

UNESCO Memory of the World Programme

Sub-Committee on Education and Research

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Editorial

by Lothar Jordan

When I made my first contacts with MoW and with UNESCO and learned about its constitution, this constitution seemed to me very much under the spell of the terrible World War II. After the end of the Cold War, the German re-unification and a growing cooperation in Europe the beginning of the 21st century seemed – in my eyes - to give good reasons for more optimism than working for the “defences of peace”. Now, at the end of 2017, it is with sadness that I acknowledge the wisdom of this constitution, in the face of wars, civil wars, terrorism, and growing tensions around the world. The need for an education for peace is growing again strongly. MoW and its registers have a very important role to play in it.

We start this Newsletter with an outstanding document of the MoW Register, a letter from Gandhi to Tolstoy, just one document from that archive of the “Tolstoy’s Personal Library and Manuscripts, Photo and Film Collection“ that was inscribed in the Memory of the World Register in 2011. To my knowledge, this is one of the most fascinating letters of the 20th century. I came to learn about it through the “International Seminar of Tolstoy’s and Other Classical Writers’ Translators, dedicated to the 25th anniversary of the UNESCO programme Memory of the World” (25-29 August 2017, at Yasnaya Polyana, Russian Federation; see the Report in the SCEaR Newsletter 2017/3). For opening my eyes to the richness of this letter I thank film makers Galina Evtushenko and Anna Evtushenko, and Galina Alexeeva. My thanks also go to the State Museum of Tolstoy in Moscow for allowing us to show this letter. By showing it, we want to make visible an item of the MoW Register that can be seen as building a bridge between Asia, Africa, and Europe with the intention of including the whole world. The exchange between Gandhi and Tolstoy surely fulfills the expectation of the UNESCO constitution: “peace must [...] be founded, if it is not to fail, upon the intellectual and moral solidarity of mankind”.

But to show it in the *SCEaR Newsletter* requires a further reason. And indeed we follow Galina Alexeeva’s article that underlines the significance of this letter for education towards peace and non-violent solution of conflicts. The Register, while not forgetting the dark sides of humanity, is a good reservoir for such intentions.

One of the dark sides of humanity was the destruction of heritage, documentary and other, in Timbuktu. Papa Momar Diop writes about the destruction, the efforts to rescue and safeguard the documents there, and the fact that the inscription of documents in the Memory of the World Register encourages their use for education and research.

The Deutsches Museum (‘German Museum’) in Munich was the pioneer of museums of technology. Even after a hundred years its concept seems distinctly modern, as it wanted to combine the functions of an archive, a library, and a museum, as well as be a place of research, while at the same time fulfilling all the specific requirements of each of its parts. As fascinating as this modern hybrid vision is the fact that the first collections of this museum were based on wish lists by famous scientists such as Wilhelm Conrad

Röntgen, lists that are – when seen from our contemporary perspectives - fascinating documents for examining the cooperation between science and a memory institution.

Business matters: The SCEaR was created in 2013. According to the Statutes the Chair of the SCEaR and its other members had to be determined anew after four years. At the end of October this year the IAC re-appointed the SCEaR Chair, and in consequence there were a few changes. Roslyn Russell and Martin Porter, my co-editors, stayed on board. Helena Asamoah-Hassan (Ghana) and John van Oudenaaren (USA) left the SCEaR. Our thanks go to them for their engagement in the first years of our Sub-Committee. Their experience was a great help for our pioneer endeavour. As Director of the World Digital Library of the Library of Congress, Washington D.C., John van Oudenaaren stays a strong partner of the UNESCO Memory of the World Programme. We welcome Papa Momar Diop (Senegal, see his article on pp. 10-14) and Luciana Duranti (Canada). Both are new to the SCEaR, but well-experienced in MoW and UNESCO and in archival studies.

We wish all our readers, their colleagues, and their families, a very good and peaceful New Year 2018. And we invite our readers and partners again to take part actively in the Memory of the World SCEaR Newsletter and thus help to develop the Memory of the World Programme.

Mahatma Gandhi to Leo Tolstoy, 1 October 1909

Westminster Palace Hotel,
4, Victoria Street, S. W.
London
1st October 1909.

Sir,

I take the liberty of inviting your attention to what has been going on in the Transvaal, South Africa, now for nearly three years.

There is in that Colony a British Indian population of nearly 13,000. These Indians have for several years laboured under various legal disabilities. The prejudice against colour and in some respects against Asiatics, is intense in that country. It is largely due, so far as Asiatics are concerned, to trade jealousy. The climax was reached three years ago, when a law was passed specially applicable to Asiatics, which I and many others considered to be degrading and calculated to unman those to whom it was applicable. I felt that submission to a law of this nature, was inconsistent with the spirit of true religion. I and some of my friends were, and still are, firm believers of the doctrine of non-resistance to evil. I had the privilege of studying your writings also, which left a deep impression on my mind. British Indians, before whom the position was fully explained, accepted the advice that we should not submit to the legislation, but that we should suffer imprisonment, or whatever other penalties the law may impose for its breach. The result has been that nearly one half of the Indian population, that was unable to stand the heat of the struggle, to suffer the hardships of imprisonment, have withdrawn from the Transvaal rather than submit to a law which they have considered degrading. Of the other half, nearly 2,500 have for

conscience's sake allowed themselves to be imprisoned - some as many as five times. The imprisonments have varied from four days to six months; in the majority of cases with hard labour, Many have been financially ruined. At present there are over 100 passive resisters in the Transvaal gaols. Some of these have been very poor men, earning their livelihood from day to day. The result has been that their wives and children have had to be supported out of public contributions, also largely raised from passive resisters. This has put a severe strain upon British Indians, but in my opinion they have risen to the occasion. The struggle still continues and one does not know when the end will come. This, however, some of us at least have seen most clearly, ^{viz. -} that passive resistance will and can succeed where brute force must fail. We also notice that in so far as the struggle has been prolonged, it has been due largely to our weakness, and hence ^{is} a belief having been engendered in the mind of the Government that we would not be able to stand continued suffering.

Together with a friend, I have come here to see the Imperial authorities, and to place before them the position, with a view to seeking redress. Passive resisters have recognised that they ~~could~~ ^{should} have nothing to do with pleading with the Government, but the deputation has come at the instance of the weaker members of the community, and it therefore represents their weakness rather than their strength. But in the course of my observation here, I have felt that if a general competition for an essay on the Ethics and Efficacy of Passive Resistance were invited, it would popularise the movement and make people think. A friend has raised a question of morality in connection with the proposed competition. He thinks that such

an invitation would be inconsistent with the true spirit of passive resistance, and that it would amount to buying opinion. May I ask you to favour me with your opinion on the subject of morality. And if you consider that there is nothing wrong in inviting contributions, I would ask you also to give me the names of those whom I should specially approach to write upon the subject?

There is one thing more, with reference to which I would trespass upon your time. A copy of your letter addressed to a Hindoo on the present unrest in India, has been placed in my hands by a friend. On the face of it, it appears to represent your views. It is the intention of my friend at his own expense, to have 20,000 copies printed and distributed and to have it translated also. We, have, however not been able to secure the original, and we do not feel justified in printing it, unless we are sure of the accuracy of the copy and of the fact that it is your letter. I venture to enclose herewith a copy of the copy, and I should esteem it a favour if you would kindly let me know whether it is your letter, whether it is an accurate copy and whether you approve of its publication in the above manner. If you will add anything further to the letter, please do so. I would also venture to make a suggestion. In the concluding paragraph you seem to dissuade the reader from a belief in reincarnation. I do not know whether (if it is not impertinent on my part to mention this) you have specially studied the question. Re-incarnation or transmigration is a cherished belief with millions in India, indeed in China also. With many one might almost say it is a matter of experience and no longer a matter of academic acceptance. It explains reasonably the many mysteries of life. With some of the passive resisters who have gone through the gaols of the

of the Transvaal, it has been their solace. My object in writing this is not to convince you of the truth of the doctrine, but to ask you if you will please remove the word "re-incarnation" from the other things you have dissuaded your reader from in the letter in question. You have quoted largely from Krishna and given reference to passages. I should thank you to give me the title of the book from which the quotations have been made.

I have wearied you with this letter. I am aware that those who honour you and endeavour to follow you have no right to trespass upon your time, but that it is rather their duty to refrain from giving you trouble, so far as possible. I have, however, who am an utter stranger to you, taken the liberty of addressing this communication in the interests of truth, and in order to have your advice on problems, the solution of which you have made your life work.

With respects,

I remain

Your obedient servant,

M. Gandhi

Enclure

Count Leo Tolstoy,
Yasnaya,
Polyana,
Russia.

Tolstoy and Gandhi: The Idea of Non-Violent Resistance

by Galina Alexeeva

In 2011, Tolstoy's personal library at Yasnaya Polyana and the Collection of Tolstoy's manuscripts in Moscow were inscribed in the Memory of the World Register. Through the documents preserved in the collections in both museums of Leo Tolstoy, we can trace the relationship and communication between many historical figures. Here I want to examine briefly just one such relationship and communication – between Leo Tolstoy and Mahatma K. Gandhi.

In 1908, Tolstoy wrote an essay *A Letter to a Hindu* (a reply to Taraknath Das, an Indian revolutionary), which Gandhi read in London and greatly appreciated. For Gandhi Tolstoy was a man who deeply influenced his spiritual, moral, and political evolution. Tolstoy's tract *The Kingdom of God is within you* left an abiding impression on him. On 1 October 1909, a year before Tolstoy's death, Gandhi decided to write a letter to Tolstoy (see this *SCEaR Newsletter*, pp. 4-7), in which he described the situation with the Indian population in Transvaal: "The prejudice against colour and in some respects against Asiatics, is intense in that country. [...] The climax was reached three years ago, when a law was passed specially applicable to Asiatics, which I and many others considered to be degrading and calculated to unman those to whom it was applicable. I felt that submission to a law of this nature, was inconsistent with the spirit of true religion. I and some of my friends were, and still are, firm believers of the doctrine of nonresistance to evil. I had the privilege of studying your writings also, which left a deep impression on my mind".¹

Remarkable, too, is Gandhi's idea of using "a general competition for an essay on the "Ethics and Efficacy of Passive Resistance"" as a didactic tool to spread this idea.

Tolstoy responded in October 1909, saying that he wished "God helps our dear brothers and co-workers in the Transvaal" in their non-violent fight.² He wrote that "fight between gentleness and brutality, between humility and love on one side, and conceit and violence on the other, makes itself ever more strongly felt here to us also—especially in the sharp conflicts between religious obligations and the laws of the State expressed by the conscientious objection to render military service".³ Gandhi was extremely happy to get a message from Tolstoy and he immediately began sending Indian magazines such as *Indian Opinion*, and *Indian Home Rule* to Tolstoy's home at Yasnaya Polyana. After receiving the *Indian Home Rule* magazine, Tolstoy wrote to Gandhi on 8 May 1910: "I read your book with great interest because I think the question you treat in it - the passive resistance — is a question of the greatest importance, not only for India

¹ Manuscript Department, State Museum of Tolstoy in Moscow.

² *Collected Works* of L. N. Tolstoy in 90 vols. Moscow; Leningrad, 1928-1958. vol. 82, p. 110.

³ *Ibid.* vol. 82, pp. 137-140.

but for the whole humanity”.⁴ Tolstoy thought that Gandhi was “a very close person to him” with his ideas of non-violent resistance.

Tolstoy’s last letter to Gandhi was written in September of 1910, just a month before his departure from Yasnaya Polyana; that letter was about non-violence.⁵ In 1909, Tolstoy received a book by Joseph John Doke: *M. K. Gandhi: An Indian patriot in South Africa* (... London: The London Indian Chronicle [1909]). There are numerous penciled notes made by Tolstoy in the book. He already knew about Gandhi and was very much interested to learn more about him. He wrote that the book “interested me much and gave me the possibility to know and understand you better”.⁶

Thus those two documents from the Tolstoy’s Museums’ collections, a part of the Tolstoy documentary heritage, representing a part of the cultural and spiritual heritage of mankind, vividly demonstrate a great dialogue between two preachers of non-violence and non-violent resistance – an outstanding legacy of love, peace, brotherhood, and non-violence. The letter we show here in this newsletter is not only of outstanding importance for research, but could and should be of high importance for an education in the spirit of UNESCO and its constitution, with a view to building peace in the minds of men and women, showing a congeniality and exchange of such ideas between different regions, Asia and Europe, as well as, in this letter, South Africa.

Galina Alekseeva, Dr. phil. habil., Head of Academic Research Department, State Museum-Estate of Leo Tolstoy at Yasnaya Polyana; President of the ICLCM (International Committee for Literary and Composers’ Museums in ICOM); Corresponding Member of the MoW SCEaR.

⁴ Ibid. vol. 81, p. 247.

⁵ Ibid. vol. 82, pp. 137-140.

⁶ Ibid. vol. 81, p. 247.

Report

Manuscripts of Timbuktu in the International Register Memory of the World: Recognition of an Irreplaceable Documentary Heritage, and an Outlook on Education and Research

by Papa Momar Diop

About two months ago, Madam Irina Bokova, Director General of UNESCO, approved the inscription in the Memory of the World (MoW) Register of three elements of Malian documentary heritage. Those are manuscripts rescued from Timbuktu during the jihadist attacks of 2012 against the cultural heritage of Mali. Undoubtedly, the manuscripts are an important part of the documentary heritage, reflecting the intellectual, religious, social and cultural life of Timbuktu and Western Africa, mainly during the period from the twelfth to the sixteen centuries.

During that period from 12th century to the 16th century, around 25,000 students came from what is today known as Mali as well as its surrounding countries and lived in Timbuktu. Those documents, written mainly in Arabic and Fulani “*ajami*”,⁷ are on topics as diverse as law, botany, astronomy, philosophy, Islamic guidance, history, politics, medicine, and pharmacy. The manuscripts themselves are made mostly from parchment, but there are also some on Oriental paper and even camel bone.

During the 2012 jihadist events, with many other types of cultural heritage, the manuscripts of Timbuktu had been subjected to threats, vandalism, robbery and book-burning, mainly those held in the second building of the Institute for High Studies and Islamic Researches Ahmed Baba (IHERI-AB⁸). This building was the exhibition place for inventoried and digitized manuscripts. About 12,000 documents were endangered. In order to secure them against vandalism, the manuscripts were courageously taken away from Timbuktu to Bamako in makeshift boats, at the risk of the lives of the operation's actors.

Today the manuscripts are stored in the Malian capital, in the premises of IHERI-AB and the Institute “Manuscripts Safeguarding and Access – Defence of Islamic Culture” (SAVAMA-DCI⁹), which, with the cooperation of the Malian government, UNESCO, Bamako UNESCO Office and external partners, does a great deal of preservation work. However they face serious problems that must be urgently resolved.

IHERI-AB transferred to Bamako 24,537 of the 38,803 manuscripts it held in Timbuktu. 10,063 others remained in Timbuktu, whilst 4,203 documents were vandalised. A total of 34,600 manuscripts are stored in two rooms of an eight-room building. Four rooms are dedicated to the staff and two to computer equipment. Researchers have considerable difficulties because there is no reading room for them. IHERI-AB ensures the cataloguing of manuscripts and the manufacturing of storage boxes.

⁷ Text written in Arabic characters with another language.

⁸ Acronym of the Institute's French name: Institut des hautes études des recherches islamiques - Ahmed Baba.

⁹ Acronym of the French “Sauvegarde et Valorisation des Manuscrits – Défense de la Culture Islamique”.

SAVAMA-DCI managed to extract 95 percent of its manuscripts from Timbuktu to Bamako. For SAVAMA-DCI and its partners it was the beginning of a great programme to ensure better preservation and access to the documents. With the cooperation of the Ford Foundation, Hamburg University, the Gerda Henkel Foundation and the support of the German and Luxembourg governments, SAVAMA-DCI was been able to set up and equip workshops on digitisation and the making of storage boxes.



SAVAMA workshops on making storage boxes and digitisation.

Photos by Papa Momar Diop

For its part, UNESCO played a very important role as well, at Headquarters as well as at the UNESCO Bureau of Bamako level. As soon as she had the information about the acts of vandalism against the heritage in Timbuktu, Madam Irina Bokova, Director-General of UNESCO, launched a global call for concerted action by the neighbouring countries of Mali to avert the trafficking of manuscripts, “real treasures whose loss would be extremely serious for humanity“. Speaking about IHERI-AB and SAVAMA-DCI, she declared: “these centres store ancient documents, written or locally copied, acquired in Maghreb and in Sub-Saharan Africa or sent by pilgrims from far Muslim countries. Many are created during the golden age of Timbuktu, from the twelfth to the fifteenth centuries.” This call was heard, mainly in Senegal, where an important safety device is installed on its border with Mali. Moreover, UNESCO sent to Mali a few experts to have a look around and define the strategy and means of safeguarding the manuscripts.

On implementation of the Director-General’s directives, the UNESCO Bureau in Bamako took actions, of which the organization of two national workshops which I have facilitated myself, and two international conferences about the Malian documentary heritage are examples.

The first workshop, organized for the capacity building of the Malian National MoW Committee members, was held in Bamako from 6-8 June 2014. The objectives were, on the one hand, to enhance local knowledge about the MoW Programme; and on the other hand, to have a debate about the criteria for inscription to the International Register and nomination to the Jikji Prize.

The second workshop, which took place in Bamako from 26-28 November 2015, focussed on capacity building for the technical staff working in institutions in charge of documentary heritage management, about the high importance of preventive conservation and good access to the documents (see *SCEaR Newsletter* 2016, pp. 14f.).

In the margins of the workshop, one day was dedicated to members of the Malian MoW Committee: on the one hand to discussing a project of Malian nominations to the International Register for the 2016 cycle; and on the other hand to proposing a methodology for creating a National MoW Register (paper and digitised formats). The aims were to build conditions for having some documents on the International Register in 2017 and establishing a national MoW Register.

In addition, with financial support from the Kingdom of Norway and with the collaboration of IHERI-AB, the UNESCO Bureau in Bamako organized an international conference in Bamako from 28-30 January 2015. The conference topic was “The ancient manuscripts in front of nowadays challenges”. The experts, coming from diverse horizons, shared contributions on themes such “actual situation and state of the manuscripts of Mali“, “sustainable conservation of the manuscripts”, “promotion and access”, and “management of the financial resources for the manuscripts' development”. For my part, I proposed a reflection on “the development of a partnership with the MoW Programme”.

Finally, taking advantage of an event at the UNESCO Headquarters in Paris about “Culture and heritage in danger: education as a weapon of resistance”, the UNESCO Bureau in Bamako projected the film by Jean Crepu entitled “On the trail of the Timbuktu manuscripts”.

It was from among these manuscripts that three documents were selected and nominated for inscription in the International Register in 2016. The third document was jointly submitted with Nigeria. The inscription was, as said above, approved by the Director-General of UNESCO.



M.Banzoumana Traoré, SAVAMA-DCI presenting the manuscripts that were nominated for inscription to the MoW International Register.

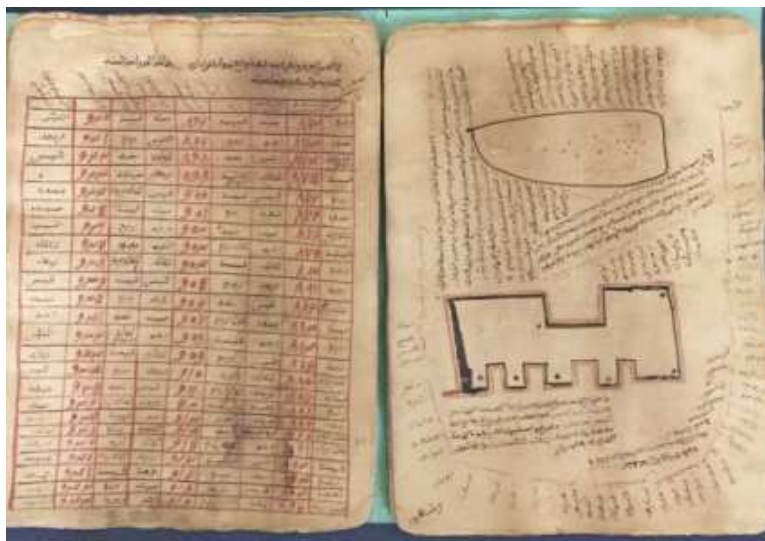
Photo by Papa Momar Diop

The three manuscripts are: “Shifā al-Asqām al-Āriḍat min al-Ẓahir wa al-Bāṭin min al-Ajsām », «Tadkīrat al-ġāfilīn ‘anqubḥiḥtilāf al-mu’minīn”, and “Maṣāliḥ al-Insān al-Muta’alliqat bi al-Adyānwa al-Abdān”.

There is no need to further demonstrate the importance and the outstanding wealth of those documents carrying centuries-old knowledge and know-how. All mankind would benefit from accessing these manuscripts. Significant efforts have been made by the Malian government, UNESCO, Ford Foundation, and partners from Luxembourg and Germany.

However, emergency actions remain to be carried out to supplement those efforts:

1. resuming the digitalization of all the IHERI-AB manuscripts in adapted formats (high resolution) for the perennial conservation of the virtual documents;
2. acquiring sustainable storage means for the digitized data;
3. establishing digital libraries to facilitate data access;
4. providing a curative system of restoration and bookbinding of documents;
5. ensuring a system of preventive conservation of the documents threatened by the factors of degradation related to hygrometry, light and insects;
6. developing a network of researchers and experts to elicit a critical edition of the manuscripts,
7. creating a reading room for researchers.



IHERI-AB manuscripts

Photo by Papa Momar Diop

Despite the significance of the manuscripts, they are meaningful only if they are duly used for education and research. The Malian authorities increasingly have realized this important point, and are taking measures to establish a bridge between the manuscripts and university research.

Indeed, the Malian ministry of high education and research is willing to convert IHERI-

AB into a university institute. A workshop has been organized to study a law draft in this regard.

The future institute, exploiting the manuscripts, will allow the implementation of higher education in the Timbuktu region, in matters of geography, history, Islamic science, mathematics, astrology, health, and the environment.

In that context, SAVAMA-DCI aims to support multidisciplinary university research and to work more for sharing, with all the world of learning, the knowledge carried by the manuscripts.

Papa Momar Diop, Vice Chair of the MoW International Advisory Committee and Member of its SCEaR; Associated Professor for Archival Studies at Saint-Louis University Gaston Berger (Senegal). He is a former Director of Senegal National Archives, and former Ambassador, Permanent Delegate of Senegal to UNESCO.

History

The Deutsches Museum in Munich: Conception and Collecting Strategy between 1903 and 1925

by Wilhelm Füßl

The early history of the Deutsches Museum (German Museum) in Munich is of special interest for Memory of the World. Firstly, right from the start it joined the functions of an archive, a library, a place for exhibitions, and a place of research. Secondly, its collections were based on wish lists by famous scientists of the time, like Wilhelm Conrad Röntgen. These 'wish lists' are outstanding documents as they show the ideas of scientists about the construction of the memory of their disciplines.

And in this combination of different memory institutions, of documents and of objects, we may see the idea of synergies between different forms of heritage at work that we are striving for. L.J.

The Deutsches Museum in Munich is today one of the largest and most important museums of the history of science and technology in the world. The circumstances of its founding, however, were unfavorable.¹⁰ Far from the imperial capital of Berlin, when it was founded in 1903 the museum lacked the unwavering support of Emperor Wilhelm II and the influential imperial government. The museum possessed not a single object and had neither employees, nor an exhibition building, nor funding. Despite this, only three years later the museum was able to open its first exhibitions and lay the foundation stone for the present museum building. With roughly 40,000 square meters of exhibition space, this building was dedicated in 1925 and soon became a prototype for international museums of technology from the US to Japan. Credit for the rapid and markedly successful construction and development of the museum was due in large part to the museum's founder Oskar von Miller (1855–1934), a pioneer of electric power economy and the owner of a consulting company for electrical engineering that operated throughout Europe. He was, in modern terms, a born “fundraiser,” who was able to win over influential persons in politics, industry, and the sciences for his project, to acquire numerous and important objects for the museum, and to place the institution on a solid foundation.

The Basic Conception of the Deutsches Museum

Based on the experiences of his visits to international museums, especially the Conservatoire des Arts et Métiers in Paris and the South Kensington Museums in London, Miller developed a basic conception for the Deutsches Museum that differed fundamentally from these foreign institutions. Although, like these, it was conceived as a “national institution,” its exhibitions

¹⁰ See e.g.: Wilhelm Füßl / Helmuth Trischler, eds.: *Geschichte des Deutschen Museums. Akteure, Artefakte, Ausstellungen*. Munich 2003; See also Wilhelm Füßl: *Oskar von Miller 1855–1934. Eine Biographie*. Munich 2005. - All quoted archival sources in: Deutsches Museum, Munich, Archives.

were explicitly international in orientation. In addition to building a museum collection, from the very beginning the Deutsches Museum's global concept included establishing its own archive on the history of the natural sciences and technology and founding a technical library. The trinity of "museum, archive, library" indicates that for the founders of the Deutsches Museum exhibiting objects alone was not sufficient. Their understanding of technology and the museum implied making technology tangible and comprehensible. The visitor should be able to contemplate the physical sources – the objects – in the museum, read more thoroughly and extensively in the library, and be able to explore the history of the natural sciences and technology in the archive through original sources, both written and drawn.



Fig. 1:
Architect Gabriel von Seidl's (1848–1913) first draft for the development of the "Kohleninsel" of 1906 clearly shows the architectural unity of the lecture halls (left, beside the tree), archives and library (centre left), and exhibitions (right).

Deutsches Museum, Munich, Archives, CD 53380

The Collection Concept of the Deutsches Museum

A central reason for the success of the Deutsches Museum in the start-up phase was the drafting of a collection concept that was absolutely unique in the European museum landscape of the first half of the twentieth century. It was based on well thought-out and rigorous planning: "The museum of masterpieces of the natural sciences and technology has the goal of representing the historical development of research in the natural sciences, technology and industry and their interaction and to illustrate their most important stages in particular through outstanding and typical masterpieces. It is a German national institution, designed to honor the entire German people and serve as a model." The paragraph 1 of the first statutes of December 1903, put into words and cemented the central considerations of the exhibition conception. It is unmistakable that, through its

concentration on the “most important stages” and on “masterpieces,” the museum direction wanted to keep the number of objects low. From a specific type of source, the so-called “wish lists”, which listed the objects that were most important for the museum, it can be calculated that in 1905 roughly 7000 exhibition objects and about 45 fields were considered sufficient.

The museum records show that Miller and his fellow board members Walther von Dyck (1856–1934) and Carl von Linde (1842–1934) purposefully planned the design of the exhibitions. Even before the formal founding of the museum in May 1903, the “scientific committee” they had convened, to which numerous professors belonged, had already met. In 1903, the museum circulated the first lists of suggested acquisitions, prepared by this committee; but the active acquisition first commenced at the beginning of 1904. By that point Miller, together with several employees of his engineering office, had already presented a rough arrangement of the museum. Initially 29 groups were envisaged, which were expanded to 45 by 1905. The number also remained largely unchanged until 1925, the canon of fields relatively constant.

For the arrangement of the individual collection areas, a network of “consultants” was created beginning in 1904. In 1905, there were 56 consultants and an additional 134 external advisors who had pledged their collaboration and support. As with the “scientific committee,” names from the academic realm dominated; around three-fourths were university professors, only seven were from industry. Among the consultants were such prominent names as the Nobel laureates in physics Wilhelm Conrad Röntgen and Wilhelm Wien. Handwritten wish lists from both survive.

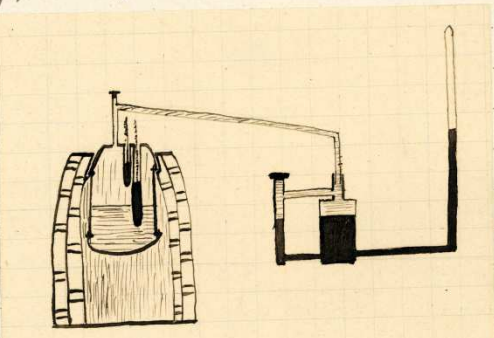
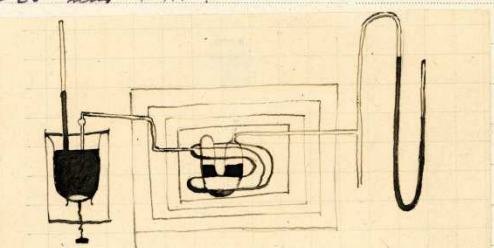
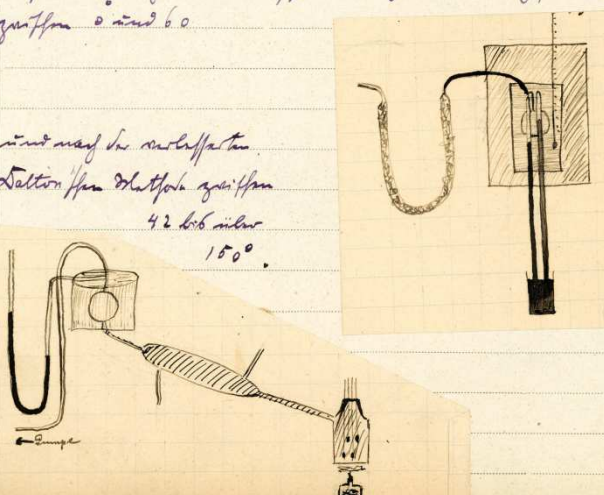
Jahreszahl	Name	Gegenstand (Beschreibung und event. Skizze)
1830	Frage u. Lösung	<p>maßen von dem Lösungstrick des Wasser für für Injektionen</p> 
1847	Magnet	<p>bestimmte die Temperatur des Wasserlaufs für -20° und +110°.</p> 
1847	Kegault	<p>bestimmte auf der Warte für Wasser Lösungstrick für 0° und 60°</p> <p>und auf der Warte für Salz für Wasser für 42 bis 100 150°.</p> 

Fig. 2
"Heat" wish list prepared by Wilhelm Conrad Röntgen.

The consultants were charged with compiling lists for a field which included all wanted originals, replicas, models, demonstrations, drawings, photographs, etc. These lists came to be known as "wish lists". By the end of 1905 wish lists were available for all 45 groups. Most of the preserved lists date from 1905-1911 during the museum's founding and construction period. Only a few wish lists were requested for the later new construction on the Deutsches Museum island, the Kohleninsel, as of 1925. This is an indication that the museum had become more autonomous and independent in the mid 1920's. The tendency to refrain increasingly from consulting external experts correlates with the assembly of the museum's own technically trained experts.

Early Wish Lists

These wish lists are an instructive source for the history of the collections overall and extend far beyond the concrete acquisition activities of the Deutsches Museum.

Comparable cases of a similarly broad collecting concept are not known, at least in Germany. The wish lists represent the first time a museum of technology attempted to take a comprehensive inventory of the history of technology and science up to the base year of 1905 and linked important development stages with individual objects. As the wish lists resulted in the acquisition of specific objects, this collection strategy acquires additional significance. Not just the canon of set groups, but also the connection with other subject areas remained relatively fixed. The wish lists also helped solidify the principle of the presentation of the historical development of technology typical for the Deutsches Museum.

The principle behind the establishing of the collections – presentation of the fields by historical development based on "Masterpieces" – was widely approved of; criticism was rarely expressed. In content, the wish lists covered virtually the full spectrum of subjects in natural science and technology found in the textbooks of the time. Relatively modern fields of technology were also already represented as groups in 1905, such as "Motor Vehicles" and "Aviation".

On the other hand, almost too much importance was placed on fields such as "Clocks and Measuring Technology" or "Physics" with the groups Mechanics, Optics, Heat, Acoustics, Magnetism and Electricity. Physics was predominant, for example, with a total of almost 1,350 objects. Another focus was on "Engineering" (bridge building, river engineering, canal and tunnel construction). What is most striking is that groups that illustrate the achievements of technology in daily life were to be widely collected: "Lighting", "Electrical engineering", "Gas engineering", "Heating and Ventilation", "Dairy Industry and Agriculture", "Urban sanitation", "Housing and Urban Development". Miller later explained that in the early exhibitions those areas were given preference "which appeared to be particularly important for general public education."

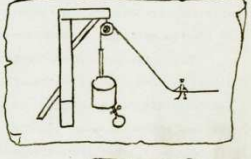
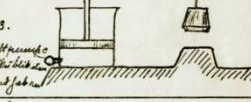
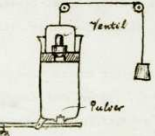
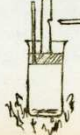
E. Hess s. 11	Name	Gegenstand (Beschreibung und event. Skizze)	Art der Darstellung	Raumbedarf ohne Bänge						Prognose f. d. Beschaffung
				I.	II.	III.	IV.	V.	VI.	
1654	Otto v. Guericke	I. Nachweis des Luftdruckes aufstehen Rechenbeispiel für einen Kolben mit Brennpumpe. ad 1.  ad 3.  Luftdruck von 16.5 bis zu 16.5	1. Originalhandskizze 0,5 2. Photographie der nach dieser Hand- skizze gefertigten in versch. Maßstäb. 3. Modell feiner füßig. 0,5						Vortrag v. Dr. L. Dittmar Magdeburg vom 16. II. 97 im Tag. 7 Experimenta nova Magde- burgica, Cap. 27 lib. III. Toricus III. Schott: De arte mechanica, hydraulica, pneumatica Von einem Magdeburger Druckverf. zu erhalten.	
1674	Huyghen	II. Erste Versuche zur Konstruktion einer Pulvermaschine.  Ventil Pulver	Dampfmaschine. Zeichnung, feinst. 0,5							
1688	Papin	Erste atmosphärische Maschine  zum Antrieben des Kolbens.	1. Original oder Nachbildung 0,5 2. Schnittzeichnung 0,5						Einzelne Objekte, nur drei Papin, von Papin, die drei zu Harburg oder Kassel, auf proportionalen Kosten der Museum.	

Fig. 3: "Steam Engines" wish list from 1904 by Oskar von Miller.

Deutsches Museum, Munich, Archives, CD 51427, CD 51428.

The formal structure of the wish lists attests to their specific purpose in the planning of the first exhibitions. In addition to the year of discovery/invention, the object, and comment on procurement option (gift, loan, purchase), the individual columns state the desired presentation in the museum (original, model, drawing, photograph) and the necessary space requirement in floor space or wall area. Taken together, most wish lists reveal the consistency of the historical development series and the strong emphasis on history to the relative neglect of modern objects. Depending on the field, the distribution of originals or replicas, reconstructions, models varies. In the group "Steam Engines", the share of originals, numbering 35, is high, as are the wish lists "Electrical engineering" (139) and "Geodesy" (153 originals and a total of 161 listed objects), while the number of originals in the groups "Bridge Building", "Canal Construction" and "Inland Navigation" or "Housing" and "Urban Development" tends to be zero. The low number of originals is due to the simple fact that most of these objects were too big for an exhibition. In the case, the museum resorted to reproductions, parts of originals or models.

Wish lists still exist for some groups from different years. They reveal to what extent the visions and wishes of the museum changed. One general observation is that the number of modern products increased while the number of historical objects decreased the closer the planning opening of the exhibition on the museum island approached. Equally, the

influence of industry grew. In public, this kind of exhibition organization was viewed critically; the *Münchener Post* newspaper, for example, talked about an industry "advertising campaign".

The early wish lists of 1905 are like textbooks and geared to the syllabi of the curriculum at the technical universities in Germany. A special emphasis on German developments is not detectable. The only reason foreign machines were generally not exhibited as originals was because they could not be purchased. As far as the up-and-coming National Socialists were concerned after Hitler's Beer Hall Putsch in Munich in 1923, the acquisition policies of the Deutsches Museum failed to pay enough attention to national German heroes and developments. This was the root for the conflict which resulted in considerable friction between the Deutsches Museum and the National Socialists.

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Nr.	Gegenstand	I. Aus- bau.	II. Aus- bau.	Bemerkungen.
<u>V. Fallschirme.</u>				
39.	Älterer franz. Fallschirm	Modell 1:20		
<u>VI. Drachen.</u>				
40.	Russischer rechteckiger Drache mit Dütenschwanz.	Original.		
41.	Schwanzloser malaischer Drache (Eddy Drache)		Original.	
42.	Australischer Kastendrache nach Hargrave.	Original.		
43.	Lameon Drache		Original.	
44.	Nickel Drache	Zeich- nung.		
45.	Drachengespanne für meteoro- logische und andere Zwecke	Zeich- nung.		
<u>VII. Flugmaschinen</u>				
46.	Projekte: Leonardo da Vinci's (sul volo degli uccelli) Berblingers, Ulm Degens, Wien Hensons 1842			Zeich- nungen 1:10
47.	Wenhams Flugapparat 1866	Modell 1:10		
48.	Drachenflieger v. Kress 1874	Original Modell		
49.	Hargraves Flugmaschine mit Schwingspropeller 1887	Zeich- nung		
50.	Sigfeld Drachenfliegermodell 1889	Original		
51.	Maxims Flugmaschine 1890		Phantom 1:10	
52.	Lilienthals Flugapparat 1896	Original		
53.	Langley's Aerodrom, 1897		Modell	
54.	Carellis lenkbarer Fallschirm 1898		Modell	
55.	Chamutes Zweidecker und Drei- decker 1899		Modell	
56.	Hofmanns Drachenflieger 1900		Original	
57.	Wrights Doppeldecker 1902	Modell 1:10		
58.	Montgomerys Schwebeapparat	Modell 1:10		

Fig. 4: The first wish list: "Airship Travel", 1905.

One example of an early wish list is Aviation or, as it was originally called, "Airship Travel" from 1905. While other wish lists like that of the "Steam Engines" section sought to bring traditional technology to museum collections, aviation played virtually no role in Germany as a branch of industry at the time the museum was founded although its innovative character was unmistakable. By the time the new museum building opened in 1925, aircraft construction had become an important industry despite the limitations imposed by the Treaty of Peace between the Allied and Associated Powers and Germany concluded in Versailles in 1919.

The technological development of flying in the first decade of the 20th century can be tracked in the three wish lists for "Airship Travel" from the years 1905 and 1909. These lists emphasize how the Deutsches Museum operated in the seemingly opposing areas of history and current relevance in its intention to bring to the museum "the historical development of industries including the latest achievements". Since "Airship Travel" had no place in the first exhibitions in 1906 due to the limited space situation, the first wish lists dating from the year 1905 were relatively vague. It was not until the occasion of the forthcoming opening of a branch of the museum in a former barracks on January 1, 1909 that the early lists were revised and considerably added to, whereby their content also changed.

In the synopsis of the development of aviation until 1925, it becomes obvious that the museum's board was well aware of the importance of aviation for technical, economic and social development. It very clearly recognized that despite multiple technological flops, aviation was attracting a lot of attention and was of great interest to the public. The often described euphoria for aviation points to the "new nationalism" and the technological imperialism of the civic public on the eve of World War I. Aviation also had a renaissance, specifically during the post-war period.

Construction of Technical Culture in the Exhibitions

The early wish lists of 1905 were the theory, the exhibitions the practice. When looking at the various sections of the Deutsches Museum historically and the periods 1906 and 1925, it helps to explain continuities as well as breaks in the presentation of technology and exhibition organization and design.

The plethora of objects originally vied with very limited exhibition space. In the first building, the Deutsches Museum had 4,600m² of exhibition space with another 400m² in a hall in the site's courtyard. The first branch was extended in 1909 to a total exhibition area of 10,000m². The exhibition space finally reached 40,000m² with the dedication of the new museum building in 1925. The enormous increase in space influenced the selection of differentiated collections and in a broader presentation of individual disciplines.

A comparison of the systems behind the exhibitions at the temporary locations and in the new building does not reveal very significant differences. The canon of subjects largely remained the same, although some sections were distinctly enlarged in 1925.

In retrospect, the purposeful planning in the building and expansion of the Deutsches Museum is evident in the years 1903 to 1906. It began with a general museum concept as a place of technical culture and with a definite collection policy and ended with exhibitions

designed strictly in line with the museum concept. In this unity, the museum in Munich assumed a unique international position in the first half of the 20th century.

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Impressum

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