

# Norwegian Correspondences and Linked Open Data

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**Abstract.** The project *Norwegian Correspondences* aims to link individual letters and other correspondence media not only to each other but to correspondences across all of Norway, Europe and beyond. It uses the CorrespSearch infrastructure, which employs Linked Open Data standards. Correspondence metadata from digitized letters, digital as well as printed scholarly editions is delivered in the Correspondence Metadata Interchange Format (CMIF). Via the CorrespSearch web interface, data can be easily searched—or queried via an open API.

**Keywords:** Correspondence · Cultural Heritage Institutions · Linked Open Data · Collaboration.

## 1 About the Project

The National Library of Norway has a substantial amount of private historical correspondences in its holdings,<sup>6</sup> some of them are edited and published, either in printed editions or in digital form. In addition, other Norwegian cultural heritage institutions, like the Munch Museum, but also the university libraries of

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<sup>6</sup> The manuscript catalogue contains almost 200.000 individual letters from as early as 1378 to quite recent material.

The Arctic University of Norway and the University of Bergen<sup>7</sup> and the Norwegian University of Science and Technology University Library, hold significant collections of letters and are continually preparing digital editions of letters and correspondences of key figures of Norwegian public and academic life. Yet, all these correspondence projects lead a solitary existence—hidden either in editions of single authors or as digitized collections or individual pieces on institutional servers.

As a dialogical genre by nature, the full potential of letters and other correspondence material lies in the connection of the individuals writing and receiving letters, postcards, and telegrams—at a specific time and from and to a specific place. But because the collections of letters and individual pieces of a correspondence are historically distributed wide and far in regards to geography and institution, there rarely exist links between them. Thus research on correspondence networks that existed in Norway, the Nordic Countries—and beyond, to Europe and the rest of the world—as well as research on the letter as the main means of written interpersonal communication for centuries is almost impossible.

The project *Norwegian Correspondences* (*NorKorr*, from Norwegian *Norske korrespondanser*) aims to link these individual letters and similar materials not only to each other but to correspondences in all of Norway, Europe, and beyond by making use of the CorrespSearch [1] infrastructure. CorrespSearch is both an infrastructure for connecting correspondences across editions and collections making use of Linked Open Data (building on VIAF and GeoNames among other openly available datasets) and a web service that aggregates specific correspondence metadata from digital and printed scholarly editions. [2] These data can be easily searched via the CorrespSearch web interface or queried via their open API. By integrating Norwegian correspondences into the corpus of letters that already exists on CorrespSearch, they will become visible as part of a greater international network of letters and allow for a macroscopic view on the correspondence networks that existed throughout the centuries.

## 2 Aims

The aim of the NorKorr project is to aggregate and provide correspondence metadata from Norwegian editions of correspondences from different projects, institutions and collections in a format that can be ingested by CorrespSearch. The metadata in question are comprised of:

1. Names of writer and recipient of the letter (preferably with reference to the Virtual International Authority File VIAF). [3]
2. A unique identifier for each letter, usually in form of a URN.
3. Optionally, the places letters were sent from and to (preferably with reference to GeoNames). [4]
4. Optionally, the date of writing (in the ISO 8601 standard). [5]

<sup>7</sup> The Section for Special Collections holds ca. 600 separate collections of letters.

The final product will be a large set of metadata for Norwegian correspondences under a Creative Commons 4.0 License in the Correspondence Metadata Interchange Format (CMIF) [6] and an open workflow for (semi-)automatically creating and delivering CMIF-compliant correspondence metadata from future editions to the CorrespSearch web service.

In addition to aggregating the metadata from digital and printed editions, *NorKorr* aims to incorporate all digitized correspondence material. This means that all manuscript and private archive collections throughout Norway which have undergone or will undergo digitization and assign individual URNs to each letter together with a minimum of metadata (often derived from manuscript catalogues) will be interconnected. [7] At the present, CorrespSearch doesn't incorporate material that is not edited in either digital or printed format. NorKorr will, however, collect all correspondence metadata regardless and map it on the CMIF standard using the URNs as persistent identifiers for individual letters. It will thus be possible to use the existing infrastructure that CorrespSearch provides to connect material in almost all forms: scholarly edited, printed or digital, and digitized.

We see this expansion to be an important step towards making digital collections accessible and searchable cross-institutionally, a feature that is usually prevented by mutually incommensurable in-house solutions regarding encoding standards, cataloguing methods and metadata standards. In addition, because it is commonly only a small and often strongly canonised selection of authors, musicians, artists and academics whose letters are deemed worthy of a scholarly edition, the picture we have of Norwegian correspondence networks and Norwegian cultural contacts with the other Nordic countries and the rest of the world is strongly biased and non-representative. NorKorr is able to include correspondence material regardless of language, time period, social class, gender, and nationality.

### 3 Status Quo

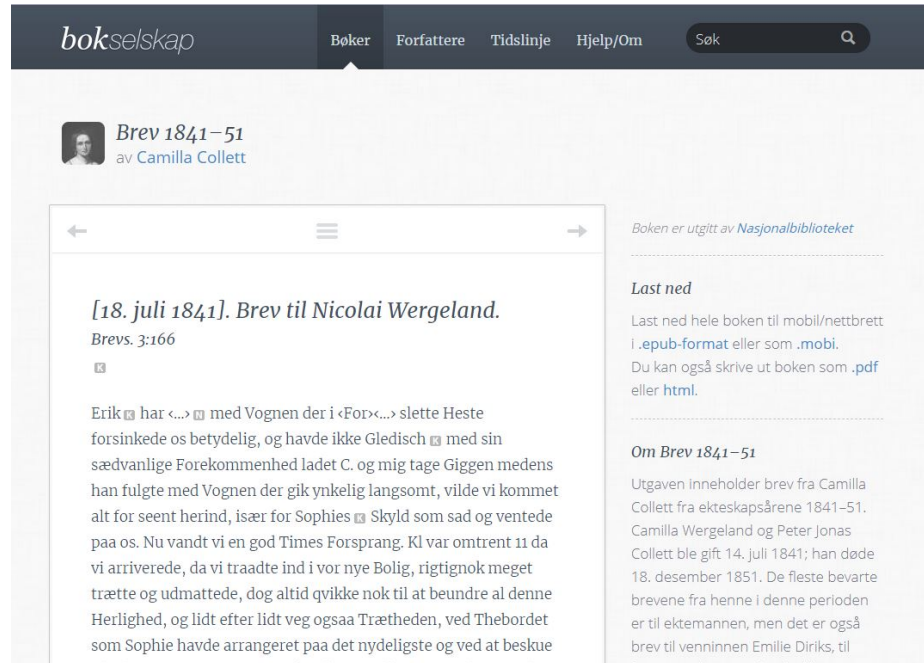
#### 3.1 Scope

We present a collaboratively created poster where we focus on five cases of correspondence collections at Norwegian cultural heritage institutions. For the cases, we decided to be as diverse and multifaceted as possible. We will describe the collections of letters of each contributing institution and the specific challenges each of these collections poses in regard to content, technology, and workflows we have established for connecting our correspondences.

#### 3.2 Case 1 – Letters from Norwegian Writer and Feminist Camilla Collett (1813-1895)

The National Library of Norway has approximately 1.000 letters written by Norwegian author Camilla Collett in its manuscript collection. More than half

of these letters have never been published. Collett's handwriting is difficult to read and there has been little research on them. We want to make the letters more available by transcribing, encoding, and publishing them. One of the publications is a digital edition containing ca. 50 letters written by Collett between 1841–1851. The edition is part of the library's source edition series NB kilder, published on the e-book website Bokselkap. [8]



**Fig. 1.** Screenshot from the digital edition of Camilla Collett's Letters

The letters are encoded in TEI P5 XML. To get the letters registered and integrated into the CorrespSearch web service we create a CMIF file based on the metadata already recorded in the `correspDesc` element in our XML files.



**Fig. 2.** TEI `correspDesc` to CMIF to CorrespSearch workflow

```

▼<correspDesc ref="http://www.bokselskap.no/boker/collettbrev1841_51/18juli1841nw">
  ▼<correspAction type="sent">
    <persName ref="http://viaf.org/viaf/56718081">Camilla Collett</persName>
    <placeName ref="http://www.geonames.org/3143244">Christiania</placeName>
    <date when="1841-07-18"/>
  </correspAction>
  ▼<correspAction type="received">
    <persName ref="http://viaf.org/viaf/24197942">Nicolai Wergeland</persName>
  </correspAction>
</correspDesc>

```

Fig. 3. Code snippet of the CMIF file for Collett’s Letters

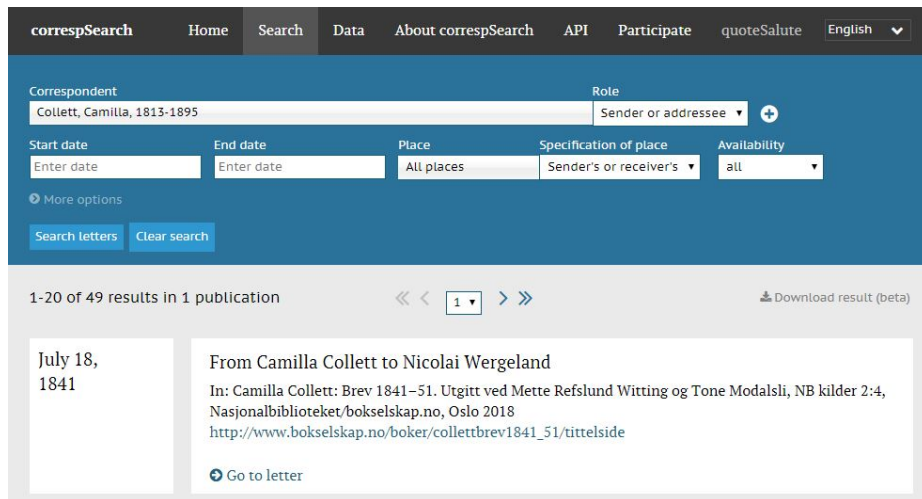


Fig. 4. Screenshot of Collett’s Letters in the CorrespSearch environment

### 3.3 Case 2 – Letters to and from Norwegian Artist Edvard Munch (1863-1944)

Norwegian artist Edvard Munch's correspondence with family and friends, and with assistants, patrons, collectors, art dealers, printers, newspaper and magazine editors, artists, writers, art historians, exhibition organisers, gallery owners, shipping companies, and more, comprises more than 10.000 known letters and letter drafts.

Among the more than 800 senders and 400 recipients currently in our online registers [9] are well-known names that are easy to connect to authoritative identifiers, but also many that aren't. Among those not present in authority registers are Munch's family and some of the friends he most eagerly exchanged letters with as well as other important people and institutions. The letters are written in Norwegian, German, Danish, Swedish and French as well as the odd occurrence of English, Italian, Spanish, Polish and Czech. The letters span 70 years, from 1874 to 1944, representing hundreds of handwriting styles and many types of letters. Metadata are partially incomplete; Munch himself didn't always bother adding date and place to letters, and envelopes are often missing, so analysing the content is necessary to discover when and where a letter was written and whereto it was sent.

Fig. 5. Screenshot from the digital edition of Edvard Munch's Writings

### 3.4 Case 3 – Correspondence Collections from the Norwegian University of Science and Technology University Library

The following four letter collections highlight the special collections of NTNU University Library through their international correspondence, thus showing their importance for adding them to a shared database.

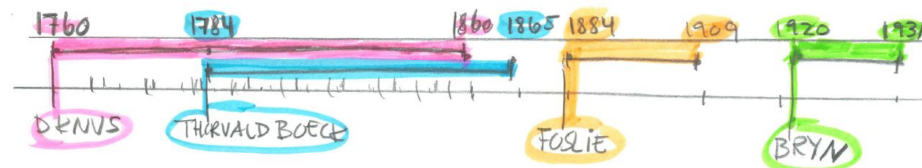


Fig. 6. Timeline for Collections from NTNU University Library

**The Royal Norwegian Society for Sciences and Letters Collection (DKNVS)** consists of 3.738 letters from the first 100 years (1760-1860) of its existence, among them letters from Carl von Linné, Artur Schopenhauer, Henrik Wergeland, Ivar Aasen, and many other known people who played a part in culture and science in that historical period. **Thorvald Boeck (1835-1901)** was a famous collector and known for assembling what was the largest private library of its time in Norway. The collection of 2.294 letters from 1784-1865 is diverse and consists among others of Royal senders and other famous persons. **Mikael Heggelund Foslief (1855-1909)** was one of the most important international researchers on the systematics of non-geniculate coralline red algae at the turn of the 19th century. From 1892 until his death he worked in Trondheim as a curator at the Museum of the Royal Norwegian Society for Sciences and Letters. His correspondence is an example of a worldwide scientific communication and discussion and the exchange of species among scientists. This collection of letters on botanical issues from 1884-1909 consists of 1.963 letters [10] **Halfdan Bryn (1864-1933)** was a Norwegian physician and physical anthropologist. As an army doctor, Bryn had opportunity to study men from different parts of Norway and this inspired him to do his research. The collection consists of 830 letters from 1920-1931. [11]

### 3.5 Case 4 – The Letter Collections at University of Bergen Library

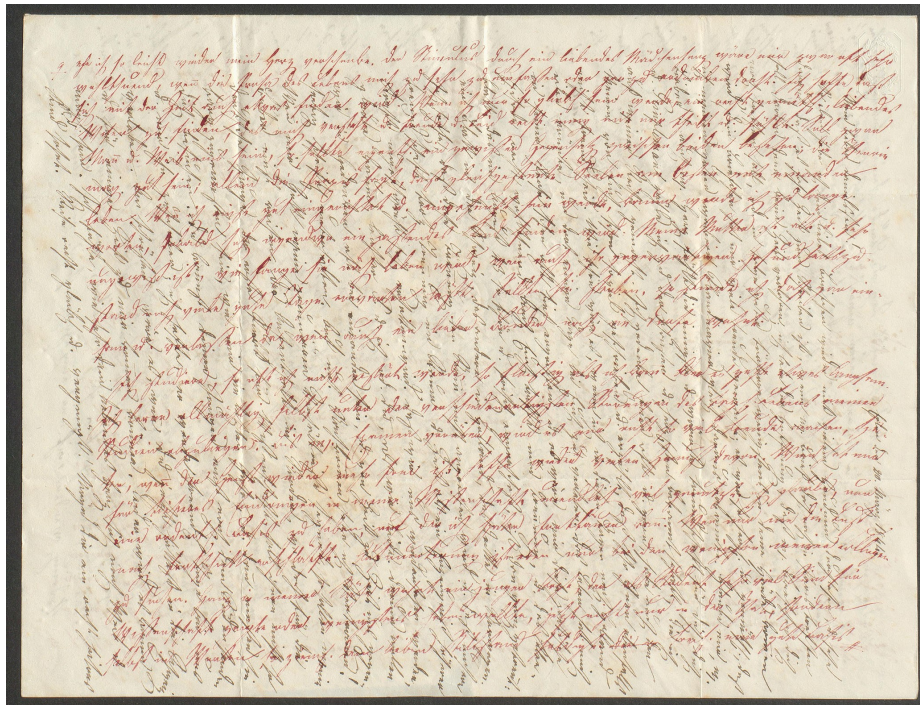
By focusing on three disparate collections of letters from the Section for Special Collections, we wish to show the value and potential of linking and contextualizing these collections in a correspondence database.

The first collection, **Ms 790** [12], actively collected by the Bank Officer O.J. Larsen, contains ca. 2.100 letters written by Norwegian and European celebrities, from Camilla Collett and Edvard Munch to Napoleon, Goethe, and Lord

Byron. As a curated collection, the letters defy a normal correspondence pattern. However, within a correspondence database new links to similar collections and related letters can elucidate the original correspondence.

The second collection, **Ms 2083** [13], contains around 350 letters sent to the physician, leprosy scientist, zoologist, and director at Bergens Museum, D.C. Danielssen (1815-1894). This fascinating collection reveals the wide-ranging exchange and collaboration of scientific research and ideas between Danielssen and scientists in Scandinavia and Europe.

Finally, **Ms 2155** [14], the Mons Flæsland Collection, is a private collection, containing ca. 950 family letters from the period 1895-1930. The collection describes everyday life, relations and destinies through three generations of detailed family letters. This uniquely preserved collection is equally important as a reflection of social conditions and class distinctions.



**Fig. 7.** Dated 20th of March 1844, this crossed letter from Ms 2083 was written by Diethelm in Frauenfeld and sent to D.C. Danielssen in Bergen.



### 3.6 Case 5 – Letters from Norwegian philologist and ethnographer Just Knud Qvigstad (1853-1957)

Just Knud Qvigstad was an expert on Sami language and culture (lappologist). He worked as the headmaster of the Tromsø Teacher Training College, which is one of the predecessors of UiT The Arctic University of Norway.

During several decades, Qvigstad was involved in an extensive correspondence with other experts on Sami from Norway, Scandinavia, and other countries. Some of Qvigstad's letters were digitized, transcribed, and published online as part of the Documentation Project [15] in the early 1990s:

- Qvigstad to Magnus Olsen (1909-1956) (65 letters), held at the National Library of Norway.
- Qvigstad to K. B. Wiklund (1891-1936) (96 letters), held at Uppsala University Library.
- Qvigstad to Emil N. Setälä (1887-1935) (96 letters), held at the National Archives of Finland, prof. Setälä's private archive.

documentasjonsprosjektet

**Just K. Qvigstad (1853-1957) Tekster**

Om forfatteren

(teksten i eget vindu)

Brev

Tekst og paginering er basert på avfotografieringer av originalbrevene. [Innside](#)

Tromsø 16 desember 1932.

Hr. professor Magnus Olsen.

For Deres venlige brev og meddelelse av 10de ds. sier jeg Dem hjertelig tak. Sidste sommer regnet det næsten hver dag i maanederne juli, august og september, og veiret var saa surt, at jeg opgav en paatænkt reise til Finmarken og bare reiste litt i Troms fylke. Jeg har derfor penger nok igjen til reiser til sommeren og behøver ingen bevilling av Instituttet. Jeg kommer ikke til at faa noget arbejde færdig til trykning i 1933. Jeg vil efter nyttaar for alvor ta fat paa de lappiske stedsnavne i Troms fylke. Nu er det en avtale mellem professor Nielsen og mig at vi sammen skal utgi en fortegnelse over de fællesnavn, som forekommer i stedsnavnene i de lappiske dialekter. En saadan fortegnelse vilde passe godt som indledning til mit arbejde om lappiske stedsnavn. Jeg har længe hat mit bidrag til en saadan fortegnelse færdig; men professor Nielsens tid har været meget optat, og jeg tviler paa at vi i 1933 kan faa fortegnelsen istand. Arbeidet med ordbogen optar Nielsens tid saa meget at man maa sande det gamle ord: "quem dii oderunt, lexicographum faciunt." Jeg har i dette aar utarbejdet ordlister over de lappiske dialekter i Lyngen, Kvænangen, Vestfinmarken og er snart færdig med Vananger. Senere skal jeg utarbejde lister for Tysfjord, Arjeplog og Vefsn – Hattjellidal. Jeg kan av dette arbejde skønne, hvor trætende Nielsens arbejde med den store ordbok maa være. Men saa har han jo utført et arbejde som blir staende gjennem tiderne. Jeg har for det finsk-ugriske selskaps jubilæumsbok i 1933 skrevet en liten avhandling om sproget i Tornes Manualia Laponicum (av 1648). Det vanskeligste var at presse stoffet sammen paa de faa sider som stod til raadighet.

Vi har i desember hat faa klare dage, saa vi almindelig maa arbejde ved kunstig lys hele dagen. Heldigvis er det nu kun 6 dager igjen til vintersolhverv. Jeg haaber at Deres svigerfar er ved god helbred og har god fremgang med sit arbejde, som jeg ivaares saa Nansenfondet hadde git penger til at trykke. De maa hilse ham fra mig. Vi ønsker Dem og Deres hustru en glædelig jul og alt godt i det kommende aar, og min datter Anna deltar i disse ønsker og sender Deres hustru en særskilt hilsen.

Deres  
J. Qvigstad.

Fig. 8. Screenshot of the early digital scholarly edition of Qvigstad's Letters

More than 20 years have passed since the publication of these letters. The aim of the project **Qvigstad's Correspondence 2.0** at the UiT University

Library is to re-edit the letters according to the requirements of a modern digital scholarly edition, including the following enhancements:

- Providing high resolution tif/jpg facsimile images
- SGML to XML/TEI P5 conversion of the transcription
- Embedding in virtual research environment for humanities: TextGrid
- Up-to-date web interface

In addition, the letters to Sophus Bugge (1833-1907) will be included. In collaboration with the National Library of Norway, a selection of letters will be published as a reader-friendly edition in NB kilder.

### 3.7 Project Website

In the spirit of Open Science, the project *NorKorr* is collectively developed on GitHub <https://github.com/arockenberger/NorKorr> *in plain view*. It is open for collaborators from all Norwegian cultural heritage institutions (ALM sector), the universities and other research institutions, individual researchers as well as any organisations or individuals who hold collections of relevant correspondence material. We document our code and share it under the Creative Commons Attribution 4.0 License. We build on the work shared by the CorrespSearch developer team, the TEI Correspondence SIG and the individual researchers and developers on GitHub and beyond.

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