regard to external audiences, the book explores efforts to shape the reception of the movie through distribution, “press handling,” and by packaging the movie with other educational efforts, such as Lester Grant’s book, the teaching guide, and various pamphlets, radio talks, and other media productions. This is a story of how cancer communications worked in the late 1940s and early 1950s. Neither Johnson nor Gilchrist believed that the film could promote itself, and they developed a strategy to recruit the media and educational organizations into their efforts. Both had
Introduction

backgrounds in newspaper reporting and exploited their connections with the press and their experience with what worked in different media.

It is at this moment that the story moves beyond the sponsoring bodies and the NFB and explores how Johnson and Gilchrist sought to manage the media and the broader public they sought to reach. At times the media and public responded as they wished, but often they did not, and Johnson and Gilchrist sometimes found themselves struggling to deal with the fallout. Part of the problem was that public criticism played into the hands of those within the involved organizations (especially the sponsoring organizations) who had opposed the film, disagreed with the way it was promoted, or had other axes to grind. For these reasons, Johnson and Gilchrist could feel vulnerable to adverse public or media responses. Their packaging was always in danger of coming apart, and because of the film’s importance to their respective agencies, an unraveling could have had dire consequences for the role of health communications within their agencies. The scrapbook they compiled to provide guidance on how to run a successful health campaign seemed at risk of turning into an object lesson in failed logistics.

In many ways, the campaign around Challenge was unexceptional. Since their beginnings in the 1910s, health films had often been embedded within broader educational campaigns. These campaigns had been organized by a multitude of organizations—state and federal agencies, voluntary bodies, and commercial organizations such as pharmaceutical companies. Some campaigns developed within the sponsoring organization; others were farmed out to advertising, marketing, and other agencies or some combination of the two. Most had multiple stakeholders, including partnerships between state and voluntary organizations, advertisers and marketing corporations, educational and health bodies, and the many other organizations and individuals concerned with health and illness. These promotional initiatives had roots in the nineteenth century but came into their own in the twentieth, orchestrating a range of media to reach a mass audience: posters, pamphlets, exhibitions, lectures, theatrical performances, newspaper and magazine articles, lantern slides, and later film, radio, and television.13

Film was thus only one of a range of media technologies deployed in such campaigns. The scrapbook and other documentation for Challenge help to capture how such campaigns could work in the postwar period, their links to the development of federal governments’ health communications, and perceptions of film’s place within a broader media ecology, including the new technology of television. It also shows how viewers responded to the film, what they felt about the sponsors’ goals, and how the filmmakers had interpreted them. Bert Hansen has argued that the period from the 1880s to the 1950s was a golden
age for media representations of medical science, with growing public optimism about science and a high esteem afforded to medical researchers. Challenge reinforces this notion, with government agencies offering up science as the remedy for the dread disease of cancer and seeking to reinforce popular faith in the social utility of science. Yet for some critics this inspirational role was undermined by the film itself, and even its supporters did not believe it could provide all they wanted from it.

So far, I have written as if each of the three projects was distinct. In fact, they blurred into one another, sponsoring into making, making into promoting, promoting into sponsoring, and other combinations besides. For example, there was no hard line between sponsoring and making the movie. Sponsorship did not stop with the signing of the memorandum of agreement between the Canadians and Americans. NCI and Canadian scientists and administrators were keen to review the film at various stages throughout production, and their public affairs officers supported them in this role, in part to secure their own (sometimes) tenuous positions within these agencies, in part to ensure that the film reflected current scientific practice or knowledge, and in part to promote their agencies’ perspectives. But it turned out that it was quite unclear where the boundary between advice and interference lay, nor was it clear what should happen if there was disagreement among scientists or administrators. Scientists and administrators felt free to offer advice, but not all of it was consistent—some of it promoted themselves or their causes—and it sometimes strayed into areas that the filmmakers regarded as their own. At the same time, the filmmakers found themselves caught unawares, such as when it turned out that the scientific practices they had filmed on location were different from those of scientists who reviewed the film, which raised the question of whether any such film could be said to represent current scientific practice. Filmmakers were also concerned that scientific or administrative pressures from the sponsoring agencies would result in a cinematic disaster, albeit one that was scientifically or medically accurate and in tune with the sponsors’ goals. At various times, the filmmakers would note, and occasionally plead with the sponsoring bodies, that what worked as science did not always work as film. It was at points such as these that the public affairs officers could despair. They were some of the strongest promoters of film within the sponsoring agencies, but they feared they could not control powerful scientists, physicians, and administrators within their own organizations, nor the outside filmmakers. At times they worried it could all turn out to be a fiasco.

David Kirby has argued that the science adviser in Hollywood films was part of a broader film system in which natural phenomena, scientists, and research
spaces were portrayed in ways that made it difficult for audiences to separate fact from fiction, even as scientists themselves criticized films for confusing the two.\textsuperscript{15} In this case, the sponsoring agencies adopted an institutional mechanism to address this confusion. They turned to an outside organization, the Medical Film Institute (MFI) of the American Association of Medical Colleges, which had been created after the war to help determine how to assess the value of films in medical training and public health education. Its original involvement with Challenge was as a convenient means by which the NCI could channel funds to the Canadian filmmakers, but it rapidly took on a broader role of mediating between the filmmakers and sponsors. Under its leader, the public health official David Ruhe, the MFI brought together physicians, public health officials, and scientists who also had experience and knowledge of film. They could speak to the scientists and physicians as fellow scientists and physicians, and to the filmmakers as experts in film, and so provided a means by which the tricky boundary between film and the worlds of science and medicine could be negotiated. Yet the science advisers themselves played a role in introducing what critics claimed were inaccuracies. An animation technique developed by one of the science advisers was a focus of such criticisms, and elsewhere the science advisers pleaded for the inclusion in the narration of phrases judged to be inaccurate. For the advisers this was in part to help create a sense of awe at the worlds of the cell and the work of science, to help the filmmakers produce something that would work as a film and keep audience interest, and to situate science and the natural world within a context and tone that would stimulate and inspire.