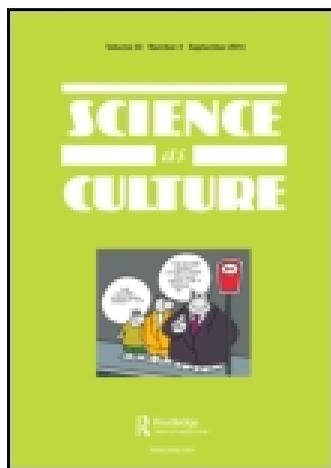


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City under the Ice: The Closed World of Camp Century in Cold War Culture

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ABSTRACT *Located on the beeline between the two nuclear superpowers, Greenland took on vital strategic importance during the early phases of the Cold War. As part of its polar strategy, the USA constructed several bases in Greenland. Camp Century, known as ‘City under the Ice’, was an experimental-military American city built entirely inside the ice sheet in 1959–1960. A 225-person, nuclear-powered army base, Century was the precursor for a much larger installation of intercontinental ballistic missiles (which never materialized), but was also used to project popular images of techno-scientific control, nuclear containment, and American values into Cold War American culture. Applying Paul Edward’s closed-world metaphor to photos, film, books, and articles about Camp Century enables us to see both the strengths and the fragility of public discourses about the camp. Century was depicted as an outstanding example of man’s never-ceasing quest for knowledge, as the epic conquest of the harsh Arctic environment by US Army engineers, as an Arctic sword and shield against the Soviet aggressor, and as a friendly collaboration between the USA and Denmark (in 1953, the former colony of Greenland became part of the Danish Realm). In the end, Camp Century had to be abandoned due to the glaciological forces of the moving ice sheet which crushed the tunnels, but also due to changes in Cold War politics and the political difficulties underscoring nuclear installations on Danish territory.*

KEY WORDS: Greenland, Cold War, US Army, Camp Century, popular culture

Sad and hurt. Chuckie’s mind began to wander to Greenland, his previous posting, not a bad place to survive the breakup of a marriage. His human discontents were muted in the icy mists and the whole blowing otherworld of

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whiteouts and radio disruptions and unrelenting winds and total cold and objects that did not cast shadows and numerous freak readings on compasses and radar scopes and the BUFF that crashed on an ice sheet with live nukes aboard, anomalies of the eye, the mind, the systems themselves, and the experience made him sense the ghost-spume of some higher hippie consciousness. Or, maybe Greenland was just a delicate piece of war-gaming played in some defense institute, with hazelnut coffee and croissants. (DeLillo, 1997, pp. 610–611)

Introduction

In May 1959, after more than a year of preparation, a small party of US Army engineers conducted the final search for a site for Camp Century, a nuclear-powered, scientific-military camp to be built under Greenland's ice cap. Colonel John H. Kerkering, Commanding Officer of the US Army Polar Research and Development Center, and Captain Thomas C. Evans, who was in charge of the camp's construction, led the search party. In the opening scene of a motion picture film about Camp Century, produced by the US Army, we see Kerkering and Evans, wearing US Army polar gear and RayBan Aviator sunglasses, confidently looking out over the ice cap (United States Army, 1961). They stand in front of the two Polecats, or Arctic Personnel Carriers, which took them to the site. Evans does a final octant reading for the camera (this close to the North Pole, magnetic compasses are useless). His voice-over explains the technicalities involved in locating a proper site:

We needed a flat surface, a level with less than one degree of slope. This would minimize construction problems by enabling us to keep all of our tunnels on the same level. We finally picked this plateau, a smooth, white plane of ice for as far as you could see. This was the closest location to Thule, our supply base, which would not be affected by the summer thaw. That first day, we set our flags, marking the boundaries of the camp.

US military presence in Greenland dates back to World War II, when the US Government signed an agreement with the exiled Danish ambassador Henrik Kauffmann in Washington, DC relating to the defense of Greenland. During the early phase of the Cold War, Greenland, situated on the shortest route across the Arctic from Washington to Moscow, and almost equidistant from the two centers of the Cold War superpower struggle, became vital to North America's strategic air defense (Archer, 1988; Martin-Nielsen, 2012; Petersen, 2011, 2013). Through the 1950s, Greenland's strategic importance gradually increased as tensions between the USA and USSR grew. 'We must not be surprised if the

Soviets suddenly cross the snow-covered, rugged Arctic with their modern engines of war,' stated in 1958 a joint report by the Arctic Institute of North America and the Office of Naval Research, a key Army think tank, patron and contractor based in Montreal (Arctic Institute of North America & Office of Naval Research, 1958, p. 41). Emphasizing the need for a continued research and development effort focused specifically on arctic conditions, the report concluded:

Science will permit our use of Greenland as an Arctic sword and shield—a mighty bastion of deterrent power essential to the NATO concept. (. . .) The Arctic's true military potential can only be transformed to the dynamic by means of studies specifically oriented to the problem. Modern technology will make possible military operations in the Far North—under the ice, on the ice, over the ice—previously inconceivable. (p. 41)

US Military Appropriation of Northern Greenland

Camp Century was not the first attempt to appropriate Northern Greenland for modern warfare during the Cold War. The construction of Thule Air Base, the US Armed Forces' northernmost installation and, at the time, the largest engineering venture ever undertaken in the high Arctic, began in secret in 1951, and the base immediately became a key node in the American empire of bases (Gusterson, 2009; Lutz, 2009). The decision to build Camp Century was part of the US Army's new concept for polar military engineering. Transforming the snowy wasteland into a veritable city equipped with every convenience from library to warm showers, the Army saw Camp Century as a stepping-stone to increased military presence on (and, quite literally, in) the icecap.

Most dramatically, in response to the Air Force's Minuteman Intercontinental Ballistic Missiles and the Navy's Polaris Submarine-Launched Ballistic Missiles, the Army proposed Project Iceworm, a mobile deployment of a modified version of Minuteman, known as Iceman, under Greenland's icecap (Weiss, 2001; Petersen, 2008). Iceworm was envisioned to cover 135,000 square kilometers with 600 Iceman missiles able to be fired at 2,100 different launch points. An extensive network of tunnels and rails would keep the missiles in constant motion. Although it received favorable reviews by the State Department and Department of Defense, in the early-1960s, Iceworm was shelved due to 'a mixture of technical problems, inter-service rivalry, and political second thoughts, both as to Iceworm's feasibility as a NATO project and its acceptability with the Danish Government' (Petersen, 2008, p. 87).¹

Camp Century, however, was more than a techno-scientific, military camp, designed to accommodate engineers, scientists, and military officers in their quest to pursue a broad combination of engineering, scientific, military, and political agendas. It formed part of a campaign to publicize and legitimize the Army's efforts in arctic engineering and homeland security. Camp Century was

featured widely in US popular culture, fusing security policy with global dominance and technological advances. Public images of the enactment of the American way of life in a hostile environment by means of techno-science served to link the militarization of Greenland to the superiority of the mentality and enterprise of the so-called Free World. Camp Century not only was a bastion for the expansion of NATO deterrent forces onto (and into) the ice cap, but also a projection of the power of arctic military engineering back into the public imagination.

This paper engages historically and conceptually with popular images and stories of Camp Century. In particular, an attempt is made to situate Camp Century firmly in Cold War culture and international relations. The notion of closed-world discourse introduced by Edwards (1996) will be evoked in order to interpret Camp Century as a reflection of US security policies and as an enunciation of American values and identity in an antagonistic setting. What forms of control were developed by Camp Century? What was its symbolic role in the USA and in Denmark? What difficulties were encountered in communicating Camp Century as an all-American outpost placed in an extreme arctic environment?

Closed-World Discourses in Cold War Culture

Closed-world discourse refers to a heterogeneous assemblage of scientific knowledge, military technology, political narratives, and cultural imagery, designed to contain the nuclear superpower struggle of the Cold War, both technically and symbolically. Edwards (1996) first used the concept in an effort to understand the development of computers and their military, cognitive, and cultural implications during the Cold War. Capable of monitoring, calculating, and simulating people and objects in the real world, computer systems translated the will to profit, power, and domination into technology. At the same time, computers and communication theory were used as metaphors for how human minds, organizations, and societies worked (or could work, given the right measures). The virtual reality of computer worlds and cybernetics provided leaders, managers, and engineers with a vision of control, although, as recent scholarship has emphasized, cybernetics was much more than a tool of control and dominance (see, for example, Dunbar-Hester, 2010).

Closed-World Networks

Essential to closed-world discourse is the projection into popular culture of certain images and metaphors of Cold War warfare. Closed worlds include representations of bounded techno-scientific systems that join together humans and machines to serve military purposes. They link military strategy with the logic of research and development, according to which obstacles and enemies are to be conquered by means of more knowledge and technological innovation. In closed-world imagery, techno-science delivers command, control, and

communication, all of which are necessary to security policy, military operations, and research and development.

Techno-science translates real-world warfare with all its messiness and unpredictability into virtual or semi-virtual war-gaming where actual enemies and operations are present in an abstract and highly symbolic form. Closed-world discourse involves more than computer systems and popular metaphors of computer-based automation. Closed worlds are highly constructed, confined spaces in which external conflicts are represented and handled by the mediation of techno-science. The 'physical' closed world aims to contain the conflict, even though the final solution, e.g. nuclear annihilation, would mean the destruction of the closed world. Thus, as Edwards (1996) argues, the closed world is claustrophobic and inherently instable:

A 'closed world' is a radically bounded scene of conflict, an inescapably self-referential space where every thought, word, and action is ultimately directed back toward a central struggle. It is a world radically divided against itself. Turned inexorably inward, without frontiers and escape, a closed world threatens to annihilate itself, to implode. (p. 12)

The physical closed worlds discussed by Edwards (1996) are the war rooms that served as 'centers of calculation' for the dispersed network of US monitoring units and military forces, spread out all over the globe on aircrafts, warships, radar stations, satellites, and military bases (on centers of calculation in techno-science, see: Latour, 1987, pp. 232–247). The information collected and the knowledge produced by this 'networked empire' enabled the US to tie together its many allies, but also to generate new modes of knowing that would be used by allies and potential allies to build their own networks modeled on US ones, thus extending the networks even further (Oldenziel, 2011). In the words of Engerman (2007), American knowledge was knowledge *for*, knowledge *of*, and knowledge *as* global power. This knowledge always flowed inside carefully constructed, yet widely dispersed, closed worlds of information, calculation, and communication. It was global to the extent that the US networks of power and knowledge spanned the globe.

Popular closed-world discourses expanded the scope of US power/knowledge networks, partly by facilitating their reentry into American culture. They provided the armed forces with the possibility of confirming to US citizens that the closed world of nuclear weapons detection and retaliation really worked as intended, containing enemy activities. Closed-world popular discourse, as we shall see in the case of popular articles, books, and films about Camp Century, presented the world as contained by US cultural and military forces. And as they were consumed primarily by an American audience, closed-world discourses in public culture were inherently self-referential. They sprang from the military's intention to establish homeland security based on fear of what the enemy was capable of doing, and they referred to, or tried produce, the belief that the closed world of

US techno-culture was the basis of security, a belief that was coded with American values and narratives.

An Enclosed Underworld

Just as war rooms were designed for containment, so was the fallout shelter, another iconic and self-referential closed world of Cold War culture.² An enclosed space constructed to protect occupants from nuclear blasts and fallout, the fallout shelter formed a keystone of US civil defense strategy. Since fallout shelter spaces had to be available to and known by as many US citizens as possible, shelters were accommodated into city planning and public information campaigns. The ultimate shelter, of course, was the underground city, an ideal closed world designed for survival during nuclear war. As Monteyne (2011) observes, most projects at the scale of actual subsurface urban development remained speculative, but Camp Century provided an example that Americans, using modern techno-science, would be able to escape the terrors of the Cold War by creating ‘utopian communities in remote and harsh environments’ (p. 103). The Camp Century concept not only was conceived in an effort to prove the Army’s ability to defend the USA, but also to show that secure, all-American cities could be built almost anywhere.

Although there is an intimate relationship between the popular discourse about closed worlds and the physical closed world, the one often reinforcing the other, it is useful for our purposes to make a distinction between the two. Camp Century was a military base situated in an extremely harsh, dangerous, and essentially uncontainable environment, while the popular discourse about it, as will become evident later on, invoked control, containment, and security. Popular closed-world discourses about Camp Century introduced the power/knowledge of US arctic military engineering into US culture. At the same time, the actual camp proved vulnerable to social and natural forces that were uncontrollable, unknown, and unknowable. Popular discourse about Century portrayed the defense of Greenland and of the USA as a kind of ‘delicate piece of war-gaming played in some defense institute, with hazelnut coffee and croissants’, as Don DeLillo, in his Cold War magnum opus *Underworld*, put it (see introductory quote). The real Camp Century, however, was more than a delicate war game and more than an American city under the ice. Outside elements—the public opinion of a small Scandinavian country (Denmark) and Greenland’s moving ice sheet—in the end caused Century’s closed world to implode.

Seeing Is Believing: Visual Imagery of Camp Century

The story of Camp Century is a fantastic one. Even today, it requires a stretch of the imagination to picture a group of Army engineers digging and plowing their way into Greenland’s ice cap to construct a nuclear-powered ‘city under the ice’, a city contained in deep tunnels and complete with a main street and off-

branching research facilities, post exchange, library, recreation room, chapel, cafeteria, flush toilets, laundry facilities, etc. Still more difficult is it to imagine 'life under the ice', in particular during the three months of 24-hour arctic darkness from December through February. As one G.I. explained it to Daugherty (1963), one of several journalists who visited the camp: 'City under the ice—man, oh man, they don't believe me back home. You have to see it to believe it!' (p. 17).

Wager (1962), writer and radio/TV producer for CBS and NBC, the first journalist to visit the city under the ice, and later renowned author of spy and mystery novels, put it this way:

Although a first glance might leave a stunned visitor with the impression of having wandered into a science fiction movie, the fact is that—in many ways—life inside the mile-thick glacier is not too different from that in many small US, Canadian or British towns. At this moment, some hundred nonchalant scientists and soldiers are conducting tests, playing ping-pong, carving model airplanes, eating double portions of steak and doing their laundry in a setting so fantastic that few novelists or comic-strip writers would dare describe it. (p. 2)

Real and Unreal

Visual materials were important media for transmitting the fantastic reality of Camp Century to an American audience, often dissolving the boundary between fiction and reality. Maps, photographs, and, most importantly, live footage depicted the Camp as an engineering accomplishment, but also as an extension of the 'American way of life' into the frozen wilderness. Images like the two photographs reproduced in [Figures 1](#) and [2](#) show US Army engineers busy constructing trenches, escape hatches, and technical infrastructure during the short, intensive summer activity of 1960. These photographs have distinctly realistic qualities, not the least because of the urgency of the activity. Yet, due to the height and intensity of the arctic summer sky, emulating nearly perfect studio conditions, and due to the lack of distinguishable surroundings, the photos appear overly dramatized and therefore vaguely unreal. Besides the engineering activity and the ice, they offer no other reference points with which to fix firmly in the mind's eye of the viewer the reality of Camp Century.

The interplay of reality effects and 'fantastic' features is aptly portrayed in Robert C. Magis' sketch of Camp Century, made for *National Geographic Magazine* ([Figure 3](#)). Magis' drawing shows Camp Century as a miniature 'toy' town where the inhabitants, all dressed in polar army outfits, work and live in orange-colored surroundings inside bright green buildings. On the left side of the drawing, we see the garage and the camp headquarters, and, on the right, there is the nuclear power plant with the mess hall and kitchen just next to it, as well as showers. Main Street, 335 meters long, cuts across the picture from the



Figure 1. US Army photograph, reproduced in Walter Wager's book about Camp Century (Wager, 1962). Original caption: 'Members of the US Army Polar R & D Center put corrugated steel roofing over a 20-foot trench dug by a Peter Snow Miller'.

upper left, where vehicles are permitted to descend into the trench, to the lower right. In the upper left corner, the photograph shows three 'workers' descending into the camp through one of the 15 emergency hatches. In the words of Dufek (1962), Rear Admiral and head of the US Navy's 1955–1959 Operation Deep Freeze in Antarctica, Camp Century appeared to the readers of the magazine as 'a fantastic city hidden in the Greenland icecap' (p. 713). A veteran of polar life, Dufek confessed that he 'found Camp Century amazing' (p. 716).

Engineering Camp Century

Camp Century was home to many experiments concerning arctic engineering and human performance (Clark, 1965). Clearly, the military engineers of the Army's Snow, Ice and Permafrost Research Establishment (SIPRE, renamed in 1961 the



Figure 2. US Army photograph, reproduced in Walter Wager's book about Camp Century (Wager, 1962). Original caption: 'A Peter Snow Miller throws snow on the arches that cover the main trench at Century. When the snow hardens, the corrugated arches will be removed, leaving a roof of solid ice'.

Cold Regions Research & Engineering Laboratory, or CRREL) were interested in learning about the actual performance of their subsurface camp concept. They performed various experiments: using ice as building bricks, optimizing camp ventilation, drilling wells for water supply and for sewage, keeping entrances clear from ice and snow, and much more. Of all the engineering studies, the one that received the most attention was that of tunnel deformation and collapse. Whilst Greenland's ice sheet appears to be a solid and stable mass, it is in fact flowing and changing, moving slowly from central areas of snow accumulation toward coastal melt zones. Building facilities inside the ice sheet is complicated by the very movement of that ice: together, this movement and the weight of overburden threatened to collapse the camp's tunnels (see also Martin-Nielsen, 2013).

The construction and maintenance of a subsurface camp was a new concept, but so was living under the ice. Led by the Army's Quartermaster Research and Engineering Command, studies of the 'micrologistics' and human factor aspects of small groups living in the arctic had begun in the summer of 1960 at Camp Fist-clench, a summer research camp consisting of five shallow tunnels opened in 1955 in northwestern Greenland as a forerunner for Camp Century (Levin *et al.*, 1961). It was concluded that of all the factors impacting on the performance of 'the man-equipment system', the effect of altitude (approximately 1800 meters) and the



Figure 3. Drawing of Camp Century © Robert Magis/National Geographic Stock. Original caption: ‘Cutaway View of Camp Century’. Reproduced with permission from National Geographic Magazine.

conditioning of the personnel were the most important. The ‘human factors’ showed improvement over time, even with the increase in apparent stress due to environment and exposure to lower temperatures. In other words, people got used to the extraordinary living conditions, a conclusion that was confirmed at Camp Century.

The Ice Worms

In his book about Camp Century, Walter Wager described it as ‘the most amazing community of our time’ (Wager, 1962, front flap). Wager compared life inside Century to television dramas and sensational motion pictures, emphasizing that the ‘Ice Worms’ of Century, as the men proudly called themselves, displayed none of the many and varied emotional problems that fictional characters typically suffered. Century, in Wager’s account, was a kind of reality show featuring engineers as ‘ordinary men’, ‘no hand-picked group of physical Tarzans or psychological giants’, who demonstrated ‘that Americans of normal mental and physical health can work effectively for long periods of time many miles from the nearest neighboring community’. Even the ‘long black months of the ageless,

savage Arctic winter' did not result in anything more than 'a minimum of fuss and literally no human friction' (Wager, 1962, p. 128).

There were none of the howling or tragic scenes so favored by today's earnest 'Method' actors, and there was no serious morale problem. As a unit, the men worked together well. As individuals, each man did his job without melodrama. It was a hard job with long hours, but nobody complained. The work was interesting, the location (Arctic) was unusual and the challenge was great. It was an adventure—both physical and mental. (p. 129)

A First Step to Outer Space?

The adventurous and partly staged character of the public representations of life at Century also is discernible in some of the photographs taken inside the camp and reproduced in Wager's book (Figures 4 and 5). These photos show the inside of a few of Century's barracks, which were all pre-fabricated wooden T-5 buildings suitable for arctic installation, each 4.8 meters wide and 14.6 meters long (Clark, 1965, p. 29). The scenes are clearly performed for the photo session in an effort to show the ordinariness and comfort of leisure activities in Century. The photographs supplement the quasi-fictional story about Camp Century. Camp Century appears as a set designed for real people partaking in a staged,

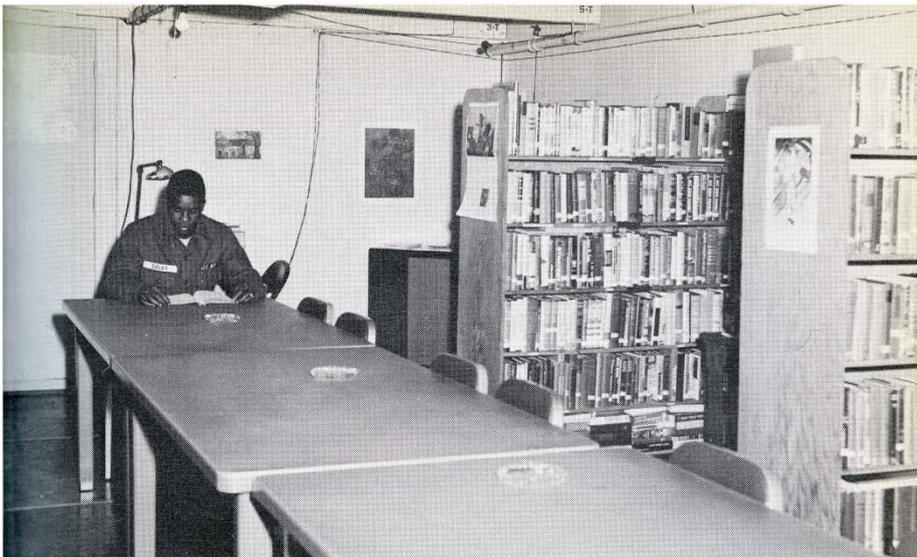


Figure 4. US Army photograph, reproduced in Walter Wager's book about Camp Century (Wager, 1962). Original caption: 'SP5 Leslie E. Coley takes advantage of the well-stocked library, which contains many current books provided by gift memberships in the Book-of-the-Month Club'.

social experiment dealing with human relations and resources in an isolated setting.

The Camp Century experiment, in Wager's words, paved the way for an 'extraordinary tomorrow' that was 'almost upon us'. The world of tomorrow would take place in space, and the idea of settlements in space had become less fanciful because of what had been learned at Century. In the mind of the viewer, the scenes from Century thus were transported from earth into space. The staged, decontextualized nature of the Camp Century images made plausible this virtual transportation of visual imagery from below the surface of the Greenland ice cap to the next frontier for American civilization, outer space. In Wager's (1962) words:

Since Camp Century has already demonstrated that young Americans can survive in miserably isolated outposts under bitterly adverse conditions, the US scientists planning the Free World's first lunar outpost will approach their immensely more complex assignment with a certain amount of confidence. Century has proved that—if the mission and equipment are carefully and systematically prepared—there are young men who can take it. Century has demonstrated that they will volunteer to roll back the frontier and pierce the darkness; it has proven that they will face the challenge with skill and pride. (p. 131)



Figure 5. US Army photograph, reproduced in Walter Wager's book about Camp Century (Wager, 1962). Original caption: 'Century's post exchange, a miniature department store 20 feet under the snow. Here a private examines a camera—one of the exchange's fastest moving items'.

The Epic Construction of an Ideal Arctic Laboratory

In Edwards' (1996) narrative about the incorporation of computers into US strategic defense, closed-world discourse portrays the world as a place of experimental warfare by way of simulation techniques. The duality of closed-worlds—part scientific, part military—enables a double rhetoric exposing the underlying techno-scientific systems to wider audiences. On the one hand, closed worlds can be seen as objective, rational attempts to provide new knowledge for the benefit of mankind; on the other hand, they also represent the military struggle of the 'Free World' against Communism. In public stories about Camp Century, the former rhetoric was most often employed, associating Century with research and development. One such story was the motion picture film mentioned at the beginning of this article, *The Story of Camp Century: The City Under Ice*, produced by the US Army Signal Corps' Army Pictorial Service.

A Symbol of Man's Unceasing Struggle to Conquer His Environment

The film was broadcast in 1961 as part of the US Army's *The Big Picture* series, which ran on ABC-TV from 1951 to 1964 (United States Army, 1961; United States Army Pictorial Center, 2006). The shows were half-hour weekly programs, sometimes featuring famous or before-they-were-famous actors and actresses in quality productions, hosted by Master Sergeant Stewart Queen. They formed part of a publicity campaign mounted by the Army to gain public and strategic relevance in the face of inter-branch rivalry, waning public and congressional support, and funding challenges (Kinney, 2013). In 1964, after Camp Century had been prematurely closed down during the winter season, the footage of *The Story of Camp Century* was used in the Army's *Research and Development Progress Reports* with an added introduction explaining the location and the purpose of Camp Century:

On the top of the world, below the surface of a giant ice cap, a city is buried. Today, on the island of Greenland, as part of man's continuing efforts to master the secrets of survival in the Arctic, the United States Army has established an unprecedented, nuclear-powered Arctic research center. Located in a wilderness of ice and snow, Camp Century is 150 miles from Thule, its nearest base of supply. This is an ideal Arctic laboratory, for more than nineteen per cent of Greenland is permanently frozen under a polar ice cap, which covers all but a few coastal areas of the island. Camp Century is buried below the surface of this ice cap. Beneath it, the ice descends for 6.000 feet. In this remote setting, 800 miles from the North Pole, Century is a symbol of man's unceasing struggle to conquer his environment, to increase his ability to live and fight, if necessary, under polar conditions. This is the story of Camp Century: The city under ice. (United States Army, 1964)

The Story of Camp Century was filmed on location in Greenland in the summer and autumn of 1960. It deals entirely with the construction of Century, as narrated by Captain Evans. He explains that Century is 'an ideal arctic laboratory' for two reasons: First, its construction allows the US Army Corps of Engineers to experiment with 'new concepts of polar construction'. Second, once the camp has been built, the Army engineers will be replaced by 'military and civilian scientists from the polar research and development program' (United States Army, 1961). Since the film revolves around the construction of the camp, it really deals only with the first of these two experimental agendas.

Arctic Engineering and Human Resources

In complete and, it may be assumed, deliberate neglect of the military purposes of Century, *The Story of Camp Century* is an epic story of Army engineers carving out a laboratory city under the ice cap. It is a story of engineering triumph and human bravery. Everything in it is tough, requiring exceptional character and robust technology. The climax occurs when the portable nuclear power plant is transported to the camp, installed, and made operational (see more on the nuclear plant below). As the plant units, each weighing more than 400 tons, begin to move slowly across the ice cap, 'one of the worst storms of the season blew up', the film tells us. At the camp, Evans' crew 'bundled up and kept on working'. The background music darkens and grows in intensity. To prevent the main nuclear trench from filling with snow, the roof had to be closed quickly. Just as the nuclear plant arrived, however, the storm let up, and the men began carefully unloading the heavy shipment. The film then shows the installation of the nuclear reactor and the process of making the reactor core go critical. At 6.52 AM on October 2, 1960, the engineers succeeded, and we see a few clips of men rejoicing and congratulating each other (United States Army, 1961).

The narrative of *The Story of Camp Century* centered on arctic engineering, leaving its viewers in awe of the swiftness and ease with which Army engineers built a city under the ice. As the introduction states, the film portrays Century as a conquering of the arctic environment. The means of conquest are military organization, engineering skills, and a host of technologies from Caterpillar tractors to prefabricated arctic buildings to the semi-portable nuclear reactor. The film ends with the construction engineers leaving the camp. The closing line links their accomplishments to the progress of science: 'This is the story of Camp Century, of the Army engineers who carved out the underground city, of the many other men of the US Army who made this project possible, and of man's never-ceasing quest for knowledge' (United States Army, 1961). The closed arctic world of Camp Century was made possible by the Army engineers; yet the military purposes of the camp were wholly absent from the film, save for the three words, 'fight, if necessary' in the introduction (see quote above) and the presence of military officers and engineers throughout the film.

The Implosion of Camp Century

Not every story about Camp Century downplayed its military significance. In his book about Century, for example, Wager explained that that ‘future Century-like “combat holes” might be deliberately and systematically camouflaged for the safety of military personnel who might take shelter there’ (Wager, 1962, p. 121). He also noted that Camp Century might prove useful to US nuclear deterrence in other ways:

- (1) A radar detachment equipped with electronic gear that is mounted on the surface some distance away,
- (2) Squadrons of jet fighters hidden in invisible ice hangars, to be moved to the surface and hurled into the sky by steam catapults (such as those used on aircraft carriers) to intercept bombers moving toward North America,
- (3) Defensive missile batteries to fire up rockets that would destroy an aggressor’s missiles before the latter could reach Montreal or New York or Washington or Los Angeles,
- (4) Airborne commando teams—with their ski-equipped planes—who would move out swiftly to demolish an aggressor’s rocket pads, and
- (5) Retaliation missiles that could be fired at enemy rocket centers and munitions depots immediately after the foe had struck at North America (pp. 122–123).

Wager (1962) made clear that ‘right now, all of these are pure notion’ (p. 123). The Pentagon had no immediate plans to turn them into reality, and the US Government had not even raised the question with the Danes, who ultimately had authority over Greenland and could be expected to object to extensive US military operations on the island. From a military point of view, the idea of subsurface bases for radar units and antimissile rockets showed the greatest potential. In 1959, the Army had launched its first test of the nuclear-tipped Nike-Zeus high-altitude interception rocket aimed at intercontinental ballistic missiles, and it was not until 1963, after the publication of Wager’s book, that the Department of Defense terminated the development of the Nike-Zeus rocket due to technical flaws. Unaware of these later developments, Wager (1962) concluded: ‘The nuclear by-products of the explosion of the Nike-Zeus warhead could do much less harm in the almost empty Arctic than over heavily populated areas of North America’ (p. 123).

Danish Reactions to Camp Century

As it turned out, the nuclear aspects of Camp Century were tricky selling points for the US Army. The Danish attitude to nuclear issues was ambivalent, partly because of a strong, if latent pacifist movement, and partly because Denmark, more than most other countries, had to balance threats from the Soviet side with pressures from the USA. In March 1957, the Danish defense minister accepted USA’s offer of Nike-Hercules missiles, which could be armed with

nuclear warheads if necessary. Soon thereafter, the Danish armed forces began preparations for the use of nuclear weapons. The official Danish policy, however, remained based on the decision not to allow the storage of nuclear weapons on Danish soil, including Greenland, ‘under the present circumstances’ (Agger and Wolsgaard, 2006).³

In the Danish press, the news about the nuclear city under Greenland’s ice cap was received with ambiguous reference to its military applications. There were very few attempts to sell the miracle of Camp Century to the Danish public. The two books discussed here were not translated into Danish, nor were the Big Picture feature or the 20th Century Show about Camp Century ever screened in Denmark. The American geographer and polar explorer Paul Siple, head of the Army’s Office of Polar Affairs, visited Denmark to receive the prestigious Hans Egede Medal from the Danish Royal Geographical Society on February 3, 1960, just as the news about Camp Century’s nuclear reactor was about to break in the Danish press. He assured the readers of the Danish high-quality newspaper *Politiken* that ‘there are no military secrets’ and that ‘the purpose of our task is purely scientific’ (Erol, 1960). Later, *Politiken*’s own reporter Paul Hammerich, however, corrected Siple in a series of articles from Greenland. Noting that Col. Kerkering was reluctant to speak about the implications of the construction of Century, Hammerich speculated that the US Army wanted to use Century for:

- (1) Practice for and defense against total Arctic war.
- (2) Examining the protective shield of the ice cap against hydrogen bomb explosions and resulting radiation.
- (3) Giant holes under the icecap for storage of food and other supplies (guaranteed permanent deep freeze).
- (4) Using the ice cap for rocket launches into space and preparing astronauts for extreme living conditions (Hammerich, 1960).

Military vs. Science Images

The Army presented Camp Century to American and Danish publics as an attempt to contain or meet Soviet aggression by means of military-techno-scientific conquest of the Arctic environment. Century’s success would prepare US forces for Arctic combat, shield the US population against Soviet nuclear attack, and possibly pave the way for habitation in polar areas and, ultimately, in outer space. With both techno-science and security policy at its core, closed-world discourse formed the basis of the popular narratives about Century. In books and films aimed at a general audience, Century was depicted as a confined, detached, and virtual space, dominated by military, techno-science, and/or American values, depending on the audience and purpose of the presentation. In the context of Arctic military engineering, Century represented the kind of discursive and physical closed-world containment of the superpower struggle that was at the heart of many other

contemporary narratives, images, and technological designs of the Cold War (Edwards, 1996).

The extensive coverage, however, also meant that the connotations of Camp Century as a cultural and political symbol could not be entirely contained. The Army clearly wanted to downplay its military significance without losing sight of the ultimate reason for its existence. Still, reporters such as Walter Wager and Paul Hammerich used their imagination to project future military uses of Camp Century (or maybe they were just well-informed, but unable to reveal their sources within the military establishment). The Danish authorities expressed their concern and tried to limit public access to the military applications of Camp Century (Nielsen and Nielsen, 2013). However, the information about Camp Century's military and techno-scientific implications was made publicly available, even if the references to Project Iceworm were couched in vague terms and references to future scenarios. The publicity for Camp Century thus turned out to be a double-edged sword: On the one hand, it proved useful in allowing closed-world discourses to circulate among wider audiences. On the other hand, public scrutiny resulted in an opening up of the scope of Camp Century. Despite its neat and clean appearance as techno-science applied to Arctic conditions, it also included connotations to nuclear war, death, and destruction.

Squeezed Out of Existence by the Ice and by the Danes

Based on available knowledge of the ice sheet's movement, Camp Century was deliberately built as a limited lifespan installation: it was designed to last 10 years, from 1960 to 1970, after which (the calculations said) the camp would have to be abandoned due to ice movement. To starve off collapse, the personnel stationed at Century undertook a time-consuming and rigorous program to prevent snow accumulation and tunnel deterioration, including removing more than 120 tons of snow and ice from the ice sheet's surface above the camp each month. By 1962, just two years after the opening of Century, the roof above the nuclear reactor had sunk five feet from snow compaction on the reactor tunnel, and Army personnel had to raise the roof to permit continued operation of the reactor. Two years later, in 1964, it was again clear that the ice had a mind of its own: the reactor roof and walls collapsed to a dangerous level, and the decision was taken to remove the reactor entirely (Clark, 1965).

The eventual collapse of Century had been predicted by the Army engineers, but the faster-than-expected closing-in of Century due to ice movement formed a potential threat to the popular image of Century as a controlled experiment designed to affirm US Cold War superiority. Unsurprisingly, it was given much less prominence in public discourse. Walter Sullivan, science journalist at the *New York Times*, explained the Army's decision to haul the reactor out after fewer than three years of operation and after spending millions of dollars: 'The immediate reason for the decision [. . .]', he wrote, 'is that the reactor is being

squeezed out of existence. The inexorable compression of Arctic snows, heaped one upon the other, turns the snow to ice and is shrinking the reactor tunnel' (Sullivan, 1964).

What might have been interpreted a failure for the Army engineers was presented by Sullivan (1964) as a (partial) success:

The basic reason for the closedown is that Camp Century has largely served its purpose. The camp is a prototype of a buried base, deriving its heat, light and electric power from nuclear energy. It is hardly detectable from the air. It was conceived when some strategic planners thought the United States might wish to establish such hidden bases in Arctic. They could be equipped with missiles or other devices and could be linked by tunnels under the ice. [. . .] Today, such bases seem less necessary. Polaris submarines that can keep constantly on the move beneath the polar ice appear far more reliable. Furthermore, the only large ice-covered region in the North is Greenland, which is Danish territory. The Danes are very sensitive about American activities. (p. 53)

In the last paragraph of his article, Sullivan (1964) mentions what is probably the most important and lasting legacy of Camp Century, namely the ice cores drilled by the US Army Corps of Engineers. In 1964, as the nuclear reactor was being hauled from Century, Danish scientist Willi Dansgaard, who in 1954 had realized that the layers of the Greenland ice sheet contained information about past climate, visited the camp (Dansgaard, 1954). During the visit, he unexpectedly learned that the Army engineers were drilling through the ice cap, but did not get to see the actual ice cores. With assistance from Chester C. Langway, Jr. of the US Army Cold Regions Research and Engineering Laboratory, Dansgaard later got permission to use the Camp Century ice core for scientific research. In the summer of 1966, the drill at Century reached the base of the ice sheet at about 1390 meters, and due to the fruitful, cost-sharing cooperation of Langway's and Dansgaard's groups we now know that the Camp Century ice core holds information about climatic events 100,000 years into the past (Dansgaard, 2005; Langway, 2008; Martin-Nielsen, 2013). But that is another story, as the idiom goes.

Conclusion: 'This Is the Story of Camp Century'

Edwards (1996) used the term 'closed-world discourse' to describe the 'mutual orientation' of security policy, military strategy, and techno-scientific practices within computer engineering and communication theory during the Cold War (pp. 81–82). More than an ideology, closed-world discourse was implemented in military control and command systems that relied heavily on computers and networks of communication. Closed-world discourse was based on the idea that all US enemies, and the Soviet Union in particular, could be contained by

means of (the threat of) nuclear weapons and military bases scattered across the globe. In the aftermath of World War II, the USA developed a networked empire with computer and communications systems, but also military base engineering, at its core (Gusterson, 2009; Lutz, 2009; Oldenziel, 2011).

Camp Century was conceived—and made widely public—as a US Army response to Cold War anxieties. The Army wanted to try out their under-ice base concept in order to test the feasibility of Project Iceworm and its planned deployment of about 600 nuclear missiles under the inland ice. Camp Century was part and parcel of the Army's attempt to make itself relevant in a period where the strategic focus on long-range nuclear armed ballistic missiles carried the day. The construction of Camp Century proved that, indeed, it was feasible to have military bases inside Greenland's ice sheet, thus enabling the deployment of deterrent capabilities in the Arctic as a sword and shield for US and NATO forces. Yet, maintaining the tunnels turned out to more complicated and more expensive than originally thought, and discreetly 'sweetening the Danish pie', as the review of Project Iceworm by the Department of Defense put it, proved impracticable, partly due to the publicity campaign launched by the US Army. Despite favorable appraisal at the highest levels of US Government, Project Iceworm was abandoned (Petersen, 2008).

Closed worlds like Camp Century were designed and built to contain the super-power conflict through engineering accomplishment, spatial planning, and military control and command. They represented an effort to protect US communities against nuclear annihilation, partly by expanding US power/knowledge networks across the globe, and partly by injecting into US culture narratives about security enforced by techno-scientific capabilities and Free World values. Indeed, public communication of closed worlds was essential to the construction of widespread awareness of the measures taken to enable civil defense and national security. In effect, public closed-world discourses shaped a kind of mental containment of the Cold War, and, in doing so, enabled the self-referential doubling of closed worlds that Edwards (1996, p. 12) suggests.

The public communication of Camp Century included references to military relevance and scientific innovation. On the one hand, most of the journalists covering Camp Century for the US public explicitly referred to the strategic significance of Camp Century for 'conquering' the Arctic. However, this military narrative posed problems for the Danish authorities, who were already walking a difficult tightrope due to the official Danish policy of refusing nuclear weapons on Danish territory and the unofficial acceptance of US nuclear weapons in Greenland. Copenhagen was forced to try to downplay or contain the military narrative about Camp Century. On the other hand, the conquest metaphor was also used to emphasize the scientific and technological aspects of Camp Century. According to this narrative, the project was described as a techno-scientific conquest of the Arctic, which ultimately could be seen as a first step to outer space.

The closed world of Camp Century formed part of a new venture into polar military engineering, while also embodying ideas about security policy, American values, and frontier heroism. For a relatively short period at the height of the Cold War, stories about Camp Century comforted American audiences by demonstrating that US forces could prevail in hostile environments. Camp Century was both an extension of the power/knowledge network of US military into Greenland's ice cap and a zone of shelter, instilled with American culture and inhabited by average Americans. The fantastic reality of Camp Century seemed to prove that even the unfriendly high north could be turned into a domesticated space for 'delicate war-gaming' (see introductory quote).

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Notes

¹Greenland was under the sovereignty of Denmark, and US military presence in Greenland was regulated by a Danish-American defense agreement. It was—and still is—Danish policy not to have nuclear weapons on its territory, although the Danish Prime Minister, H. C. Hansen, in a secret note of 18 November 1957 to the US Ambassador, confirmed that the US could go ahead with the deployment of nuclear weapons to Greenland. However, since this was not the official policy of Denmark, the US Administration had no way of knowing the extent and scope of Hansen's "green light" (Petersen, 1998).

²The iconicity of war rooms and fallout shelters is probably best illustrated by reference to Stanley Kubrick's ironic Cold War masterpiece, *Dr. Strangelove, Or How I Learned to Stop Worrying and Love the Bomb* (1964), in which both types of closed worlds play an important role.

³Historical research has shown that the Danish Government implicitly allowed for US bombers carrying nuclear weapons to be deployed at Thule AB (Petersen, 1998; Olesen, 2011).

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