DFG-funded projects 1920 to 1945

Notes on a research information system, that is definitely not ‘current’? But of course, it is!

Jürgen Güdler, Deutsche Forschungsgemeinschaft (DFG)

euroCRIS Membership Meeting, 18th-20th November, 2019

Agenda

1. Background
2. Database and concept of the system
3. How does it work
4. What about „current“?

The DFG's role in the German research system

- DFG is an association ("Verein"). Members are research universities (HEI), academies of sciences and humanities, non-university research institutions (e.g. MPG) and a number of scientific associations
- With an annual budget of ~ 3.4 Billion Euro, the DFG is a key player in the German research landscape. In 2018, the DFG funded almost 33,200 new and ongoing projects
- The DFG strives to provide the greatest possible transparency on its activities
- Data play an important role within this mission

DFG-internal data infrastructure
Data sources

To answer the growing demand for empirical based information the DFG uses several data sources:

- Elan/ElektrA – process-produced data out of the application work flow (**main source**). Today's coverage:
  - 680,000 proposals (1,500 new/month)
  - 285,000 persons (1,300 new/month)
  - 70,000 research institutes
- Annual **monitoring surveys** on the scientific staff in Coordinated Programmes (data on ~ 50.000 scientists)
- Others (e.g. surveys, empirical document analysis, funding data from other organizations; data from the Federal Statistical Office)

Information products and topics

- The data is primarily used for the application process: review, decision, funding
- DFG's data are furthermore a basis for a variety of information products and services:
  - Management reports
  - Statistics on gender participation, internationality, activities in certain disciplines…
  - Evaluation studies on success and the structural and long-term effects of funding, e.g. career outcome of young researchers, open access policies…
  - Internet and Information systems (e.g. GEPRIS on DFG-funded projects gepris.dfg.de and GERiT on 29,000 German Research Institutions www.gerit.org)

2020 – 100 anniversary of the DFG
An occasion for a look forward into the future and the past

- Next year, the DFG celebrates its centenary
- There will be a series of events that will convey the future-oriented importance of self-governing basic research
- But of course there will also be room for retrospects, e.g. within the project GEPRIS*historical* (working title)

#DFG2020

GEPRIS*historical*
The core database

- Since 2010, a research group has published a number of very revealing studies on the DFG's history
- In a subproject of the group DFG-funding-files in the Federal Archives were made accessible

DFG-Hauptausschuss in Weimar 1929

- Thanks to this project, we now have a structured dataset on 50,000 project proposals submitted to the DFG between 1920 and 1945
- By mid-2020, the data will be prepared in a way that it can be made accessible on the web via a research information system
- In a future step, data from 1949-1970 will also be available

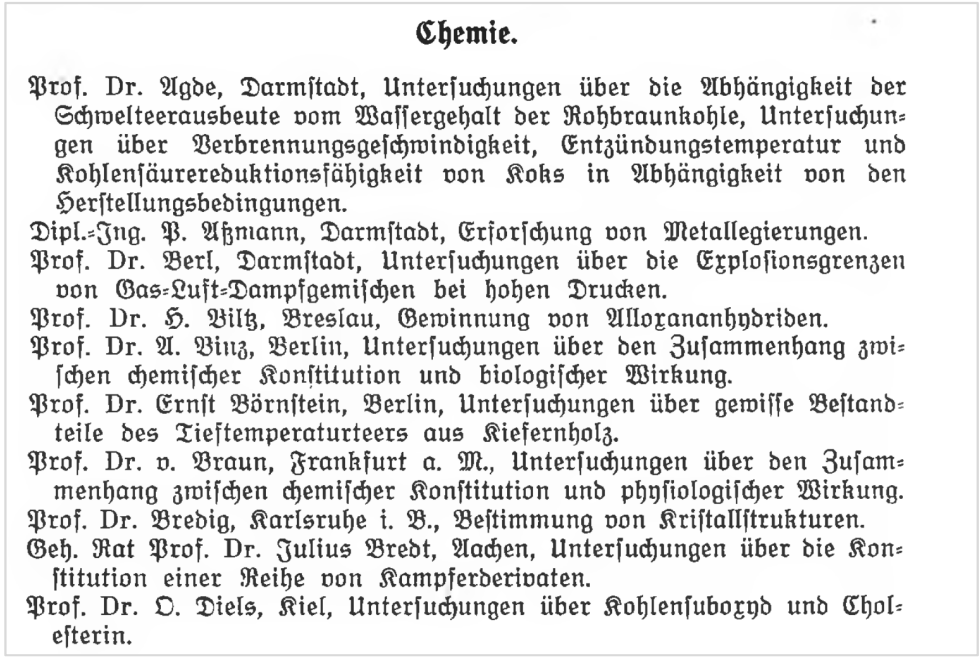
Data example

- The original data looks like this:

Name	Haber, Fritz
Date of birth	09.12.1868
Gender	M (male)
Title	Prof. Dr.
Location	Berlin
Institution	Kaiser-Wilhelm-Institut für physikalische Chemie und Elektrochemie
Title and Comment	Untersuchungen über die Reaktion bandenspektroskopisch ermittelter Radikale (Die Untersuchungen wurden im Rahmen der DFG-Gemeinschaftsarbeiten Aufbau der Materie durchgeführt. Haber hatte 14.000 Mark beantragt, es ist jedoch unklar, ob die gesamte Summe bewilligt wurde)
Funding instrument	Sachbeihilfe (research grant)
Fachausschuss/ Review Board	Chemie / Chemistry
Funding Date	01.10.1929
Status	bewilligt / funded
Source	Bericht der NG (1.4.1929 bis 31.3.1930); BArch Berlin, R 1501/ 126777; BArch Berlin, R 73/ 110
Reference Number	missing

Data sources

- Sources were
  - **DFG yearbooks (1921-1933)**
  - RFR record cards
  - Project lists from the „Reichsforschungsrat (RFR)“ (1937-1945)
  - And others



Chemie.

Prof. Dr. Agde, Darmstadt, Untersuchungen über die Abhängigkeit der Schwelteerausbeute vom Wassergehalt der Rohbraunkohle, Untersuchungen über Verbrennungsgeschwindigkeit, Entzündungstemperatur und Kohlensäurereduktionsfähigkeit von Koks in Abhängigkeit von den Herstellungsbedingungen.
Dipl.-Ing. P. Aßmann, Darmstadt, Erforschung von Metallegierungen.
Prof. Dr. Berl, Darmstadt, Untersuchungen über die Explosionsgrenzen von Gas-Luft-Dampfgemischen bei hohen Drucken.
Prof. Dr. H. Biltz, Breslau, Gewinnung von Alloxananhydriden.
Prof. Dr. A. Binz, Berlin, Untersuchungen über den Zusammenhang zwischen chemischer Konstitution und biologischer Wirkung.
Prof. Dr. Ernst Börnstein, Berlin, Untersuchungen über gewisse Bestandteile des Tieftemperaturteers aus Kiefernholz.
Prof. Dr. v. Braun, Frankfurt a. M., Untersuchungen über den Zusammenhang zwischen chemischer Konstitution und physiologischer Wirkung.
Prof. Dr. Bredig, Karlsruhe i. B., Bestimmung von Kristallstrukturen.
Geh. Rat Prof. Dr. Julius Bredt, Aachen, Untersuchungen über die Konstitution einer Reihe von Kampferderivaten.
Prof. Dr. O. Diels, Kiel, Untersuchungen über Kohlensuboxyd und Cholesterin.

Source: Vierter Bericht der Notgemeinschaft der Deutschen Wissenschaft umfassend ihre Tätigkeit vom 1. April 1924 bis zum 31. März 1925: S. 69

Data sources

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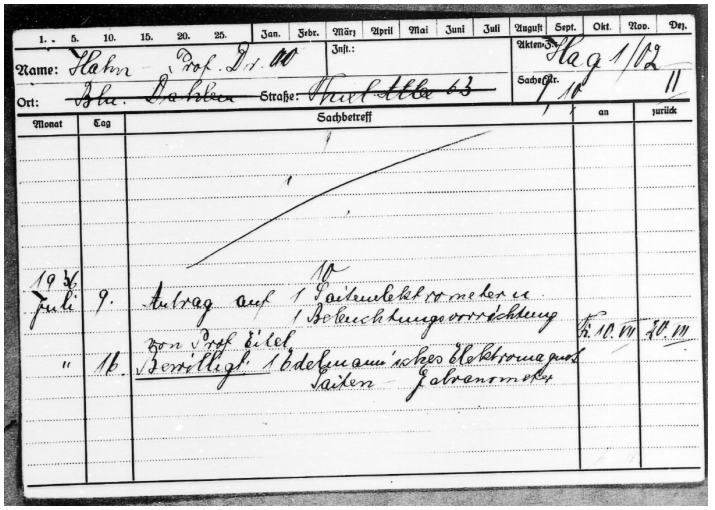
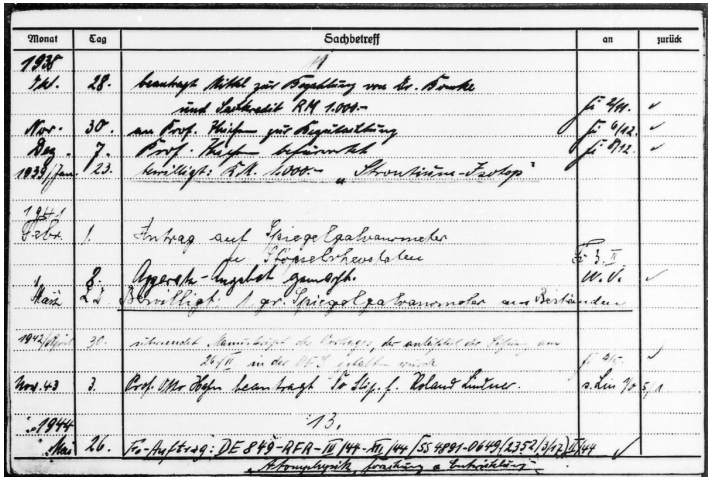
  - And others





Source: BArch R 26-III/80669 Hahn, Otto

Main concept of the Information System
Enriched data by linkage with substantial sources

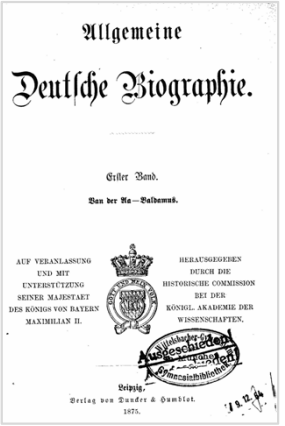
- In order to enrich the relatively "lean" original data, the system will be linked to other information resources:
  - the find book of the Federal Archives in Koblenz, in which the files of DFG-funded projects (R-73 collection) are described (~ 35.000 links to the respective case files)
  - The Wikipedia-Profiles of
    - People (~ 6.000 scientists)
    - Institutes (~ 600-800 institutes)
    - Selected projects (~ 200-500 projects of greater interest)
  - The information system www.deutsche-biographie.de (German biography) (a DFG funded infrastructure) (~ 8.000 scientists)

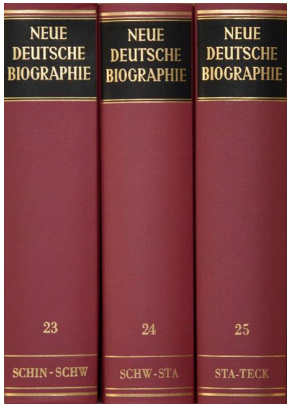
Main concept of the Information System
The Federal Archive

- The German Federal Archive or Bundesarchiv (BArch) (German: Bundesarchiv) is the National Archive of Germany
- It secures the archives of the federal government and its predecessor institutions in the long term, makes them usable and uses them scientifically
- DFG is one of the main clients of the BA: Nearly 3 km DFG-paper files from 1920 to the 1990ies can be found there!

Main concept of the Information System
Deutsche-biographie.de

- A DFG-funded free accessible database which covers the period from the Middle Ages to the present day
- The aim of the German Biography is to provide "structured lexical expert knowledge with information on [...] personalities of the German-speaking cultural area”
- The origins are the book series “Allgemeine Deutsche Biographie” (ADB) (1875-1912) and “Neue Deutsche Biographie (NDB) (1953-2020)
- Today data on roughly 730,000 persons can be researched in the online system
- For more details see: www.deutsche-biographie.de





Deutsche Biographie

Main concept of the Information System
Data clean up

- For the purpose of linkage with different sources some investment was (and is) necessary:
  - For almost 15,000 **people**, the spellings had to be systematized first and then the names had to be researched in the systems to be connected
  - Same procedure was done for roughly 1,300 **institutes** (and their locations)
  - and for almost 35,000 **file numbers** (due to linkage to the Federal Archive)
  - Together with some experts for the several disciplines covered by the system, internet sources (mainly Wikipedia but also others) for a few hundred outstanding **projects** have to be identified and developed

Main concept of the Information System
Identifiers as the main Backbone of the System

- Particular attention is paid to the question of unambiguous identifiers:
  - For **persons** we use the GND-Identifier (Gemeinsame Normdatei/The Integrated Authority File)… (for the linkage to deutsche-biographie.de)…
  - …and the WIKIDATA-ID (for the linkage to Wikipedia)
  - WIKIDATA-IDs are also used for **institutes…**
  - … and World Geodetic System 1984 (WGS 84) data is used to locate these **institutes** geographically
  - The linkage to the documents on funded **projects** at the Federal Archives will be established via the file number (from the original "source" field, e.g. for the above cited Haber-Project: "R 73/ 110")

Methodical Approach
Open Refine as a helpful Tool

- OpenRefine, formerly called Google Refine, is a standalone open source desktop application for data cleanup and transformation to other formats
- It is similar to spreadsheet applications (and can work with spreadsheet file formats); however, it behaves more like a database (*cited by Wikipedia*)
- With OR, it was possible to substantially support the very complex data preparation
- E.g. OR is very helpful to find matches for peoples' names in very big data sources via reconciliation-interface (like GND/WIKIDATA)

How does it work
The Search Tools

- The system will work with the following search tools:
  - A catalogue search for people and for institutes
  - A freetext search for projects (and also for people and institutes behind these projects)
  - A geographical search (many funded projects took place outside of Germany)
- Facets will help to filter the search results:
  - Filter by year
  - Filter by subject group (21 subject focused “review boards”)
  - Filter by country, city
  - Filter by gender (only 5% were female, but many of those were pioneers)
  - And others

How does it work
Linkages: Taking the „Haber“-example from above

- Within the system there will be some key-informations on the scientist, e.g.:
  “Fritz Haber (* 9. Dezember 1868 in Breslau; † 29. Januar 1934 in Basel) war ein deutscher Chemiker und Nobelpreisträger für Chemie“
- Detailed background information will be accessible via Wikipedia
- Another link makes deutsche-biographie.de accessible

https://de.wikipedia.org/wiki/Fritz_Haber

How does it work
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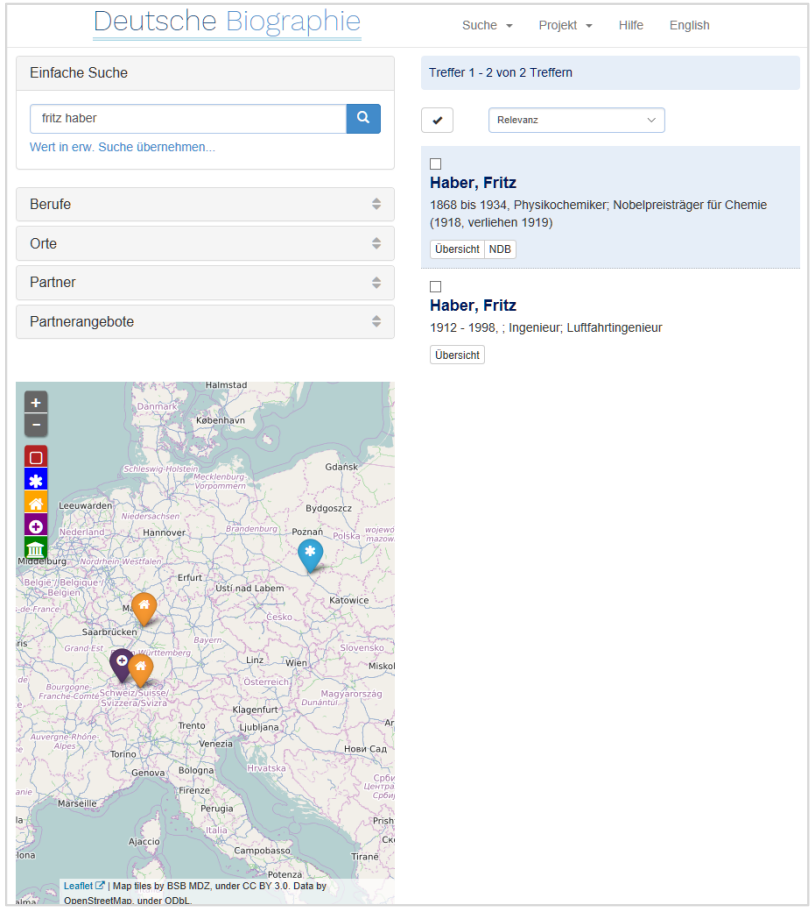
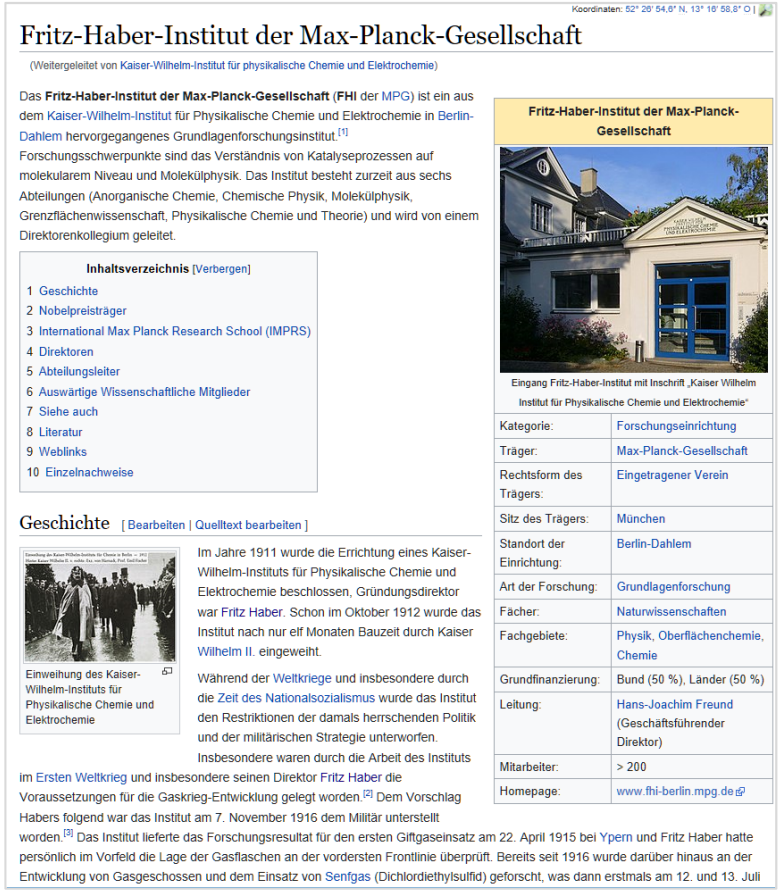
- The system itself then will present the (13) proposals that were reviewed by the review board “Chemistry” (1921 to 1930)



https://www.deutsche-biographie.de/

How does it work
Linkages: Taking the „Haber“-example from above

- Haber worked at “Kaiser-Wilhelm-Institut für physikalische Chemie und Elektrochemie“, Berlin
- There will also be a link on the Wikipedia-Profile of the institute (now a Max-Planck-Institute named after its famous founder)
  https://de.wikipedia.org/wiki/Fritz-Haber-Institut_der_Max-Planck-Gesellschaft



Koordinaten: 52° 26' 54,6" N, 13° 16' 58,8" O

Fritz-Haber-Institut der Max-Planck-Gesellschaft

(Weitergeleitet von Kaiser-Wilhelm-Institut für physikalische Chemie und Elektrochemie)

Das **Fritz-Haber-Institut der Max-Planck-Gesellschaft** (**FHI** der MPG) ist ein aus dem Kaiser-Wilhelm-Institut für Physikalische Chemie und Elektrochemie in Berlin-Dahlem hervorgegangenes Grundlagenforschungsinstitut.[1] Forschungsschwerpunkte sind das Verständnis von Katalyseprozessen auf molekularem Niveau und Molekülphysik. Das Institut besteht zurzeit aus sechs Abteilungen (Anorganische Chemie, Chemische Physik, Molekülphysik, Grenzflächenwissenschaft, Physikalische Chemie und Theorie) und wird von einem Direktorenkollegium geleitet.

Inhaltsverzeichnis [Verbergen]

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10 Einzelnachweise

Fritz-Haber-Institut der Max-Planck-Gesellschaft

Eingang Fritz-Haber-Institut mit Inschrift „Kaiser Wilhelm Institut für Physikalische Chemie und Elektrochemie“

Kategorie:	Forschungseinrichtung
Träger:	Max-Planck-Gesellschaft
Rechtsform des Trägers:	Eingetragener Verein
Sitz des Trägers:	München
Standort der Einrichtung:	Berlin-Dahlem
Art der Forschung:	Grundlagenforschung
Fächer:	Naturwissenschaften
Fachgebiete:	Physik, Oberflächenchemie, Chemie
Grundfinanzierung:	Bund (50 %), Länder (50 %)
Leitung:	Hans-Joachim Freund (Geschäftsführender Direktor)
Mitarbeiter:	> 200
Homepage:	www.fhi-berlin.mpg.de

Geschichte [Bearbeiten | Quelltext bearbeiten]

Einweihung des Kaiser-Wilhelm-Instituts für Physikalische Chemie und Elektrochemie

Im Jahre 1911 wurde die Errichtung eines Kaiser-Wilhelm-Instituts für Physikalische Chemie und Elektrochemie beschlossen, Gründungsdirektor war Fritz Haber. Schon im Oktober 1912 wurde das Institut nach nur elf Monaten Bauzeit durch Kaiser Wilhelm II. eingeweiht.

Während der Weltkriege und insbesondere durch die Zeit des Nationalsozialismus wurde das Institut den Restriktionen der damals herrschenden Politik und der militärischen Strategie unterworfen. Insbesondere waren durch die Arbeit des Instituts im Ersten Weltkrieg und insbesondere seinen Direktor Fritz Haber die Voraussetzungen für die Gaskrieg-Entwicklung gelegt worden.[2] Dem Vorschlag Habers folgend war das Institut am 7. November 1916 dem Militär unterstellt worden.[3] Das Institut lieferte das Forschungsresultat für den ersten Giftgaseinsatz am 22. April 1915 bei Ypern und Fritz Haber hatte persönlich im Vorfeld die Lage der Gasflaschen an der vordersten Frontlinie überprüft. Bereits seit 1916 wurde darüber hinaus an der Entwicklung von Gasgeschossen und dem Einsatz von Senfgas (Dichlordiethylsulfid) geforscht, was dann erstmals am 12. und 13. Juli

https://de.wikipedia.org/wiki/Fritz-Haber-Institut_der_Max-Planck-Gesellschaft

How does it work
Links on interesting Projects

- Finally, outstanding projects will also be highlighted:
  - There are famous expeditions and archaeological projects as well as ~500 proposals from 42 Nobel prize winners (and some more from other research pioneers)
  - But also forgotten inventors and their discoveries can be found:
    - E.g. Jörg Mager, Versuche zur röhrenelektrischen Musikerzeugung (a pioneer in electronic music, died as a poor man) (and the DFG denied his proposal)
    - E.g. Wilhelm Maier, he asked the RFR to print his concept on a “Sonnenkraftmaschine” (sun power machine). The RFR refused. Reason: Paper shortage (often a problem in the 40s). His patent even nowadays is cited (https://patents.google.com/patent/DE834040C/un), the person behind it is largely forgotten.

Jörg Mager playing on Spherophone at the 1926 summer music festival in the Black Forest town of Donaueschingen

https://commons.wikimedia.org/wiki/File:J%C3%B6rg_Mager_playing_on_Spherophone.jpg

How does it work
Links on interesting Projects

- Some projects appear, not only from today's point of view, curious:
  - E.g. “Durchführung eines Selbstversuches zur Klärung der Frage des Muskelkaters / Carrying out a self-experiment to clarify the question of muscle soreness”
- Some projects were ahead of time
  - E.g. “Untersuchungen über die Schäden des Tabaks (im Tierversuch) / Studies on damage caused by tobacco (animal experiments)” (1941)
- And some projects sadly illustrate the ability to adapt to the “Zeitgeist” (like this fellowship):
  - 1930: Untersuchungen zur individuellen Entwicklungsgeschichte des Wespenstaates
  - 1932: Biologisch-soziologische Untersuchungen am Wespenstaat
  - 1936: Untersuchungen über die völkische Organisation im Wespenstaat

How does it work
Projects from the Period 1937 to 1945 (Reichsforschungsrat, RFR)

- The funding 1937 to 1945, when the DFG was shut down and was followed by the RFR focused on “applied” research
- Many projects served military purposes
- A lot of “humanities”-projects supported the ideology of the ruling system, e.g. projects organized by the so called “Ahnenerbe”, a think tank established by Heinrich Himmler, Reichsführer der Schutzstaffel (SS)
- There was some kind of own funding line “Kriegseinsatz der Geisteswissenschaften / war mission of the humanities”

Ahnenerbe

From Wikipedia, the free encyclopedia

The **Ahnenerbe** (German: [ˈʔaːnənˌʔɛʁbə], *ancestral heritage*) was a think tank that operated in Nazi Germany between 1935 and 1945. It was an appendage of the Schutzstaffel (SS) and had been established by Heinrich Himmler, the Reichsführer of the SS. It was devoted to the task of promoting the racial doctrines espoused by Adolf Hitler and his governing Nazi Party, specifically by supporting the idea that the modern Germans descended from an ancient Aryan race which was biologically superior to other racial groups. The group comprised scholars and scientists from a broad range of academic disciplines.

Hitler came to power in 1933 and over the following years he converted Germany into a one-party state under the control of his Nazi Party and governed by his personal dictatorship. He espoused the idea that modern Germans descended from the ancient Aryans, who he claimed—in contrast to established academic understandings of prehistory—had been responsible for most major developments in human history such as agriculture, art, and writing. His racial theories and claims about prehistory were not accepted by the majority of the world's scholarly community, and a decision was taken to give them greater scholarly backing. The Ahnenerbe was established with the purpose of providing evidence for Nazi racial doctrine and to promote these ideas to the German public through books, articles, exhibits, and conferences. Ahnenerbe scholars interpreted evidence to fit Hitler's beliefs, and some consciously fabricated evidence to do so; many of their ideas are regarded as pseudoscience. The organisation sent out various expeditions to other parts of the world, intent on finding evidence of ancient Aryan expansion.

The Nazi government used the Ahnenerbe's research to justify many of their policies. For instance, the think tank's claim that archaeological evidence indicated that the ancient Aryans lived across eastern Europe was cited in justification of German military expansion into that region. Ahnenerbe research was also cited in justification of the Holocaust, the mass killing of Jews and other groups—including Roma and homosexuals—through extermination camps and other methods. In 1937 the project was renamed the Research and Teaching Community of the Ancestral Heritage (*Forschungs- und Lehrgemeinschaft des Ahnenerbe*). Some of the group's investigations were placed on hold at the outbreak of the Second World War in 1939. Towards the end of the war, Ahnenerbe members destroyed much of the organisation's paperwork to avoid it incriminating them in forthcoming war crimes tribunals.

Many Ahnenerbe members escaped the de-Nazification policies in West Germany and remained active in the country's archaeological establishment throughout the post-war decades. This stifled scholarly research into the Ahnenerbe, which only intensified after German reunification in 1990. The Ahnenerbe's ideas have remained popular in some neo-Nazi and far-right circles and have also influenced later pseudo-archaeologists.

Ahnenerbe

Emblem

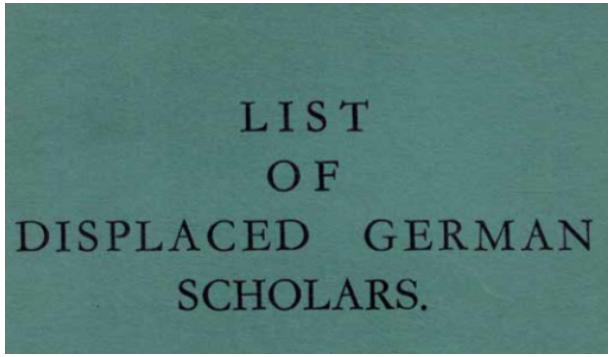
Formation	July 1, 1935
Founder	Heinrich Himmler
Dissolved	1945
Legal status	Eingetragener Verein
Purpose	Political propaganda, Pseudo-scientific research
Official language	German

https://de.wikipedia.org/wiki/Forschungsgemeinschaft_Deutsches_Ahnenerbe

- And there are at lot of projects you have to call “criminal”, like extremely inhuman medical experiments on prisoners, so called “Zwillingsstudien / twin studies” with children…

How does it work
Projects from the Period 1937 to 1945 (Reichsforschungsrat, RFR)

- Many brilliant scientists (like Albert Einstein, Erwin Schrödinger, Martin Buber...) were forced to leave Germany in the III. Reich
- A special source, the “List of Displaced German Scholars” (1936) contains 1.650 persons and will help to identify some of these scientists in our database
- Based on a first sample we estimate that every fourth researcher from the list is in the database
- Therefore, it will also be possible to follow the traces of these scientists via the information system



So, finally - what about „current“?

- Within the euroCRIS board we actually have some discussions about our name:
  - Is "euro" still contemporary as a part of the name, when we are increasingly attracting members and partners from non-European regions?
  - And does "current" still fit with our goals - when more and more information systems are also providing information about noncurrent, i.e. completed research projects?

So, finally - what about „current“?

- The system just presented definitely does not document any current projects. But from a certain perspective it will be again very “current”:
  - By linking historical data with current information on the historical persons, institutions and projects concerned
  - By combining the publication of the system with a campaign inviting interested scientists and laymen to participate in the current updating of the data (especially in Wikipedia, e.g. by adding profiles of persons who are missing or who are only incompletely represented there)
  - And finally, because it is precisely the historical retrospective that helps to develop an understanding of the fact that past and current research is always shaped by social factors and the “Zeitgeist”

Thanks for your attention!

The system will be published in the third quarter of the year 2020.

Further information

- On the DFG: https://**www.dfg.de**
- On the Funding Atlas: https://www.dfg.de/**fundingatlas**
- On all DFG-funded projects: https://www.dfg.de/**gepris**
- On all German research organisations: https://**gerit.org**