# Visualising genre relationships in Icelandic manuscripts

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# DHN

## DIGITAL HUMANIORA I NORDEN

### DIGITAL HUMANITIES IN THE NORDIC COUNTRIES SECOND CONFERENCE

## GÖTEBORG, MARCH 14–16, 2017

GÖTEBORGS UNIVERSITET

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DIGITAL HUMANITIES IN THE NORDIC COUNTRIES

# DHN 2017

**Digital humaniora i Norden/**
**Digital Humanities in the Nordic Countries**
Göteborg, March 14–16 2017

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# Visualising Genre Relationships in Icelandic Manuscripts

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*Purpose*

The proposed paper is based on the research which arose from a collaboration between three of us working respectively on the writing and reception of medieval Icelandic legendary histories (Rowbotham); transmission history and applications of digital tools in philological research (Kapitan); and understanding the manuscript context for prose and poetic texts (Wills). We discovered that we had between us access to enough data and expertise to remarkably expand on previous analyses of the relationships between Old Norse texts as preserved in medieval and later manuscripts and, furthermore, that these analyses could be used to refine our definitions of literary genres and the place of individual texts within those categories.

We focused initially on texts belonging to a group of so called 'legendary' sagas, or 'mythical-heroic' sagas (Ice. fornaldarsögur), since the question of this group's genre status - specifically, whether fornaldarsögur (FAS) ought to be considered a distinct genre, or be analysed alongside their 'cousins' riddarasögur (RIDD) - has been widely discussed in the literature. Contradictory opinions concerning genre classification have been offered by leading scholars in the field; Mitchell (1991, 21) and Aðalheiður Guðmundsdóttir (2001, cxlvii) have suggested that fornaldarsögur were considered a distinct category of literature already in the Middle Ages, as they are frequently bound together in manuscripts, whereas Driscoll (2005, 193; see also Ármann Jakobsson 2012, 24) has suggested, also on the basis of their codicological context, that riddarasögur and fornaldarsögur should be treated as one literary group. Despite their opposing conclusions, the consensus among these scholars is that the codicological context of these texts is key to understanding the genre they represent.

Though it is necessary to look into medieval manuscripts to reach the medieval reader's understanding of the genre, we must take into consideration the huge loss of medieval manuscripts, and thus recognise that our knowledge of the medieval tradition is fragmentary. Due to this lack of data, looking into sixteenth and seventeenth century manuscripts may deliver us important information about the medieval tradition, since there is some probability that post-medieval manuscripts are close copies of their medieval exemplars, and thus might preserve the the texts' original context. Therefore, we have decided to look at all available manuscript descriptions collected in handrit.org, fasnl.ku.dk and the Skaldic Project Database. The method we have pursued for identifying genre association has been to analyse the complex manuscript context of these texts, on the basis that analysis of this context helps to inform our understanding of the genre classification of medieval Norse literature. The approach we have developed has been applied across the corpus to un-

derstand genre relationships as represented by the manuscript tradition.

*Method*

Our paper focuses on an interpretation of the relationships between Old Norse texts based on a statistical analysis of digitized manuscript descriptions. Since the initial focus of our research was an interpretation of genre associations within the corpus of fornaldarsögur an obvious point of departure was the online catalogue fasnl.ku.dk. The catalogue of all the manuscripts in which fornaldarsaga texts are found, including information on their format and layout, the other texts they preserve and when, where and by and/or for whom they were written.

Further data came from other projects: The Dictionary of Old Norse Prose (ONP) has produced a comprehensive list of works within the scope of that project (published in their Registre volume and with subsequent revisions), along with detailed information about the manuscripts for each work including the dating of the manuscripts and location of each work within the manuscript. This data was supplied to the Skaldic Project and has also been used (with permission) here. The Skaldic Project itself has supplemented the manuscript information with the poetry relevant to that project and other manuscripts that were not recorded in the ONP data tables. Additionally, relevant data for manuscripts not containing fornaldarsögur has been supplemented by the XML descriptions in handrit.org.

The ONP and Skaldic Project manuscript information is structured with texts linked to the manuscripts using a relational database model. fasnl.ku.dk and handrit.org, in contrast, give XML descriptions of the manuscripts. One of the challenges for addressing this question is taking the complex manuscript descriptions, constructed as TEI XML, and extracting the relationships between the texts contained within them. The manuscript descriptions from fasnl.ku.dk and handrit.org were designed to give a detailed description of each object and its structure, but do not definitively describe the relationships between items in different manuscripts. Consequently the same text in two descriptions may be labeled with different 'uniform' titles or even genre class. In order to build a visualisation and analysis of the relationships between texts and genres we have had to define these relationships ourselves. We describe firstly how one particular genre, the legendary sagas, was supplemented and normalised. Secondly, we describe how manuscript data from the fasnl.ku.dk, handrit.org, Skaldic Project and Dictionary of Old Norse Prose were merged, including processes for normalising text names and generic classifications.

An open source visualisation software, Gephi, was used to analyse 153963 connections between 1518 texts. A network of relationships between all the texts was achieved by application of ForceAtlas2 layout (Jacomy et.al. 2011). ForceAtlas2 is a force directed layout in which nodes repulse each other like magnets while edges attract the nodes they connect like springs, in case of our network, inspired by RIDD-network presented by Hall (2013), texts are represented as nodes, while edges represent manuscripts. The thicker is the edge between two texts the bigger is a number of manuscripts in which these texts appear together. Unlike in Hall's (2013) network, the size of the nodes is standardized and independent of a number of connections created by the texts.

Further analysis weights the connections between texts according to length (using page counts), as a large number of very small texts (i.e. þættir) can disproportionately influence the network by generating more connections. Additionally, we have compared results using different watershed dates for the manuscript tradition, including 1728 (the year of the great fire of Copenhagen) and 1829 (the publication year of Rafn's Fornaldarsögur norðrlanda).
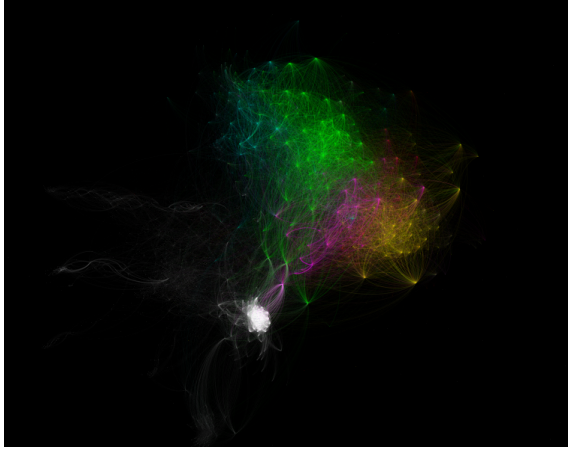
**Figure 1:** *Network of Icelandic literature. FAS - pink; FORNS, FORNTH - red; ISL, ISLT - green, KON, KONTH - blue, RIDD - yellow, RIDDST - orange; EDD - white*

*Findings*

As presented on Figure 1, the group of fornaldarsögur (pink) is positioned between íslendingasögur (green) and riddarasögur (yellow), and mixes with fornadlarsögur síðari tíma, and fornaldarþættir (red). Kongungasögur (blue) show close affiliation with íslendingasögur, while eddic poetry (white) creates a separate group, which is connected to fornadalrsögur through Hervarar saga ok Heiðreks. This connection can be explained by the fact that riddles from Hervarar saga ok Heiðreks were often copied independently from the saga, and included in manuscripts together with other poems, but in the catalogues they appear as the witnesses of the saga.

The data collected and visualised is of great value to the study of medieval Icelandic literature, but the great volume of it presents a significant challenge to researchers wishing to provide a detailed philological analysis. To begin to analyse the data, we decided to take a small number of texts as case studies and, marrying the approaches of philological research with those of the digital humanities, examine relationships between an individual fornaldarsaga and the texts it is linked to in the manuscript transmission. The selection of case studies was initiated by focussing on a number of texts that were of interest from a literary critical perspective, and that we regarded as somewhat 'pe-ripheral' to the fornaldarsaga genre; these included texts such as Hrómundar saga Gripssonar, for which we have only indirect evidence of its existence in the middle ages, Þjálar-Jóns saga, which has often been regarded in scholarship as a riddarasaga, and those texts, such as Helga þáttr Þórissonar and Norna-Gests þáttr, that were originally included as episodes (or þættir) in longer konungasögur, but since the nineteenth century have been included in the fornaldarsaga corpus. The XSLT scripts used in the earliest stages of our research confirmed that these texts, among others, were noteworthy for the frequency with which they appear alongside genres such as riddarasögur and konungasögur.

*Topics:* Visual and Multisensory Representations of Past and Present
*Keywords:* manuscript studies, network analysis, data visualisation, genre

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*Online resources*

Ordbog over det norrøne prosasprog Registre:
  http://onpweb.nfi.sc.ku.dk/mscoll_d_menu.html

Online catalogue handrit.org:
  http://handrit.org

Skaldic Project:
  http://skaldic.abdn.ac.uk/db.php?

Stories for all time Poject:
  http://fasnl.ku.dk/

Gephi The Open Graph Viz Platform:
  https://gephi.org

# Spatiality, Tactility and Proprioception in Participatory Art

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In this presentation I analyse performances, artworks and installations in audiovisual and contemporary art which emphasise tactile and corporeal experiences. This tendency can be observed in technological art, cinema and large visual attractions. I aim to demonstrate that due to technical developments and new tools, the possibilities now exist for new aesthetic experiences in which the body's position and its biological reactions are decisive. This leads to the question of how the critical or theoretical point of view of an artwork changes when the spectator's reactions to it are documented and quantified in real time and are changed into source material for the next stage(s) of the artwork. Does this constitute the next step in the research of interactive artworks which were based on the subjective analysis of the participant's reactions? Does it allow us to rewrite art analytical analyses, which were based on the subjective analysis of the researchers?

The main emphasis of this presentation is the proprioceptive experience in art. I will start with an analysis of earlier inventions and analogous practices which introduce corporeal artistic experience. I then investigate whether we can talk about the 'proprioceptive image' in the same way that we can speak about the artistic, musical or literary image. This analysis is influenced by a media archaeological approach, in particular Erkki Huhtamo's interpretation in which his approach is termed "media archaeology as topos study" or simply "topos archaeology." I aim to demonstrate how this "topoi" − "haptic and corporeal experience in audio-visual performances and visual art" or "spatiality, tactility and proprioception in participatory art" − changes and "transfigures" those examples in which the corporeal experience is translated into digital data and subsequently used for manipulations of the artwork. Before starting to analyse the works of Jeffrey Shaw, Char Davies and Bill Seaman in the sub-chapter "Tactility and proprioception in media art", I will provide a series of historical examples which lead to contemporary developments in media art.

The main focus of the text is on changes in the "art world", with an emphasis on fields which could be called media art, new media, electronic art, and contemporary art. To a lesser extent there is also a focus on discussions happening in crossmedia and transmedia—even though some projects are not easy to define, or belong to the fields of both new media and transmedia. This particularly concerns those works of multimedia where the tactile experience on screen is gradually becoming spatial and corporeal. Another topic under analysis is how clear is the tendency to make the audio-visual experience tactile, tangible and physically experienceable, in contrast to the virtual experience.

In my discussion of multi-screen and physically perceptible environments I want to show situations, solutions and artworks from the beginning of a so-called television