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Biblioscope and the Variety of Disability Media: The Construction and Institutionalisation of a Swedish Reading Device for People with Physical Impairments, 1954–1966

Abstract

In the mid-1950s, the Gothenburg-based photographer Andrej Gavrjusjov constructed a microfilm reading device called Biblioscope, intended for hospital patients with physical impairments. Throughout the following years, reading devices and microfilmed books were distributed to hospital libraries across Sweden, but in the mid-1960s, the Biblioscope was taken out of distribution. By analysing this now largely forgotten technology, the article makes several contributions to the field of disability media studies. With a focus on material and economic factors, and intermedial relations, the article analyses the construction and institutionalisation of the Biblioscope. Although the Biblioscope was mainly aimed at hospital patients with physical impairments, the article highlights speculations about its future potential for a wider set of users, anticipating today's reading of digital books on portable screens. In conclusion, the analysis shows how media technologies, which today seem self-evident, often have forerunners that were developed for individuals with disabilities.

Keywords

Reading device | Biblioscope | Hospital libraries | Disability media history | Microfilm

> Think of a book filmed page by page, and then all these filmed pages appearing one by one on a grey glass surface as one presses a small button – isn't that something very practical for anyone who is ill and wants to read but cannot hold a book?[1]

In 1954 and 1955, several Swedish newspapers reported on a new type of reading device for paralyzed polio patients and other hospital patients with physical impairments, invented by photographer and engineer Andrej Gavrjusjov and orthopaedist Erik Severin, both of whom were working at the main hospital in Gothenburg.[2] The device, called Biblioscope, consisted of a small box with a 16 mm film strip on its side, featuring photographed book pages (see figure 1). With the help of mirrors, the book pages

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appeared on a small screen on the front of the box and could be flipped back and forth by gently pressing a button on a small portable control panel.

Today, the Biblioscope is a largely forgotten technology. For the present-day reader, it is easy to draw comparisons with electronic books and digital tablets and to think of it as a curious invention or, in media archaeological terms, a kind of 'imaginary media', well ahead of its time.[3] However, the

POLIOSJUK KAN LÄSA MIKROFILMAD BOK

En ny läsapparat för poliosjuka prövas nu på Epidemisjukhuset i Stockholm. Böcker och tidskrifter mikrofilmas, sedan kan de förlamade patienterna läsa texten på en glasskiva som återger sidorna något förstorade. Manövreringen klaras med en knapp, det räcker att lätt vidröra den med fingret, hakan eller kinden för att nästa sida skall "bläddras" fram. På bilden läser Rolf Johansson, som ligger polioförlamad på Epidemin, en bok ur julboksfloden medan avdelningssköterskan syster Evy kastar ett öga på sidorna under ett kort uppehåll i allt springet. Meningen är att skaffa ett 25-tal liknande läsapparater, som skall fördelas på fyra sjukhus i staden.

Sjukhusen och ålderdomshemmen får också från nyår betydligt förbättrad biblioteksservice. Några sjukhus — Sabbatsberg och Epidemin bland dem — förses med fasta patientbibliotek, medan andra skall få regelbundna besök av vandringsbibliotek. På samma sätt skall man klara läsbehovet vid ålderdomshem och pensionärshem.

Se sidan sex, spalt ett

Figure 1. Newspaper article about Biblioscope in Dagens Nyheter, January 2 1955.

Biblioscope was more than just a thought-provoking invention that never quite reached production and use. As this article will map and analyse, reading devices and filmed books were distributed to libraries and hospitals across Sweden in the second half of the 1950s and first half of the 1960s, after which the Biblioscope was phased out of distribution. Although it had a life span of only a decade, the Biblioscope offers the opportunity to analyse the construction and institutional integration of a media technology, which initially was specifically aimed at hospital patients with physical impairments. Departing from the media historical concept configuration, this article aims to analyse the construction of the Biblioscope and the way it was institutionalised within the Swedish library and healthcare sectors. Following De Rosa and Hediger's discussion of the historical configuration of film, the configuration of a given medium, such as the Biblioscope, can be understood as a temporary constellation of a complex set of social, cultural, economic and material factors, which, for example, can include relational, situational and operational aspects.[4] In analysing the configuration, construction, and institutional integration of the Biblioscope, the analysis will be structured around four sets of questions. How was the construction of the Biblioscope built upon and related to other media technologies? What material factors and obstacles influenced the construction of the device? How was its intended use and user understood by its constructor and in the public press? How was the Biblioscope institutionalised, and how was an infrastructure for producing and distributing reading devices and filmed books set up?

Next to articles on the Biblioscope in the printed press, the study departs from previously unexplored material in both media historical research and research on disability media. This includes archival material from national organisations for people with disabilities, libraries and hospitals in Stockholm and Gothenburg, and printed material from the national library sector. The article is part of a larger study on the work of photographer, filmmaker, and small-scale media entrepreneur Andrej Gavrjusjov (1912–1971). Archival material from his business was recently held over to the National Archives in Gothenburg by his son, Mischa Gavrjusjov, and some of this material has also been used for this article.[5]

Media history, technology and disability

The media-historical excavation of this now largely forgotten reading device for hospital patients contributes in several ways to the field of disability media studies, responding to the advancements

called for by Rachel Adams, Mara Mills and Jonathan Sterne in their afterwords to the edited collection *Disability Media Studies* from 2017.[6] First of all, and in line with the overarching aim of this special issue, it contributes to a historical perspective that has largely been lacking within the field. Secondly, in contrast to the predominance within the field of textual analysis of disability in medial representations, the analysis of the article has its focal point on material, economic and institutional issues of this analogue media technology. Finally, as many studies within the field have been focusing on Anglo-American case studies, the article makes a case of analysing the construction and institutionalisation of a media technology aimed at persons with physical impairment in a previously unexplored local and national context. However, as we shall see, there were connections to similar technologies in both the U.K. and the U.S.[7] These contributions go in line with Mills and Sterne's call for a radical expansion of 'the methods, sites, and contexts through which disability and media are understood' as well as 'more attention to the material phases of media, including manufacture, design, infrastructure, distribution, pricing, adoption, domestication, repair, and disposal.'[8] In this, they suggest the term *dismedia* as a way of moving beyond normative ideas of technology as a means of repairing defective bodies to a universal human standard. Instead, they insist on focusing on difference and variety in analysing media and communication, where notions of disability have shaped modern media technologies and modern media technologies, in turn, have shaped ideas of ability and disability.

Departing from their own historical studies on modern sound media, as well as histories of closed captioning, audio description, and subtitling, Mills and Sterne argue that users with disabilities are often at the forefront of the innovation of new media technologies, which later on have become useful for everyone.[9] In this, a reading device such as the Biblioscope, which can be seen as a forerunner to today's readings of digital books on portable screens, can be compared with another contemporary competitor to the physical book: the audio- or talking book. In his study, *The Untold Story of the Talking Book,* Matthew Rubery shows that sound recordings of literature go all the way back to Edison and his demonstration of the Phonograph in the late 19th century.[10] However, despite widespread speculations on how the recordings of sound would revolutionise print culture, it was not until the 1930s that the recordings of books got a steadier form when The American Foundation for the Blind developed the first talking book on phonograph records. Thus, today's audiobooks, with an undeniable place in the cultural landscape, have a solid historical link to disability. Mills and Sterne have also shown how technologies of speed reading and time-stretching sound technologies were

developed by early users of talking books during the 1930s as a way of hacking the technology to meet the users' own demands and wishes, moving beyond ideas of a passive disabled user.[11] However, placing the user of a specific technology at the focal point of the analysis as Mills and Sterne do, requires material that is often difficult to obtain in historical studies. In my research for this article, it has been challenging to obtain first-hand information of this kind from the actual users of the Biblioscope. The users of the device and their insights are rarely presented in archival sources or historical newspaper materials. In a handful of the articles from the printed press, hospital patients using the device are depicted in images and presented by their names. Still, I have only found one example where an actual user is presented and explicitly quoted in the text. This lack of the actual users' perspective and the way the users are represented when they are occasionally included in the material will be discussed in the various sections throughout the article.

Historical context and some notes on language and translations

To understand the development and construction of the Biblioscope, it is necessary to discuss the context within which it was created. When Andrej Gavrjusjov, who had come to Sweden as a refugee from the USSR in 1945, constructed the Biblioscope, he was working as a teacher in photography at a vocational school for people with physical impairments, closely connected to Gothenburg's main hospital, Sahlgrenska.[12] During his work as a teacher, he also undertook several other tasks related to film and photography within Sahlgrenska, as well as national organisations for people with disabilities and for the type of vocational school he worked at.[13] Thus, the development of the Biblioscope was closely connected to Gavrjusjov's teaching position and his work with film and photography within Sahlgrenska and the national organisations. Another factor in understanding the development of the Biblioscope is that there was an extensive outbreak of polio in Sweden in 1953, with Western Sweden and Gothenburg being particularly hard-hit, resulting in a number of paralysed and hospitalised patients.[14] Many polio patients were also students at the vocational school which Gavrjusjov worked at.

However, the name of the school where he was employed, 'Vanföreanstalten', part of a national organisation for 'Vanförevård', carries extremely offensive connotations today.[15] This reflects the derogatory view of people with physical impairments in mid-20th-century Swedish society and highlights how the language in the historical material used for this article includes many problematic

and insulting terms. As the article uses empirical sources in Swedish, it has in some cases also been difficult to find proper translations for the historical terms to English. The word 'vanför', has no precise equivalent in English, but is somewhat comparable to derogatory and outdated terms such as 'crippled' or 'deformed'. Thus, 'Vanföreanstalt' can roughly be translated to an 'institution for cripples' and 'vanförevård' to 'health care for cripples'. Another term reoccurring in the material, which has been hard to find a precise translation for, is the word 'sängliggande', which literary means 'a person lying in bed'. This word seems to be a bit more neutral than English words such as 'bedridden' or 'bedbound', which corresponds more closely to the more problematic Swedish word 'sängbunden'. In the article, I will only use historical and outdated terms when I directly quote the historical sources or when I want to make a specific point about them.

The emergence of the Biblioscope: Intermedial and transnational relations

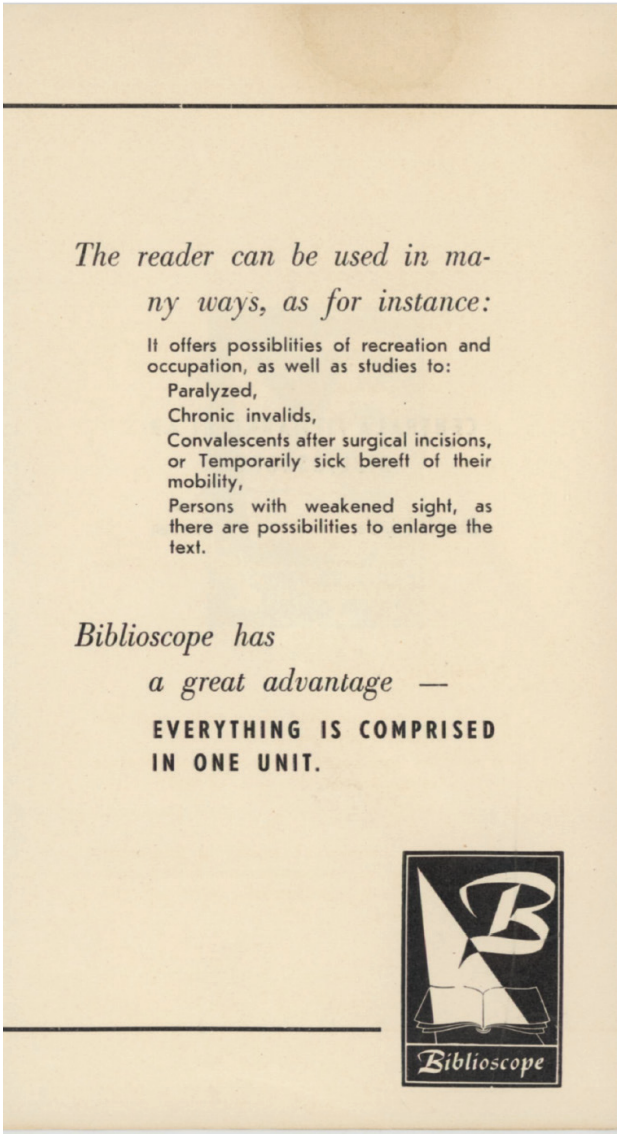
Media historians such as Lisa Gitelman have pointed to the fruitfulness of analysing a media technology at the point of its emergence; when a technology is perceived as new, and its potential use and social and cultural meanings are still under negotiation.[16] Analysing a media technology at this point also makes it possible to understand how it builds on and relates to other media technologies. In one of the articles from the mid-1950s, Erik Severin points to the fact that several reading devices had been around for hospital patients with physical impairments, including, for example, reading racks, sometimes with automatic page turners, and prism glasses.[17] In the archival holdings from Svenska Vanföreanstalternas centralkommitté (SVCK), the national organisation for the kind of vocational school Gavrjusjov worked at, material concerning many such devices are to be found.[18] Next to press clippings on, for example, a new automatic page turner, this includes at least three different microfilm reading devices similar to Severin's and Gavrjusjov's invention. However, in contrast to the built-in screen of the Biblioscope, all of these devices were based on projecting book pages onto a flat surface. In one of them, the Ceiling Projector, produced by the American company Projected Books Inc., the book page was projected onto the ceiling above the patient's bed.[19] Another device, called the Pilgrim, was constructed by the British association Microfilm for the Disabled, formed in 1946. In a report from the association, it is highlighted that the device, in contrast to the Ceiling Projector, was constructed to project the images of the book pages onto any flat surface, not just the ceiling.[20]

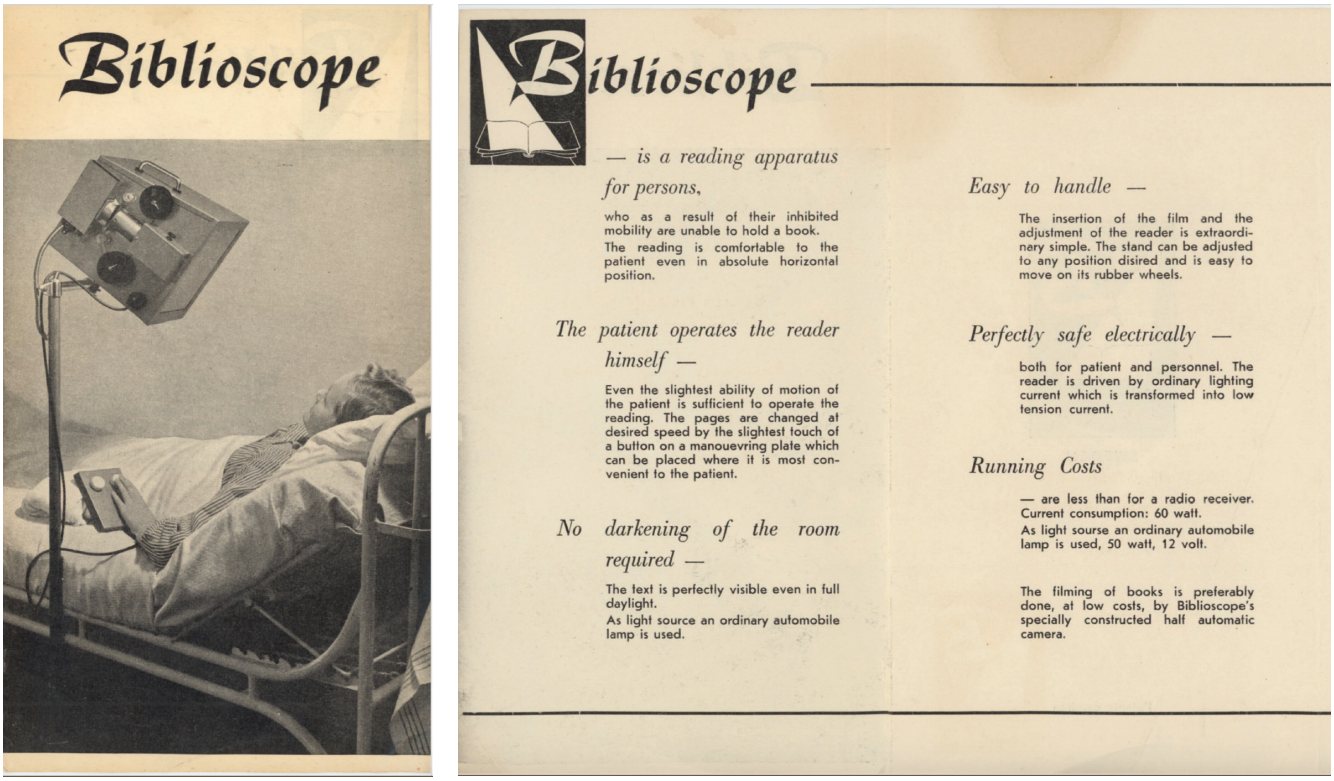
The name of the British association also points to the fact that all the different reading devices here discussed, the Ceiling projector, the Pilgrim, and the Biblioscope, had their base in filmstrips with photographed images of book pages, that is: microfilm. Within media history, as well as the archival and library sector, microfilm is most often understood as a cultural heritage technology for preserving newspapers, books and other forms of printed material for the future or, to some extent, as a technology for handling and storing information and paper documents in the mid-20th-century office.[21] In contrast, the filmed books and reading devices discussed here were not about historical preservation or information storage, but about the everyday reading of the written text for persons with physical impairments. Thus, when Gavrjusjov, with the support of Severin, constructed the Biblioscope, there were several similar devices in both the U.K. and the U.S., with microfilm as their technical base. In the next section, I will more closely analyse Gavrjusjov's construction of a reading device in Sweden and how its development was related to reading devices in the U.K. and the U.S.

A Swedish reading device: The construction of the Biblioscope

In a lengthy article in a Swedish journal on the care of people with disabilities from 1955, Gavrjusjov described the construction of the Biblioscope and the background to its development.[22] According to Gavrjusjov, there had long been discussions about how to make reading books possible for patients with long-term physical impairments. Trials had been conducted with nursing staff reading books aloud, but this made the patient too dependent on the reader, and the staff were tied to the same patient for too long. Together with, among others, Karl Montan, secretary at SVCK, and the aforementioned orthopaedist and chief physician Erik Severin, Gavrjusjov had also tried out an imported reading device from the U.K., most likely the Pilgrim mentioned above. However, according to Gavrjusjov, this device was, in many ways, a disappointment. First, it required expensive lamps of a specific kind that had a short lifespan, and lamps for replacement had to be imported from the country of manufacture. The device was also cumbersome to move around during daily care and had to be readjusted for every new reading session. Furthermore, since the book page was projected onto the ceiling above the patient's bed, it required the room to be darkened, often at the risk of disturbing other patients in the same room.[23] Finally, access to filmed books was very limited, and producing new ones seemed far too costly.

Instead of importing reading devices from abroad, Gavrjusjov decided to try constructing one in Sweden and provided a thorough description of its construction in the article. One central concern was to keep the cost of producing and repairing the device low. One way to achieve this was to use inexpensive standard components, mainly from cars, which were easy to replace and repair. For example, the lighting source was a 50 watts car lamp, which could be bought for a few crowns at any gas station, and the mechanism for turning the pages was taken from windshield wipers, which could also be repaired at service stations. Thus, the Biblioscope was not only related to and based upon other media technologies such as microfilm, but its construction also involved a strong material





Figures 2–4. Advertising Booklet for Biblioscope, undated, private collection.

entanglement with the production and repair of cars. The rectangular box of the device, with the film strip running along its side, was placed on a tripod with small wheels. This allowed the whole device to be moved around and, according to Gavrjusjov, easily adjusted to a suitable reading position for the patient. The small control board had only two buttons for turning the book pages backward or forward with a gentle press.

Many of the arguments in the article reappear in a four-page advertising booklet for the Biblioscope written in English (see figures 2-4).[24]

In the booklet, a number of its advantages are listed: 'The patient operates the reader himself [Sic!]', 'No darkening of the room required', 'Easy to handle', 'Perfectly safe electrically', '[Low] Running costs', and a conclusion stating that 'Biblioscope has a great advantage – Everything is comprised in one unit'.

In the article, Gavrjusjov identified several hospital patients' needs when operating a reading device. For example, the device needed to be easy to handle in everyday care situations, and its

operation should not disturb other patients in the same room. Furthermore, a central argument in the construction and promotion of the Biblioscope appears to be the effort to make patients independent of the nursing staff in operating the device, although the staff still had to load the film roll and adjust the reader's position. By using standard and readily available components, the construction of the Biblioscope also aimed for low costs and high flexibility. The most common errors, such as a broken lamp, should be possible for the hospital or healthcare personnel to rectify. However, it should be noted that Gavrjusjov does not describe how the trials with the imported reading device were conducted, nor does he discuss whether there were any inputs from actual or potential users of it. Thus, Gavrjusjov appears to have been more interested in describing the technical aspects of the device than in highlighting insights from individuals who would actually use it. In the next section, I will examine more closely the question of who the device was intended for and how its intended and potential users were described in the printed press.

The variety of impairment: A reading device with many potential users

Most reports on the Biblioscope in the printed press from the mid-1950s described it as being intended for individuals with physical impairments in hospital care. In this, polio patients are repeatedly mentioned as the main target group for the device, and sometimes derogatory terms such as 'Vanför' are used. However, many of the articles use less derogatory and more non-specific words such as 'ill', 'bed lying' [sängliggande] or 'ill lying in bed' [sängliggande sjuka].[25] Although these articles most often refer to patients within hospital care, there are also examples where the device is described as suitable for a broader range of individuals, both within and outside hospital care, with temporary or more long-term illnesses or physical impairments. For example, in the quote opening this article, it was stated that the Biblioscope would be enjoyable for 'anyone who is ill and wants to read but cannot hold a book'.[26] This is also evident in a newspaper advertisement from the company Kifa, a distributor of equipment for medical care and rehabilitation, where the Biblioscope seems to target anyone who is ill. Next to an image of a person lying in a bed under a reading device, the text reads: 'One does not have to be bored just because one is ill – Rent the wonderfully comfortable reading device, Biblioscope' (see figure 5).[27]

Similarly, on the final page of the advertising booklet discussed above, it is also stated that the reading device could be useful for a broad range of users:

Figure 5. Newspaper advertisement for Biblioscope in Svenska Dagbladet, February 19, 1956.

> It offers possibilities of recreation and occupation, as well as studies to: Paralyzed, Chronic invalids, Convalescents after surgical incisions or Temporarily sick Bereft of their mobility, Persons with weakened sight as there are possibilities to enlarge the text.[28]

In these examples, the reading device appears to target a broader range of users than hospital patients with long-term physical impairments. In this, one can assume that both Kifa and the company Biblioscope had an economic interest in targeting the device to as many different users as possible. But there are also some examples in press materials where its future potential for non-disabled users is speculated upon, envisioning a time when everyone could 'buy books on a roll of film'.[29] Although these examples are in the minority, they highlight that a specific medium's potential use and users are not set in stone. This corresponds with Mills and Sterne's discussion of the variety of impairments, where a reading device such as the Biblioscope could be helpful for individuals with both temporary and long-term impairments, both within and outside of hospital care, and eventually for everyone.

As mentioned, there are few examples in the press material where actual users of the Biblioscope are mentioned. Some articles include images of hospital patients using the device, and sometimes the names of these patients are given in the text. However, these images most often illustrate how the device should be used rather than highlighting the users' experiences. I have found only one example where the actual user is more explicitly presented and quoted in the text. The text concerns 27-year-old Annmagret, who was born with a severe physical impairment, and the new opportunities the Biblioscope had provided to her, especially for studying.[30] To some extent, the lengthy article highlights and discusses the prejudices of the time concerning people with physical impairments, such as the association between physical and mental impairment. However, the article has a highly derogatory tone. It addresses a non-disabled reader who is supposed to view Annmagret with pity, as exemplified in the ingress of the article: 'Look at these images of this hopelessly crippled girl [hopplöst vanförda flickan]. She looks happy. She is. These days.'[31] Here, Annmagret is almost presented as a child despite being 27 years old, and overall, the article has a highly patronising and reductive focus on her 'happiness' after being introduced to the Biblioscope. Thus, there is a variety in the press material about the Biblioscope. In most articles, it is presented as a technology for hospital patients with physical impairment, sometimes in a derogatory and patronising manner, as in the case of the article about Annmagret. In other cases, the Biblioscope appears to be of interest to a broader range of users both within and outside of hospital care.

The hospital library and the institutionalisation of the Biblioscope

When it comes to the question of institutionalisation, Gavrjusjov pointed out two other issues in his lengthy article that needed to be dealt with in addition to the construction of the device: an efficient and inexpensive process for producing filmed books, as well as an organisation for distributing both the reading devices and the book films. To produce reading devices and filmed books Gavrjusjov founded the company Biblioscope together with a colleague from the photographic business in Gothenburg.[32] Since conventional devices for microfilming printed materials were expensive and cumbersome, Gavrjusjov also developed a cheaper and more efficiently operated alternative for producing books to the Biblioscope. However, the filming of books was also carried out by the company Centrala filmarkivet in Stockholm. This company was a key player in the Swedish microfilm business and had, for example, been responsible for a

large-scale project on microfilming Swedish newspapers at the National Library in Stockholm.[33] Once again, this indicates the close entanglement between the Biblioscope and the more well-known and cultural-historically oriented microfilm business.

When it comes to distributing reading devices and filmed books to hospitals and healthcare institutions around Sweden, the institutionalisation of the Biblioscope can be compared to the institutionalisation process for similar media technologies. In an edited collection on the institutionalisation of educational cinema during the 1920s and 1930s, the editors point out that economic and material investments must always accompany any discursive promotion for using a specific media technology in an institutional context.[34] In the case of educational cinema, enthusiastic ideas for using film for educational purposes had to be supported by investments in projectors and the production and distribution of suitable films. In many countries, this led to a Catch–22 dilemma, where schools and educational institutions were reluctant to buy expensive projectors without a wide selection of suitable films, while film producers were unwilling to produce educational films without an established market for them. However, in the case of the Biblioscope, the institutionalisation appears to have been a relatively smooth process, based on the material I have been able to trace. This can be linked to the fact that the construction of the Biblioscope coincides with the establishment of a new organisation for hospital libraries in cities such as Stockholm and Gothenburg and an expanding provision of books and newspapers to hospitals and health care institutions around the country.[35] In Stockholm, the municipal board had decided that the municipal library committee should oversee the library services at all municipal healthcare institutions in the city. This was achieved by establishing proper libraries at the larger hospital and providing touring libraries to smaller institutions. To care for the needs of patients who, due to physical impairment. could not hold physical books, polio patients in particular, the library committee decided to acquire five reading devices of the kind Andrej Gavrjusjov had developed. With the help of a contribution from the National Polio Association, a more significant number of filmed books was acquired.[36] One issue that needed to be addressed was the matter of copyright and compensation for the authors of the books that were filmed and distributed by the city library. The legal representative of the Swedish Writer's Association stated that they could not grant general permission to film books and distribute them to hospital patients for free, as the copyright belongs to each author.[37] However, the organisation recommended that their members refrain from demanding compensation for filmed books used

in hospitals for patients who, due to illness or physical impairment, could not hold physical books, such as those paralysed by polio. In this, the association emphasised the importance of library staff overseeing the distribution to ensure that the books were only used by the specified target groups. Additionally, the microfilmed books should be included in the assessment of general library compensation for the authors.

Other hospital libraries across Sweden also acquired reading devices during the latter half of the 1950s. In an overview of technical aids at hospital libraries in Sweden from 1958, it is noted that, apart from the hospitals in Malmö and Uppsala, which used the American reading device with ceiling projection, nearly all other hospital libraries in the country used the Biblioscope.[38] However, since local hospital libraries across the country could only provide a limited number of filmed books, it was discussed from the beginning that a centralised national organisation should manage any growing demand for such books. Before a proper organisation for this purpose was established, the city library in Stockholm served as a central hub for lending filmed books to hospital libraries and other healthcare institutions nationwide.

From 1955 and for the next eleven years, the Biblioscope and filmed books are listed in the annual reports from the city library in Stockholm.[39] Up until the early 1960s, the number of titles, copies, and borrowed books grew steadily. After that, the increase in titles and copies plateaued while the number of lent books declined. From an all-time high of 617 borrowed books in 1959, the number had decreased to 129 by 1966, the last year for which reports are available. From 1967 onwards, Biblioscope is no longer mentioned in the annual reports, and I have been unable to find any information on why it was taken out of use.

Reading devices were also acquired at the hospital libraries in Gothenburg in the latter half of the 1950s. Between 1957 and 1961, an image of the Biblioscope appeared on the cover of the annual reports from the city library, alongside pictures of other municipal library services, such as book buses and sailors' libraries (see figure 6). During this period, Biblioscope was an integral and self-evident part of the municipal library's operations. In Gothenburg, the number of reading devices and filmed books is also listed in the annual reports until 1966. However, there are no statistics available after this year, and similarly to the situation in Stockholm, I have been unable to find any information on why they were no longer distributed.[40]

I have not been able to determine to what extent the Biblioscope was also used outside of Sweden. The existence of advertising materials in English, such as the booklet above, indicates

Figures 6. Cover of the 1960 annual report from the City Library in Gothenburg. Region- och stadsarkivet, Göteborg.

that there were plans for international distribution. Biblioscope and its introduction to Swedish hospitals are briefly mentioned in a German medical journal in 1955, where an image from the advertising booklet is reused.[41] Additionally, an article on the various uses of microfilm in libraries, published in a Swedish trade journal for documentation, briefly mentions that the Biblioscope was demonstrated at an international exposition for libraries and documentation centres in Brussels the same year.[42] In Gavrjusjov's extensive article on Biblioscope, he notes that there was significant interest in the device in Denmark, Norway, and Finland. According to Gavrjusjov, both Danish and Norwegian books had been filmed, and Danish hospitals were preparing an order of 25 reading devices.[43] The extent to which Biblioscope was actually used and institutionalised in countries other than Sweden, and for how long, is beyond the scope of this article.

A silent decline

In the mid-1950s, several competing reading devices for hospital patients with physical impairments were available. In Sweden, the device developed by Andrej Gavrjusjov was the most widely used, and for a decade it seems to have had a natural and institutionalised presence in hospital libraries across the country. However, despite its institutionalisation and an established system for distributing readers and filmed books, Biblioscope appears to have had a quite limited dissemination and life span as a media technology. In my research, I have not found any traces of the reasons for its decline. A media historical insight is that it is generally easier to find material about the introduction of a new media technology than to find information about why a technology is phased out, which often appears to happen gradually and quietly. After a few years of declining numbers of lent filmed books from the libraries in Stockholm and Gothenburg, Biblioscope was no longer part of their services and offerings from 1967 onwards. In trying to understand why it was taken out of use, it might be important to distinguish between the more enthusiastic speculations in the public press and the commercial ambitions of Kifa and the company Biblioscope and the actual way in which the Biblioscope was institutionalised at Swedish hospital libraries. This can be understood as different configurations of the Biblioscope, with the technology being the same but the context of its use varying across different institutional settings. The fact that the Biblioscope was configured primarily for patients with physical impairments within hospital care, particularly polio patients, might be why it was taken out of distribution. During the second half of the 1950s, an extensive program for polio vaccination was rolled out in Sweden, leading to a rapid decline in the number of new polio patients.[44] However, to the surprise of many and despite the vaccination program, a new outbreak occurred in Gothenburg in 1961. Since all those affected were unvaccinated, the outbreak led to a renewed interest in vaccination and polio was soon considered eradicated in Sweden.[45] Despite commercial ideas for a broader use of the Biblioscope and speculative ideas about its future potential, its institutional configuration was closely linked to a specific disease. Once vaccination against this disease was widely implemented, the Biblioscope was soon taken out of use and largely forgotten. In this, one might also ask: why wasn't the Biblioscope more widely used by patients confined to bed? And why was its configuration so limited? This could be linked to a number of legal, economic, social, and material factors. For example, it can be assumed that there would have been more significant demands for copyright allowance if the reading device and the filmed books had been distributed to a

broader audience rather than being limited to polio patients and others with more long-lasting impairments at the hospitals. One might also consider that there were not enough devices and filmed books available to support a more widespread distribution. Furthermore, one could also think that the social protocols, to use Lisa Gitelman's term, for reading microfilmed books were not widely established, which might be another reason why the Biblioscope was not seen as a viable option for individuals with more temporary physical impairments.

'Today for the ill, tomorrow for everyone': Media history, technology and disability

Even though the Biblioscope was a media technology with limited dissemination and a short life span, it is still interesting to see what more general insights can be drawn from this reading device concerning media history, technology, and disability. The Biblioscope was not a media technology that became obsolete because it was replaced by a new device that performed the same function faster or better. Despite ideas and hopes for a more widespread use of the Biblioscope, it was mainly aimed at a specific group of users in a specific social context: paralysed polio patients in hospital care. As the number of polio patients rapidly declined during the 1960s, the Biblioscope lost its primary users. But should the Biblioscope merely be considered a dead end in media history, of interest only as a media-historical curiosity? I would argue that the Biblioscope points to the many layers and the non-linearity of media history, as well as the diverse functions and uses of lens-based media technologies. The entry point for my research on Gavrjusjov was his work with commissioned films and the type of useful cinema that has received widespread attention with film and media historical research over the past decade.[46] Although Gavrjusjov made many sponsored and educational films within and outside of the healthcare sector during the 1950s and 1960s, the development of the Biblioscope highlights another type of utility and application of the photographic image and its technologies. Similarly, while microfilm is most often seen as a cultural heritage technology or a technology for information management, in the case of reading devices such as Biblioscope, it also served as a technology for everyday reading for individuals with physical disabilities. Furthermore, the Biblioscope also highlights the diversity of disabilities and demonstrates how a technology initially intended for patients with physical impairment within hospital care quickly came to be seen as potentially beneficial for a broader range of users. Thus, when a newspaper article with the headline 'Today for the ill, tomorrow for everyone' speculated

about the future uses of the Biblioscope and the possibility for everyone to purchase filmed books,[47] the prediction turned out both right and wrong. Neither the Biblioscope nor any other reading device for microfilmed books seems to have achieved wider dissemination. At the same time, the Biblioscope, the Pilgrim and the Ceiling Projector can be seen as forerunners to today's digital books on screens. As discussed in the introduction, a mid-20th-century reading device such as the Biblioscope can be compared to the history of talking books. In Sweden, the more widespread institutionalisation of the talking book took place in 1955, when magnetic tapes had been established as a new technological standard and a lending system of these books was set up at the library of 'De blindas förening', a national organisation for blind people, in Stockholm.[48] Thus, the institutionalisation of talking books for blind and visually impaired persons in Sweden occurred almost simultaneously with the Biblioscope becoming part of the services offered at hospital libraries. However, in contrast to the Biblioscope, talking books were not removed from distribution. Instead, they gradually integrated into the Swedish book culture and library sector. Over the years, the technology for talking books has shifted from phonograph records to magnetic tapes and cassettes, then to CDs, and now to digital files. Parallel to this, audiobooks have been established as a way of disseminating literature to the broader public, with audiobooks increasingly capturing a larger share of the book market. Thus, both electronic books read on portable screens and the audiobook – undeniable staples in the 21st-century media and literary landscape – have forerunners developed for disabled users, albeit with different material bases. This aligns with Mills and Sterne's point that many widespread media technologies that today seem self-evident were initially developed for individuals with disabilities. Departing from the configuration concept, this article has analysed the construction and institutionalisation of one specific reading device for individuals with physical impairment within a previously unexplored period and national context. By focusing on technology, material and economic factors, as well as intermedial relations, I have uncovered aspects of a largely understudied area within disability media studies and highlighted disability as a crucial element in media historical investigation.

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Notes

1. "Läsapparat för sjuka göteborgsuppfinning," *Göteborgs Handels- och Sjöfarts-tidning*, April 30, 1954, 1.
2. See for example: "Ny läsapparat för orörlig sjukling. Knapp Bläddrar i fotograferad bok," *Expressen*, April 30, 1954, 8; "Poliosjuk kan läsa mikrofilmad bok," *Dagens Nyheter*, January 2, 1955, 1; "Göteborgsuppfinning hjälper sängliggande sjuka att läsa," *Arbetet*, January 29, 1955, 1; "Självlysande bok bläddrar – till lisa för förlamningssjuka," *Svenska Dagbladet*, January 29, 1955, 10. The Biblioscope also appears in a report from a medical exhibition in Gothenburg in a newsreel produced by Svensk Filmindustri, one of the major Swedish film company: "Veckorevy 1955-09-26 (1955)," filmarkivet.se, https://www.filmarkivet.se/movies/veckorevy-1955-09-26/, Accessed May 16, 2024.
3. Cf.: Eric Kluitenberg, "On the Archaeology of Imaginary Media," *Media Archaeology: Approaches, Applications, and Implications*, eds. Erkki Huhtamo and Jussi Parikka (University of California Press, 2011), 48–69; Jussi Parikka, *What is Media Archaeology?* (Polity Press, 2012), 41–62.
4. Miriam De Rosa and Vinzenz Hediger, "Post-what? Post-when? A Conversation on the 'Posts' of Post-media and Post-cinema," *Cinéma & Cie. International Film Studies Journal,* vol. 26/27, no. XVI, 2017, 9–20.
5. The material was held over during the spring of 2024 and is, so far, not coherently organised or structured. For this article, I have been able to review what seems to be the relevant parts of the material.
6. Rachel Adams, "Afterword I: Disability in Disability Media Studies," *Disability Media Studies*, eds. Elizabeth Ellcessor and Bill Kirkpatrick (NYU Press, 2017), 357–364; Mara Mills and Jonathan Sterne, "Afterword II: Dismediation –Three Proposals, Six Tactics," *Disability Media Studies*, eds. Elizabeth Ellcessor and Bill Kirkpatrick (NYU Press, 2017), 365–78.
7. For a recent edited collection which goes beyond the European and North-American context, although only focusing on medial representations of disability, see: Tafadzwa Rugoho, ed., *Disability and Media: an African Perspective* (Palgrave Macmillan, an imprint Springer Nature Switzerland, 2024).
8. Mills and Sterne, "Afterword II," 367.
9. Mills and Sterne, "Afterword II", 371–372.
10. Matthew Rubery, *The Untold Story of the Talking Book* (Harvard University Press, 2016). See especially chapter 1 and 2, pp. 29–85.
11. Mara Mills and Jonathan Sterne, "Aural Speed-Reading: Some Historical Bookmarks," *PMLA/Publications of the Modern Language Association of America*, Vol. 135, no. 2, 2020, 401–411.

12. *Sextioandra årsberättelsen från Föreningen för bistånd åt vanföra i Göteborg: Redogörelse för Vanföreanstaltens i Göteborg verksamhet under år 1946* (Vanföreanstaltens tryckeri, 1947), 4.
13. In the first half of the 1950s, Gavrjusjov made two short films as part of his work within the national organisations, one about the daily life of a farmer with both his arms amputated and one about domestic aids in an apartment for persons with disability. A few years after the construction of Biblioscope, Gavrjusjov also made a short film as part of his work at the vocational school about a man's rehabilitation from polio. Karl Montan, *SVCK/SVCR:s historia åren 1950–92* (Stift. Svenska kommittén för rehabilitering SVCR, 1995), 49; Andrej Gavrjusjov, "Break down the walls (Text to the film)," Film Script, "Filminspelningar," 1:F1:11, Svenska Centralkommittén för rehabilitering (SVCR), Riksarkivet, Stockholm (Henceforth: SVCR:RAS); Sign. Big Ben [Uno Asplund], "Göteborgska filmpionjärer," *Göteborgs Handels- och Sjöfartstidning*, March 16 1963. Invitation cad to the première of *Starten går om*, November 28 1957 at Änggårdens yrkesskolor, Andrej Gavrjusjov's collection, Riksarkivet, Gothenburg (Henceforth: AG:RAG).
14. Gudrun Nyberg, *Medicinen, människorna, vården*: *Hundra år i Göteborg*, (Carlssons, 2017), 233-234.
15. Three such institutions were established in Sweden in the 1890s through philanthropic donations. Throughout the first half of the 20th century, they gradually received increasing financial and institutional support from the state, which ultimately assumed responsibility for these vocational schools and their orthopaedic treatment during the 1960s and 1970s. The idea behind these institutions was to combine orthopaedic treatment with vocational training, with the aim of rehabilitation as well as to provide the patients with education in specific occupations, such as cobbler, bookbinder, or – in Gavrjusjov's case – practical occupations related to photography, for example medical photography or retouching. Lotte Holme, *Konsten att göra barn raka: Ortopedi och vanförevård i Sverige* (Carlssons, 1996); Montan, *SVCK/SVCR:s historia*. In the late 1940s and during the 1950s, there were discussions about the problematic term 'vanför' and whether the vocational schools should be given more neutral names. In 1949, the name of the school where Gavrjusjov worked was changed to Änggårdens yrkesskolor [Änggården's Vocational School], but the old name continued to be used interchangeably throughout the 1950s. Regarding Svenska Vanföreanstalternas centralkommitté, the national organisation for these schools, the name was changed only in 1964 to Svenska centralkommittén för rehabilitering [The Swedish central committee for rehabilitation]. Montan, *SVCK/SVCR:s historia*, 30.
16. Lisa Gitelman, *Always Already New: Media, History and the Data of Culture* (MIT Press, 2006); Lisa Gitelman and Geoffrey B. Pingree, eds., *New Media 1740–1915* (MIT Press, 2003).
17. "Ny filmbok för rörelseskadade. Tå- eller fingeravtryck 'bläddrar'," *Expressen*, 22/5 1955, 28.

18. See especially the volume: 'Tekniska hjälpmedel i den dagliga livsföringen' ['Technical aids in daily life']: 1:F V:1, SVCR:RAS.
19. "Read of the Ceiling – Effortlessly with a Microfilm Ceiling Projector", Advertising booklet, Projected Books inc. Undated, 1:F V:1, SVCR:RAS. See also: Kurtz Myers and Frances A. Hannum, "Projected Books: Detroit; Projected Books: Ann Arbor", *ALA Bulletin*, Vol. 41, no. 6, part I, (June 1947), 163–169.
20. Sir John Forsdyke, "Microfilms for the Disabled", *Aslib Proceedings*, Vol. 4, no. 1 (February 1952), 39–40.
21. See for example: Matts Lindström, *Drömmar om det minsta: Mikrofilm, överflöd och brist 1900–1*970 (Mediehistoriskt arkiv, 2017).
22. Andrej Gavrjusjov, "Biblioscope. En läsapparat för sängliggande," *Svensk vanföretidskrift*, no. 4 1955.
23. This issue can be compared to the introduction of film and lantern slides in educational settings during the first decades of the 20th century, where the need for, and process of, darkening the room was a recurring issue when the projectors were used in classrooms rather than purpose-built venues. See for example: Jamilla Notebaard and Nico de Klerk, "The Photographic Turn in Visual Teaching Aids: Films and Slides for Schools in the Netherlands, 1911–1926," *Learning with Light and Shadows: Educational Lantern and Film Projection, 1860–1990*, eds. Nelleke Teughels and Kaat Wils (Brepols, 2022).
24. "Biblioscope", Advertising Booklet, Biblioscope and Centrala filmarkivet Sweden, undated, AG:RAG.
25. See for example: "Göteborgsuppfinning hjälper sängliggande sjuka att läsa," *Arbetet*, 1.
26. "Läsapparat för sjuka göteborgsuppfinning", *Göteborgs Handels- och Sjöfarts-tidning*, 1.
27. "Man behöver inte ha tråkigt för att man ligger sjuk… hyr den underbart bekväma läsapparaten Biblioscope," Advertisement for Kifa, *Svenska Dagbladet*, February 19, 1956, 11.
28. "Biblioscope," Advertising Booklet.
29. "Idag för sjuka imorgon för alla," *Aftonblade*t, January 6, 1955, 14; "Nytt och bekvämt sätt att ligga och läsa" *Aftonblade*t, January 6, 1955, 14.
30. "Nu kan jag skratta och tro," *Arbetet*, March 28, 1960, 3.
31. "Nu kan jag skratta och tro," 3.
32. "Kungörelser," *Göteborgs Handels- och Sjöfartstidning*, July 15, 1954, 9.
33. Lindström, *Drömmar om det minsta,* 137.
34. Marina Dahlquist and Joel Frykholm eds., *The Institutionalization of Educational Cinema: North America and Europe in the 1910s and 1920s* (Indiana University Press, 2019).
35. Maja Spångberg ed., *The Hospital Library in Sweden* (The Library Association, 1962); "Sjukhus och ålderdomshem får ordentliga bibliotek," *Dagens Nyheter*, January 2, 1955, 6; "Med bokvagn och m/s Falken

på väg till boken. Folkbiblioteket i blickpunkt 1," *Göteborgs Handels- och Sjöfartstidning*, October 3, 1957, 13; Maja Spångberg, "Nya bibliotekslokaler: Göteborgs sjukhusbibliotek," *Biblioteksbladet*, no. 10 1959, 749–751.

36. Protocol Stockholms stads biblioteksnämnd, § 14, April 29, 1955, A1 AA:36, Biblioteksnämnden Stadsarkivet, Stockholm (Henceforth Bi:Sa:S); Letter from Krister Gierow till Riksföreningen mot Polio, December 9, 1954, Supplement 12c to Protocol Stockholms stads biblioteksnämnd, April 29, 1955, A1 AA:36, Bi:Sa:S.
37. Letter from Ulf von Konow, legal representative Sveirges författareförening, to Maja Spångberg, Sjukhusbiblioteket, Göteborg, December 6, 1954, F 12 S:1, Göteborgs kommun, Biblioteksnämnden, Regionarkivet, Göteborg (Henceforth: GkBi:ReA:G).
38. Brita Arborelius, "Technical aids for the hospital library and patients," *The Hospital Library in Sweden,* ed. Maja Spångberg (The Library Association, 1962), 18.
39. Annual reports, Biblioteksnämnden i Stockholms stad, 1955–1966: B1:1 & B1:2. Bi:Sa:S.
40. Annual reports, Göteborgs stads folkbibliotek, 1955–1966. F 8 C:2, GkBi:ReA:G.
41. "Biblioscope, ein schwedisches Lesergerät für Bettlägerige," *Das Krankenhaus*, no. 9 1955, 367.
42. Björn Tell, "Mikrofilmtekniken och biblioteken," *Tidskrift för dokumentation*, no. 5, 1955, 53.
43. Gavrjusjov, "Biblioscope," 81.
44. Nyberg, *Medicinen, människorna, vården*, 233–234.
45. Nyberg, *Medicinen, människorna, vården*, 121.
46. Charles R. Acland and Haidee Wasson, eds., *Useful Cinema* (Duke University Press, 2011).
47. "Idag för sjuka imorgon för alla," *Aftonbladet*, January 6, 1955, 14.
48. Beatrice Christensen Sköld, *Talboken 50 år* (Talboks- och punktskriftsbiblioteket, 2005), 7.

Biography

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