PART 2

MAKING
Baiting the Hook

THE NFB HAD BEGUN work on the film before the Americans got involved, commissioning a script from Maurice Constant, a member of its staff, soon after the Canadian Department of National Health and Welfare had allocated CAN$20,000 to the project. The involvement of the Americans changed everything. Suddenly the picture’s budget jumped to $40,000, and the NFB had a new partner (the Medical Film Institute of the AAMC), and a new sponsor (the US National Cancer Institute) in addition to its existing sponsor, the Canadian Department of National Health and Welfare. Constant’s script was central to this transformation, for it was the bait with which the NFB caught and reeled in the NCI. The July 1948 meeting where Bernard Dryer showed the script to Dallas Johnson at the NCI was no accident. Dryer was doing the bidding of the NFB, a fishing exercise to tempt the Americans to cosponsor the film, and so help the board address the difficult financial and political position it faced after the war.

There was, however, no guarantee that the Americans would come in, so when he started Constant was faced with two competing demands. He had to produce a script that might appeal to the Americans, but—if that did not happen—he also had to produce a script that would address Canadian concerns, including the problem of Canadian scientists abandoning the country. The two demands were an uneasy fit, for the Americans were unlikely to sponsor something that addressed Canadians’ national concern about the threat to their cancer research posed by the United States, while the Canadian sponsors were keen to ensure that such a message come across should the film be a solely Canadian production. Constant’s script might have been the bait to tempt the Americans to support it, but it also had to ensure that the Canadians remained on the hook.

Ralph Foster and Maurice Constant

A key individual in the commissioning the script was Ralph Foster (1911–95), the Deputy Commissioner of the NFB. As second in command, Foster would
take an important role in guiding the movie through production, and it was he who would appoint Maurice Constant to draft the first script. So far in this book, I have emphasized the roles of American and Canadian health and cancer agencies in promoting this film. It is possible, however, that they would never have come together without Foster, and Foster had different agendas than either the Canadian or American health agencies. His goals were to encourage better cooperation between the NFB and the United States, to fend off allegations of Communist subversion within the NFB (see chapter 4), and to develop NFB coproduction efforts. The decision by the Canadian Department of National Health and Welfare to put CAN$20,000 into a cancer film provided an opportunity to push all these agendas.

Born in Toronto, the son of a wholesale grocery merchant, Foster had a career in newspapers before he joined the NFB, including taking charge of the illustrations for the Star Weekly. With this on-the-job training in design, in 1942 he was hired by the NFB first as Director of Creative Skills, and then from September 1, 1943, as Chief of Graphics. He took his first venture into film production when he directed the newsreel and photographic recording of the First Quebec Conference held August 1943 between Winston Churchill and Franklin D. Roosevelt, and hosted by the Canadian Prime Minister, Mackenzie King. Then in June 1944 he moved to London as war correspondent for the NFB, in charge of newsreels, and was the NFB liaison officer with the Canadian armed forces. The following year he was loaned to Australia to help the government there establish a film board modeled on the NFB.²
### Table 3.1. The Structure of Maurice Constant’s June 1948 script

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<th>Sequence</th>
<th>Brief description of action</th>
<th>Live action</th>
<th>Animation</th>
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| 1        | Doctor’s office            | 1. Off-camera woman is examined for cancer.  
2. Husband [?] of woman walks to the window and stares at the starry sky | Live action | Animation/Live action |
| 2        | Historical sequence        | 1. Camera moves into interstellar space, traveling slowly among the galaxies, nebulae, constellations, and celestial bodies.  
2. The celestial bodies turn into a Zoroastrian sky, then emerge depictions of the worlds of ancient Egypt and Greece and the Middle Ages, before the camera spins down to a map of the American continent as misunderstood by early geographers and the “mists and phantasm of the past,” all sequences interspersed with (live-action?) scenes illustrating the state of medicine during these periods.  
3. Now a microscope is seen in closeup, seemingly aimed into space before a burst of white light wipes everything else off the screen. The eyepiece forms a circle that narrows to a frame within which microscopic structures in movement come into focus. (The effect intended suggests the idea of the microcosm against the macrocosm.)  
4. Something white fills the screen. The camera backs away to medium distance to reveal a lab-coated scientist bent over something that turns out to be a microscope. | Animation/Live action | Animation/Live action |
| 3        | The cell-as-universe/Normal and abnormal growth | 1. Framed within a circle is a stylized and highly idealized version of a living cell suggestive of celestial bodies moving in interstellar space.  
2. Animation sequence of conception, embryonic growth, cell division, and abnormal cancerous growth concluding with a white sheet drawn over a body. | Animation/Live action | Animation/Live action |
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| **4 The work of science** | 1. The scientist asks what is this thing called cancer; an aberration of life itself.  
2. Scenes that illustrate the deadly consequences of cancer in humans, its antiquity, and the various organisms affected by it.  
3. The hope that science can solve the problem, and the “billion (?)” dollars put toward this goal annually.  
4. Various illustrations of science’s approaches to the cancer problem: experiments on mice, tumors grown in eggs, tar on a rabbit’s ear, and the work of chemistry, biochemistry, bacteriology, genetics, physics.  
5. Conclusion: “We are delving into a problem [as] complex as life itself.” |
| **5 Doctor’s office/research into diagnosis treatment and prevention** | 1. What can doctors do for those with cancer?  
2. Research to find a reliable test for cancer.  
3. Statistical research.  
4. Discussion of how current knowledge about the cancer cell has led to research/interventions against cancer.  
5. Costs of research/the need for funds to solve the cancer problem |
| **6 Concluding sequence** | 1. Scientist: “As you can see, this is not a matter only of satisfying a philosophic or scientific curiosity. It is a matter of life and death!” |
Foster returned to Canada in 1947 as Deputy Film Commissioner, supervising the production and distribution of NFB films and visual aids. He became involved with the Canadian Cooperation Project, a plan to increase the flow of American dollars into the country by informing the American public through film and other means of Canada’s need. He also began to develop the NFB’s approach to international coproduction. The NFB’s founder and first commissioner, John Grierson, claimed that the NFB was among the first documentary film producers to provide an international approach to peacetime themes, working with the United Nations (UN) and UNESCO among other bodies. International coproduction was a mechanism by which international projects could be developed; since Challenge was among the early coproductions that Foster was involved in, he used it to work out how an international coproduction approach with the Americans might work more generally. During his involvement with the film, Foster would cooperate closely with the various interested parties, and it is clear from the tone of some of his letters that he developed personal friendships with some of his American collaborators, especially Dallas Johnson (with whom he shared an interest in issues of publicity and graphic design) and David Ruhe at the MFI (with whom he exchanged concerned husband notes, since both their wives were pregnant at the time).

But in much of this was yet to come. The beginning of an arrangement with the Department of National Health and Welfare was emerging, and with the Canadian cancer organizations. These bodies wanted the projected film (or films) for specifically Canadian purposes: to promote Canadian (cancer/biological) research, and to correct the dependence of Canadian cancer campaigns on American educational films. Foster, however, had a different agenda. He saw the film or films as an opportunity to further his internationalist efforts, and the commission from the Canadian health agencies would provide a way of doing this. Specifically, he realized that the Canadian commission provided an opportunity to develop a treatment/script that could then be used to entice the Americans. It is probably for this reason that he assigned Maurice Constant to write what became the June 1948 treatment, hoping to use it as a means of opening discussions with potential American collaborators.

Maurice Constant had only recently joined the NFB and was not an obvious choice for scriptwriter given his lack of experience. Following an education at the University of Toronto, Constant (1914–2002) had had a varied career: he joined the Canadian Officer Training Corps, the Socialist Zionist organization, Hashomer Hatzair, and the Communist Party, fought in the Spanish Civil War, and flew for the Royal Canadian Airforce during World War II. When the
war ended, Constant returned to the University of Toronto, graduating with a Bachelor of Arts degree on June 6, 1947. After graduation he claims he had two job offers, one to head the Biochemistry Division of the Ontario Science Foundation, and the other from the NFB. He joined the film board on November 27, 1947, eight days after the Department of National Health and Welfare was authorized to spend CAN$20,000 on a cancer film. Cancer Research (as Challenge was first called) was one of his first scripts. He would remain at the NFB until September 24, 1957.

Constant’s appointment to the NFB coincided—and was perhaps the result of—a growing feeling on the production side of the NFB that the film board should put more emphasis on science in their films. Challenge/Cancer Research was among the early efforts in this direction, and Constant’s background in science (albeit limited: he had taken science courses during his first stint at the University of Toronto) perhaps partly explains why Foster selected him as the scriptwriter for this production, given the technical issues involved. But doubts remained about whether he had the experience necessary to write the sort of script that was needed either for the filmmakers to work with, or for Foster’s political purposes. Such concerns seem to have grown over the next year, even after Constant produced the first version of the script for what would become Challenge. Thus, when Bernard V. Dryer gained an impression of him as “a combat veteran on the film front,” Foster was prompted to issue a corrective: “I wonder what he said to you to make him sound like a combat veteran on the film front. It must be the grim experience he underwent in the research field, because in these parts he qualifies as a youthful zealot with no calluses.”

Constant was a problematic appointment as scriptwriter for Cancer Research/Challenge. He had a scientific background, but not the experience of scriptwriting to do the sort of job that would work for all the agendas behind this film. By June 1948 he had given a copy of the treatment to Foster (actually, a detailed script, which is the term I shall use for it: a treatment can be a detailed scene-by-scene breakdown as this is, or a shorter prose piece written before the first draft of the script), who was beginning to plan to use it to attract American cosponsors. But it was not a perfect script for this purpose. Perhaps Foster had not informed Constant of his ultimate goals, or perhaps it was the inexperience of a “youthful zealot.” Whatever the cause, Constant’s script gave little attention to cancer research as an international endeavor that included both Americans and Canadians. On the contrary, it tended to reflect the national fears that Canadian scientists were being tempted abroad by better pay and facilities. The message would work well for the Canadian sponsors as they initially imagined
the film. It would not, however, help Foster in his ambitions for international collaboration, unless the national sentiments were ditched, and other themes given more emphasis.

The June 1948 script

Constant’s 1948 script (table 3.1) opens in a doctor’s office at night. A well-dressed man is listening to voices coming from behind a white screen over which is thrown a stethoscope. He is tense. A woman’s voice—perhaps his wife’s—is heard from behind the screen “It’s only a lump, Doctor. There is no pain. But it kept getting bigger and bigger... It doesn’t hurt, Doctor. Is it dangerous? (Pause) Is it a tumor? Is it cancer?”11 The doctor’s disembodied voice recommends a biopsy.

The man gets up, walks to the window, and stares out at a starry sky. The camera slowly moves up to the window. The sky fills the window, and the camera moves through the window into the sky and eventually into interstellar space. It travels slowly among the celestial bodies—galaxies, nebulae, and constellations—which, the script informs us, become the motif for a historical journey of attempts to answer the woman’s question: “Just what is it, Doctor? What is this thing?”12 We move through treatments of Babylonian, ancient Greek, medieval and Renaissance efforts to answer the question. The stars initially form a Zoroastrian sky—an astrologer’s vision of the heavens. The stars appear linked by the outlines of the mythological figures that peopled the skies during the Babylonian period. They then reconfigure to show ancient Greek figures, then a Gothic arrangement of heavenly lights, and then we return to interstellar space before spinning down to the American continent, depicted at first as “misunderstood”13 by early geographers, before the image resolves and the outline of the geographical shape of the continent as depicted in the 1940s emerges.

Each of the preceding starry images accompanies a historical account of changing understandings and interventions against cancer. Each starry sky dissolves into a world view—the Egyptian world with pyramids, priestly incantations, and amulets against disease; the Greek world with ancient surgical instruments; the world of the Middle Ages with an unsanitary old hospital, and dirty, bloody hands thrusting the crude surgical instruments of the period toward the patient. All these worlds are blurry, symbolic of ignorance and darkness. The Egyptian world is flat, its edges fading to darkness; the Greek world is Homeric, flat, surrounded by dark waters which fade to nothingness; the medieval world is also flat, reminiscent of a three-dimensional model of a medieval geographer’s
chart with wondrous creatures filling in the geographical blanks. This imagery, the script informs us, is intended to draw a parallel between geographical ignorance and ignorance of the body and disease culminating in the rectified map of the American continent mentioned above.

Eventually the screen is filled with a montage, a mass of material representing what the script calls the mists and phantasms of the past (astrological charts, incense, ancient medical instruments) against a background of a microscope signifying the beginnings of modern science. We look into the microscope and a burst of white light blasts everything on the screen away, and microscopic structures come into focus, surrounded by the night sky. The sky, which once signified the ignorance of the past, is now juxtaposed against the microscopic world—the effect intended, the script tells us, is the microcosm against the macrocosm, drawing a parallel between the inner world of the cell and the outer world of interstellar space. Something else white appears and fills the screen. The camera backs away to reveal a white-coated scientist who at the climax of the historical sequence looks up from the microscope and says, “This piece of cancer tissue is made up of living cells.” We have returned to the biopsy the doctor recommended in the opening scene, and the significance of the scientist’s statement is punctuated by a succession of triumphant, enthusiastic chords. Triumphant not because the woman has cancer, but because it is now understood by science.

Now we shift from live action back to animation. Framed within a circle the viewer sees something suggestive of celestial bodies moving in interstellar space. The scene, the script tells us, reminds us of the starry skies that have driven the film’s story so far. This is not interstellar space, however. Instead, it is a stylized and highly idealized version of a living cell and its contents. Whereas the earlier imagery of the stars emphasized the ignorance of the pre-scientific world, the image of the cell-as-universe is used both to show modern medical knowledge of the inner workings of this world, and the huge scale of the problem of cancer, as the narrator notes “Look at these vast spaces! This is not a universe of stars and planets, but the universe within a single living cell. It takes 10,000 of these to make the end of your finger.” The film shows us parts of this universe—the nucleus, the mitochondria—before shifting to a growth theme—beginning with sperm and egg and cell division, differentiation, and the emergence of organs—until we see the normal body and its parts working harmoniously. The music, the script tells us, is to comment on and mimic the development theme. Its rhapsodic tone evoking joyous, healthy normal life. As each organ is mentioned, a rhythm peculiar to it is to be heard in the music (blood, heartbeat; nerve, staccato tingling.)
The mood now changes. “Ominous discordant chords; a harsh, sinister implacable, perversion of the ‘growth’ rhythm—representing the uncontrolled malignant growth of the cancer cells. They build up tension with increasing drum-beat tempo.” We now view abnormal growth until finally the body is killed in a climax of rhythm and cacophony. Eventually there is silence, except for the cancer rhythm, and then complete silence: the rhythms specific to each organ stop one at a time. The music resolves into the music of the spheres, and we see a shot of a white sheet as it is drawn over the body. The scientist now asks a more precise version of the woman’s question: what causes normal cells to go wild, out of control? The woman’s voice returns with the human anxieties behind the story “Is it dangerous, Doctor?” “Is it cancer, Doctor?” “The tone of her question is paralleled and imitated in the whining and howling of a dog,” a segue into a discussion of cancer in animals.

Next the mood shifts to one of hope: the solution to the cancer problem through the scientific method, a sequence accompanied by a montage of technical civilization and an example of the scientific method. The music begins a “quest” rhythm, “suggesting a hunt (‘detective story’ type of thing),” as the script puts it. We approach a group of men in white coats clustered around something that is hidden from us. Suddenly—with shock effect—we are given a closeup of a tumor, and the camera moves back to reveal the person who has the tumor. (The instruction is: “Use a tumor which is typical but not too horrible to demonstrate.”) We now see another tumor, this time on a mouse. There follows a demonstration of how cells removed from the mouse can be kept alive in tissue culture or transplanted into other animals for research purposes. Then there are discussions of agents such as tars and other chemicals that can be used to cause cancers in animals, of chronic irritation as a cause of the disease; studies of radiation and biochemistry to understand the cancer cell; the role of genetics and research on heredity, mutation, and the effects of the atomic bomb; and the role of viruses revealed by the electron microscope and investigations on the milk factor: a reference to the 1936 discovery that a cancer-causing agent, called a “milk factor,” could be transmitted by mouse mothers with cancer to young mice while nursing. This section ends with a shot of a stormy sky and the commentator noting, “We are delving into a problem [as] complex as life itself.”

We return to the original opening scene of the doctor’s office—the music now signifies “suffering humanity.” The woman’s voice asks “Doctor, what can you do for me?” and the focus of the narrative moves to research on cures. The music shifts to an “Energetic ‘hunt’ music, quick, alert, tense; suggestive of hounds following a spoor.” The narrative focuses on the need for a simple, cheap reliable test for cancer; on the use of statistics in identifying causes of cancer; and on
efforts to find an agent that will selectively attack cancer cells and leave normal ones unaffected. There is discussion of the possible uses of hormones, radiation, and chemicals in therapy, all of which evolves into an account of the huge scale of the effort against cancer—conferences, journals, dollars—and an appeal that echoed the concerns of the National Cancer Institute of Canada:

It’s no use fooling ourselves. If we are to keep our young scientists—one of our country’s greatest assets—from migrating to better paid positions, from going to places where they can find more and better equipment to work with, where they can find better conditions of work, then we must provide them with proper equipment, security, and a reasonable standard of life. This is also our job and yours. . . .

By “yours,” Constant meant the audience’s job.

Constant also provides an alternative conclusion that focuses on the humanitarian value of cancer research rather than on concerns that Canada was in danger of losing the best scientists. A coda develops this theme, reprising the human and intellectual concerns about cancer with the scientist concluding, “this is not a matter only of satisfying a philosophic or scientific curiosity. It is a matter of life and death!”

**Quests**

It should be clear from this description that the film is much more than a plea for greater resources for Canadian cancer research. It sought to evoke the triumphs of modern science more generally, the threat posed by cancer, and the role that modern science might play in its defeat by making the body, cell, and cancer subject to its interventions. It will be recalled (chapter 2) that the Department of National Health and Welfare was torn between making a film about cancer research and treatment and one that was intended to raise money. The script included both themes. It focused on research but concluded with an appeal to the audience for support (though the nature of the support is not spelled out, nor whether it should come through philanthropic donations or taxes or both). It is also different from the sorts of cancer education films that had been made prior to this. There is little or no reference to early detection and treatment, the staple of previous anti-cancer films. Instead, it subordinates the treatment story to that of research.

The script’s narrative thread is framed by the human consequences of cancer: It starts with a melodramatic recreation of a diagnosis of cancer at the beginning and ends with an account of the human costs of cancer. In between, the story is
a progressivist tale from dark days of human ignorance and superstition to the light of modern science and how it has been applied to cancer. The story aims to portray cancer as a field of urgent humanitarian need and great intellectual excitement, and to evoke wonder at the complexity of the body and nature, admiration for the ingenious ways in which scientists and physicians attempt to understand and combat the disease, and amazement at the vast scale of the problem.

The film is organized around several quest narratives. One quest is the interstellar journey from ignorance to a materialist scientific world view (something that Constant advocated as a socialist and scientist). A second quest is the practice of science itself (something the scriptwriter imagined would be evoked by hunt themes in the music), which, the script suggests, provides the way to understand and defeat cancer. A third quest is the journey within the normal cell, with its vast spaces akin to the interstellar journey shown earlier in the movie. Finally, there is the quest of the woman, from her discovery of the lump through the biopsy to hope. The scientific quest (together with the emergence of a scientific materialist world view) is crucial to all the others: it is central to the quest for the cure for cancer, to the woman’s journey through cancer to hope, and to the knowledge necessary to travel through the cell. Note also the significance of music and sound to these quests: the music moves from ominous discordant chords (signifying cancer), to the hopeful “quest” rhythm, and to the hunt music signifying science and medicine’s quests to understand cancer and to find a cure.

Constant’s narrative is marked by a play on popular interest in space fantasies with its parallels between interstellar and intracellular space. Many space fantasies in the 1940s alluded to Cold War anxieties about Communism, a subject that Constant as a Communist or former Communist avoided, even as the NFB sought to distance itself from accusations of Communist infiltration. He also made only the briefest of references to Cold War concerns about atomic annihilation, with a fleeting mention of the effects of the atomic bomb. Instead, much as advocates sought to turn American and Canadian enthusiasm for space fantasies into something that promoted an American space program, so Constant sought to turn this enthusiasm into something that would promote cancer research, turning the viewer (and more clearly in later versions of the script, the scientist as well) into a space-age explorer, travelling through the cell as if it were outer space, with constellations of cytosomes and centrosomes passing by. As in space-age fantasies, Constant took the viewer places that were then impossible (for most viewers, in the case of this film) to visit in real life, both inside the body and in outer space. This imagery would also give a visual indication of the vast size of the cancer problem, and also of the opportunities available to the viewer/cancer
researcher who is intrepid enough to venture into this strange world, both of which would be echoed in some of the publicity around the film (figure 3.2).

The script also reveals Constant’s struggle to balance hope with shock or disgust. It will be recalled that the Canadian cancer societies were concerned about the extent to which fear was used in American-produced educational films, worried that it was not appropriate for Canadian audiences, and wanted an approach that would emphasize hope. Constant’s script seeks to promote hope, and science as the means to this hope, but the narrative drive is also created by the anxiety and fear of the woman patient, her animal-like whine, and the shock of viewing a tumor. But recall the note in the script: “Use a tumor which is typical but not too horrible to demonstrate.” Constant wanted to shock, but not to shock so much that people would turn away from the film, an old concern that had shaped cancer education films since the 1920s. Here shock was to act as a narrative gateway to the sequences that depict scientific approaches/solutions to the cancer problem, signaled by the transition from human tumor to mouse tumor. The danger was that the shock or disgust evoked by the tumor might overwhelm the hope evoked by such solutions and approaches—hence the instruction about gauging the horribleness of the growth.

Constant’s narrative was also marked by a play on older associations between women and nature as when the tone of the woman’s anxious question “parallels and imitates” the whining and howling of a dog. But where anti-vivisection propaganda could identify women with animals abused by male science, in this

**Figure 3.2.** Traveling in outer space or the inner world of the cell: an illustration that accompanied a public announcement of the release of the film. Source: *Cancer Control Letter*, no. 28 (April 28, 1950): 1.
script animal experimentation is to save women with cancer. No place here for those critics who wanted to promote feeling rather than the scientific method as a guide to understanding, nor for the assertion that women’s special affinity to the world of nature allowed them to critique the experimental method. Experimentation, including on animals, in this version of the script, would lead to the solution to the cancer problem.\

The story would change quite dramatically after the Americans got involved. Foster would no doubt have expected such changes, since he wanted Constant’s script to open discussions about coproduction, which would mean that others would have a say in the message the movie was to promote and how it would be told. In addition, his doubts about Constant’s skills as a scriptwriter would only grow over the next few months, and others would be brought in to refashion the script (though Constant retained the title of scenarist). Later scripts would therefore drop some of the themes in the June 1948 Constant script and transform others: The “ignorance of the past” theme would disappear, and with it the progressivist history of the emergence of a materialist scientific world view; the growth theme and its cancerous/malignant perversion would remain, but the cancer no longer killed the body and the sequence in which a white sheet was passed over a body was abandoned, or perhaps transformed into the white sheets of a hospital bed, and the hope they embodied; the links between maps, geography and the cell-scape or body-scape remained in some of the later iterations of the script, but do not appear in the final version of the script/film; the cell-as-universe theme survived, though the filmmakers struggled to figure out whether to hammer the home the parallel with space travel by including an explicit treatment of outer space in the film alongside the inner space of the cell; the human story of cancer was retained in different versions of the script but changed significantly, and lost the melodrama of the opening scene in Constant’s script; the patient’s quest theme would also be transformed, as would the “interstellar space theme” and the woman’s fear of cancer—indeed the central patient herself was transformed into a man. New writers and new sponsors meant that the script was malleable, constantly changing with changing interests and agendas.