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# Practise, Organisation and Quality Control of Microfilming Projects

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## INTRODUCTION

Nicholson Baker, his name has already been mentioned several times during this conference. In 1994 he published an erotic fantasy novel: *The Fermata.* I will not discuss the contents of this novel before this audience, but I want to read to you a quotation:

"The particular library table I had chosen with some care, of course. It had one other resident, a petite woman in her late thirties with curly salt and pepper hair (…). She was looking through several piles of microfilm copies, sorting them and and circling paragraphs ever so often. She spun her pen silently on the table as she read, as if it was a spinner in a child's game. Her eyes moved with impressive speed over the chemical smelling, legal sized pages, but she looked tired from spending hours gazing at the grey light in one of the libraries horrible microfilm readers, contending with the trembling magnified crotch hairs and scratches on its screen."

It appears that Baker already was concerned about microfilming and reading equipment by that time. Seven years later he launched his famous campaign against libraries' abuse of microfilming as an excuse for destroying originals, mainly newspapers and periodicals in his book *Double Fold* (Baker, 2001).

## NEW MAGIC

From both the quote above and from his book I have concluded that in his view not microfilming is bad, but bad microfilming is bad. For many years in libraries there was hardly any concern about the quality and durability of microfilms. It was just magic: thousands of volumes could be reduced to a neat row of small boxes. And these boxes contained all the information that was in the originals. And using new technical equipment could easily retrieve this information. Sadly, many microfilms dating from the 20th century are of bad quality. We cannot read them anymore and in many cases the originals are no longer available. In this day and age we witness a similar belief in new technology. New magic. In all aspects there is a striking similarity with the situation in

the early days of microfilming. Digitisation is the magic word. And again, high expectations are going alongside with much ignorance.

## METAMORFOZE

In the national preservation program of the Netherlands, Metamorfoze, we have some experience with both microfilming and digitisation projects. Quality and durability are our highest concern. But that's not all. There are also issues such as planning and preparing, communication and logistics. It's not just: run it through the camera, or put it on the scanner. It's a more complicated than that. I will present a short overview of our experiences which may hopefully contribute to a better understanding of the succes factors *and* the pitfalls of large scale preservation microfilming projects.

I would like to start with a short overview of our programme. Metamorfoze was launched in 1997. It is financed by the Ministry of Education, Culture and Sciences. The KB acts as coordinator of the program. It aims at securing information from the 1840-1950 period, which is threatened by acid paper decay. As preservation method we apply microfilming, acid-free wrapping and boxing, adequate storage of the originals, and on a smaller scale digitisation and deacidification. Metamorfoze is based on selection and priorities. The most important criteria are: Dutch origin and national importance. In 20 years we will be able to preserve all books, newspapers, periodicals and manuscripts that match these criteria. A large number of heritage institutions in the Netherlands participate in Metamorfoze. Such as libraries, archives and museums. Metamorfoze provides a subsidy of 70% for preservation projects. Core business of Metamorfoze is microfilming. Of each book, periodical or document in the Metamorfoze programme we make three microfilm copies: a master, a duplicate or printing master and a user's copy. We use low contrast 35 mm film for manuscript collections and illustrated periodicals, high contrast 35 mm for newspapers and high contrast 16 mm for books. As user's copy we use silver or diazo film or microfiche.

## MICROFILMING: HISTORY & DEVELOPMENT

Microfilming originated in the nineteenth century. One of the first examples was used during the French-German war when the Germans surrounded Paris. It was impossible to get messages or news past the German lines. The French developed a technique of microphotography, which enabled them to send messages by pigeons flying high above the enemy. Two more wars were necessary to advance microfilming to a stage that it could be widely used for various purposes. The possibility to transfer information in a

condensed form made the microfilm popular in areas where secrecy was involved. During the Cold War microfilming was associated with espionage and secret services.

Microfilming has developed through the years. The material itself has been improved enormously. The nitrate microfilms of the early years were very instable and dangerous. They could combust spontaneously, causing much damage. The acetate microfilms that were introduced later are more stable, but through time they start to suffer from several forms of decay. They become cockled or stick to each other. The polyester microfilms that are being used nowadays are stable and can be kept for centuries in cold storage. Furthermore, technical equipment has developed through the years. Camera's, methods for developing microfilm and readers can now match up to the very high standards that preservation microfilming demands. And microfilming is still developing further, mostly in relation to digitisation.

## PRESERVATION MICROFILMING

When Metamorfoze started in 1997 there was no doubt whatsoever about the technique to be applied to secure the information of the endangered paper documents. Digitisation was in its early stage. Images were of bad quality, and there were hardly any techniques for retrieval or long-term preservation. Microfilming was cheap and safe, and could be easily applied on a large scale. Long-term preservation of microfilms requires simple conditions and with minimal technical effort retrieval of information from microfilms in the future is possible. Even after a nuclear holocaust or any other worldwide disaster destroying all our technology. The only thing you will need is light and a magnifying glass. This does not mean that producing these microfilms is a simple thing. If we are talking about *preservation microfilming* we have to meet high standards. It's all about quality. The factors involved have to do with optical techniques, chemicals, high tech machinery that has to be well maintained, planning, organisation, workflow, *and* the human factor. On all of these levels things can go wrong. And then you end up with nothing. So we have to be very well prepared, make sure that technical facilities are adequate, logistics and administration is well planned and organised, and that operators are trained and instructed. And last but not least, constant monitoring of the process and checking the results is necessary.

## MICROFILMING: LIMITATIONS

We have to accept that microfilming has its limitations. High quality preservation microfilm can get very close to the original, but when colour is involved it is inevitable

that we lose information. Preservation Colour microfilm exists but it is expensive, so it can only be applied on a smaller scale in cases where it is absolutely necessary (botanical and zoological books, atlases). Microfilms have to be read on site. You have to go to the library that owns the originals. And finally: access is limited. You can only browse the films or fiches, and you may even get seesick before you find the document you are looking for. Digitisation can compensate these disadvantages. Digital images contain colour, they can be viewed on every location and there are many ways to give further access to the material. So a combination of preservation by old and stable microfilming and access by new and sexy digitisation seem to be a good solution. *The best of both worlds*.

Microfilms may well serve as intermediates for digitisation. The scanning of the microfilms instead of the originals has a number of advantages. In the Netherlands about 10 commercial firms produce microfilms for a wide range of purposes. Metamorfoze invited these companies to participate in the program. They had to perform a test to establish whether they were able to match the Metamorfoze Standards. Only two companies performed according to our standards and are now participating in the program. This seems to be a low score. Why is this? There is a lot of money involved. Government money. Security. The answer is that preservation microfilming requires investments: testing, experimenting, training of staff, and pilot projects. It requires special equipment for low contrast microfilming and conversion to microfiche. Production is labour intensive, and profits are relatively small. And finally there are the high quality demands. The two microfilming companies in the Netherlands that took the challenge have been confronted with all these problems. But they have also profited. The coaching by the quality managers of the Metamorfoze Bureau, has contributed to an overall improvement of the quality of their products. So they can carry out similar commissions for other customers.

## QUALITY DEMANDS: CONTENT

Now I would like to elaborate a bit on the quality demands for preservation microfilming. Partly they refer to the *technical* qualities of the microfilms themselves. I will not repeat Hans van Dormolen who has already covered this subject extensively. I would like to focus on three other important factors: *content quality, communication and logistics.* And this, of course, from the point of view of the customers: librarians, archivists, collection keepers and project managers.

Let's start with content quality. The value of a microfilm made for preservation purposes is not only determined by the technical quality, but also by the arrangement of the originals on the exposures. If someone uses an old paper document there is a certain

logic in the way it has been composed. And this may not be the logic of the person reading the document. For instance: insofar as we are still writing letters, we use a single A4 piece of paper typed from top to bottom. And add a next piece of paper if necessary. This seems logical. But 19th and early 20th century writers had very different ways to compose their letters. First of all, they wrote them by hand on sheets A4 folded together, creating a quire as in a book or periodical. And paper was expensive. So they used every part of the paper, writing in all directions in the margins of the text or just continued on page one writing vertically through the horizontal text already written. As many of you know this is no exception in the period we are dealing with. If we are putting these correspondences on microfilm we must constantly be aware of two things: the authenticity of the original document and the ability of the present or future user of the surrogate to understand the document.

Just to put it plain and simple: if you have a letter written on 8 pages consisting of two pieces of folded A4 paper, and the operator takes each paper separately and puts it on microfilm, front and back, the user of the microfilm has a puzzle to solve before he can read the text. And there are two other negative factors involved: the original texts are difficult to read because they are in 19th century handwriting. And furthermore, reading microfilms or microfiches is no pleasure, as Nicholson Baker rightly observed in *The Fermata* and almost every speaker before me has stated. So if you don't want to make microfilms more unpopular than they are already to users, you should give much attention to all peculiarities of the originals to get a maximum result. Not only handwritten material has its specific demands. You might also be dealing with books with folded maps or plates, newspapers with smaller issues bound into them or periodicals with supplements.

How do we make sure that all this difficult material gets the proper treatment? Here there are two keywords involved: preparation and communication. Preparation is needed to arrange the content, establish what additional information has to be microfilmed too, what to do with blank pages, postcards, newspaper clippings, drawings, damaged originals, and objects. This means going through the whole collection before microfilming, preparing for all eventualities and making decisions. If necessary these decisions have to be explained to the user. Suppose we have decided always to film blank pages, to fully represent the documents on film. Then we come to a notebook of which only 5 pages have been written on and 45 are blank, and we might decide it useless to film all of these. Then we have to add information on the microfilm, which explains to the user that the 45 empty pages have not been filmed. The user must never be in doubt when something seems to be missing. He must always be able to reconstruct the original.

Finally we have to estimate the number of exposures involved. This is the most difficult part. From our experience with some 150 large-scale microfilming projects there has

hardly ever been an accurate estimate. But if the projects are properly prepared the deviations in numbers of exposures between estimate and real numbers can be brought back to reasonable proportions. In 2002 Metamorfoze has published a handbook which contains a chapter that covers most of the eventualities we may encounter regarding to content, and presents a number alternatives for handling these.

## COMMUNICATION

Then there is the element of communication, which is closely related to the preparations. All decisions that we take on how we wish the material to be filmed have to be communicated to the contractor. The Metamorfoze programme has a number of general rules or standards regarding both technical and content quality. The companies that produce microfilms for Metamorfoze are aware of these rules and work accordingly. But practice has shown that the great variety of the material often requires exceptions for individual projects. Decisions must be taken and these must be put into clear-cut instructions for the operators. This seems to be simple and straightforward, but it isn't. The first problem is that the collection keepers are not always capable to look at their collections with the eye of someone who has no knowledge of the collection and no training in philology, palaeography and bibliography. So they are taking things for granted in the microfilming process that seems logical to *them*. But these things are sometimes not at all logical from the operator's point of view. The second problem is that the customer assumes that the operator will take decisions while filming or give feedback when choices have to be made. Often this does not happen. All attention of the operator goes to the technical quality of the process: measuring light, density, and checking variations in the quality of the originals. This is difficult enough. And the production level has to be maintained. So an operator cannot be expected to make decisions on how content is represented. You cannot expect him to read a manuscript letter to find out how the text runs. It's not his task, there is no time, and he is not trained to do so. The third problem in communication is that there is a category of collection keepers who avoid the pitfalls of taking things for granted and letting the operators decide. They fall into an even larger pit: they write extensive instructions on a lot of paper in an academic language. No one will read these. The head of the preservation-microfilming unit of the KB once told me that he always translated the instructions of the customers in the language of his discipline.

To conclude: invest time in preparations, try to look at your collection from an outside point of view and communicate in a straightforward, clear-cut manner your visions to the contractor.

## LOGISTICS

In mass preservation projects we are dealing with old material that is weak and difficult to handle. Moreover it is rare and precious. On the other hand large quantities are involved. This is a complicating factor. To avoid risks of material from getting lost or damaged we have to give much attention to logistics and the monitoring of the process. The high quality demands sometimes lead to reruns of material already been filmed and returned to the customer. This means extra traffic. To avoid problems it is advisable to split up large microfilming projects into smaller portions and start with the next portion after the whole process is completed and checked. It is important to check each portion after delivery on content. Never postpone checking until after the completion of the whole project. It is very important to keep a good administration of all phases of the process. You must always be able to verify in what stage the process is and where the originals *and* surrogates are. For Metamorfoze the Amsterdam University Library has developed a database in Access, which enables us to do so. This database also generates the metadata for the microfilms, the so-called leader. And of course, here too, communication is important. Regular meetings of all those involved in the project and good contact with the contractor is necessary.

## CONCLUSION

Let me sum up the most important factors that make a microfilming project successful:

- Thorough preparation of the material, bearing in mind the point of view of the operator and the future user.
- Make a well-considered choice from the different techniques that are being offered. For instance high or low contrast microfilming, 16 mm or 35 mm film, microfilms or microfiches as user's copy, using diazo or silver.
- Make sound agreements with the contractor, inspect the material together with the contractor beforehand, and take care of short, clear-cut instructions.
- Regular feedback and regular consultation is necessary.
- Split up large projects in portions, and check each portion after processing on content.
- Always bear in mind quality, this is the crucial factor.

I repeat again: it is essential that large scale microfilming projects keep focusing on quality. That is important for the users of microfilms at this moment, who are deprived of their paper documents and demand a good surrogate. It is necessary for the future users of the microfilms who must be able to read these documents in years to come. And finally, it is necessary if we want to use microfilms as an intermediate for digitisation. At

this moment we are in *a hybrid age*. No digitisation without microfilming, but increasingly the other way around. Future developments may change this approach. *If* digitisation is the final answer, we will need good microfilms. For the originals will not be there anymore.

## REFERENCES

Baker, N. *Double Fold: Libraries and the Assault on Paper*. Random House, 2001. ISBN**:** 0375504443.

## WEB SITES REFERRED TO IN THE TEXT

Metamorfoze. http://www.kb.nl/coop/metamorfoze/home.html