Following Digital Traces

A Study of an Online Swedish Literary Community

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The aim of this article is to, through an explorative approach, investigate how computer-assisted methods can be applied and used to examine and analyse a Swedish online publication venue for writing and reading poetry, Poeter.se. By using methods inspired and influenced by distant reading and the ongoing methodological discussions found within the field of digital humanities we argue that computer-assisted modes of reading are suitable when dealing with a vast digital material published online. We also identify a need of discussing the touching points in empirical material where a combination between data-driven quantitative methods and more interpretative hermeneutical modes of reading can be fruitful.

Keywords: close reading, digital humanities, distant reading, poetry

The development of digital technology presents new opportunities for 'passionate readers' (Collins 2010) to publish and discuss literary content through online publication venues, literary net-based communities and/or new modes of distributing literature. In line with the development and establishment of the many forms for self-publication on the web, questions regarding how to conduct humanistic research have been disseminated, presented and discussed within in the field of digital humanities. (See for example Moretti 2013 and Jockers 2013). As noted, by

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for example Siemens and Price in *Literary studies in the digital age* (2013), digital technology 'reshapes' the field of literary studies. Siemens and Price state the following:

> *Texts have acquired a new kind of malleability, and they are often encountered in large aggregations, allowing for a scale of research far different from that in the past. At the same time, new possibilities as well as limitations for publishing are changing how, what, and to whom texts are disseminated. These changes require us to reexamine assumptions and to adopt altered research methodologies.* (Siemens & Price 2013, para. 1)

Siemens and Price emphasise how material characteristics of a text in our digital contemporary society can be seen as part of an ongoing transformation affected by the ways they are published and accessed. These ongoing changes also affect, according to Siemens and Price, a parallel methodological change where researchers to a larger extent have to take into consideration the media-specific and material conditions. Following Siemens and Prices' methodological outlook and contemporary description of the digital literary field, the aim of this article is to examine how an online Swedish publication venue for reading and writing poetry, *Poeter.se,* can be understood and studied through data-driven and quantitative influenced methods. In this article, the observation above made by Siemens and Price is useful to present a perspective on how digital technology is an important part of how (literary) texts are consumed, distributed, and how digital traits can be worth further investigation when digital platforms and publication venues are being studied and analysed. The following research questions will be further investigated in this article: How can computer-assisted methods be used for studying an online poetry community? What contributions, consequences and critical perspectives does the use of these kinds of methods evoke?

Reading in the Digital Age

Before reaching our case-study and main example whereby the digital methods will be tested and discussed a more theoretical background is needed. In the following, we will present a somewhat schematic picture that illustrates the contemporary discussions on *reading* as a theoretical concept in relation to terms like *digital and/or computer-assisted methods and tools*.

During the last decade, the promises and benefits of the growing interdisciplinary field of digital humanities have been centred around and framed as methodological developments for how humanistic research can be conducted, with the help from computers, digital tools and/or certain software or visualisation programs. The question of how to use computer-assisted methods and what computers actually can *read* is central for the discussions and debates within digital humanities. With for example Moretti's distant reading (Moretti 2013) new ways on how to explore and pattern a vast digital material is presented and applied. In *How We Think* (2012), Katherine Hayles identifies and summarises two modes of reading visible in the contemporary debate by stating the following:

> *At the one hand of the spectrum "reading" in the Traditional Humanities connote sophisticated interpretations achieved through years of scholarly studies and immersion in primary texts. At the other end "reading" implies a model that backgrounds human interpretation in favor of algorithms employing a minimum of assumptions about what results will prove interesting or important. The first position assumes that human interpretation constitutes the primary starting point, the other that human interpretation misleads and should be brought in after machines have "read" the material.* (Hayles 2012, 29)

As indicated in the above quote, the modes of reading practices can be divided into two separate methodological outlooks, which imply two different research-designs where the research process can either be

characterised as digital-based or driven by a more hermeneutical perspective and approach. Although Hayles acknowledges and summarises the ongoing discussions and approaches in a suitable way, we will present arguments for why combination(s) of these two modes of reading is needed. The methodological "in-between position" (see for example Pennlert 2018) derives both from a conceptual and general perspective. In her book *Charting the digital literary sphere* Simone Murray states the following: "What is currently missing and is urgently needed is a digital literary studies that is both contemporary and contextual" (Murray 2018, 9). A similar observation is made by Alan Liu when he states that: "It may be predicted that one of the next frontiers for the digital humanities will be to discover technically and theoretically how to negotiate between distance and close reading." (Liu, "The state of the digitial humanities: A report and critique, 2012).

The above observation made by Murray and Liu can be also be used as a critical gaze on Moretti's distant reading and the consequences of viewing literature and literary history as a somewhat static system (see Ascari 2014). Distant reading, per se, therefore omits how quantitative outlooks can be combined with more in-depth readings and reflections. Expressed differently, the contextual factors that characterises a certain period of time, as well as contemporary conditions for how digital technology affects how we write and read, are not sufficiently addressed by distant reading.

Our ambition with this article is to, by an explorative methodological outlook, present and discuss where bridges or synergies between computer-assisted methods and more text-based approaches and perspectives in studying the Swedish online community for poetry, *Poeter.se.* In that sense we are influenced by what Liu (2012) recognises as an important development and challenge for researchers attached or affiliated with digital humanities, by stating the following: "It may be predicted that one of the next frontiers for the digital humanities will be to discover

technically and theoretically how to negotiate between distant and close reading" (Liu, 2012).

Poeter.se and Social Media Platforms for Writing

Digital technology and the development of social media can be said to, as media scholar Alfred Hermida notes, respond to a human need to communicate with others and to share ideas, opinions and personal expressions (Hermida 2014). He argues that participation on social media platforms can be seen as relational activities where people interact with technology and each other (compare Jenkins 2009). The communication on social media platforms can also, according to Hermida, be characterised as "ephemeral" and in that sense similar to an oral utterance (Hermida 2014, 28). Following this line of reasoning, the texts published at *Poeter.se* can be seen as digital traces where personal expressions, personal opinions and online activities among the users are framed in a literary context, limiting and promoting certain behaviours and publications in line and in interplay with the editorial guidelines expressed at the website, as well as more technological options and interfaces containing tabs, menus and options that are presented to the users. To collect the material published on the website is, therefore, an intricate matter that has to deal with questions regarding data/empirical collection, collaboration and ethical considerations.

In relation to poetry as a literary genre, it has been claimed that digital technology has an important role since the conditions for the poets in the literary field often are associated with a DIY-culture where the individual writer acts as their own agent, editor and marketer (Baverstock 2011). Social media and digital technology have given authors and readers new possibilities to publish and interact with readers (Baverstock 2011; Söderlund 2009) but has also created publishing-platforms for anyone interested in writing to publish their own or comment on other people's literary works.

One such platform is *Poeter.se* which was founded in 2003. According to the editors, it is a "website where … people meet and where new poetry is being created" (https://www.poeter.se/Om+Oss). The editors emphasise the interaction amongst the members as a central feature of the community in the editorial guidelines and this is a view that is expressed in different forms at the website. To get access to the communicative and publication abilities available at *Poeter.se* a registration is needed, where the member chooses a username and password. The writing that are conducted at the website focuses on a distinct author-role created by both editorial guidelines as well technological functions. (for further discussions on how this is created, see Pennlert 2018)

After registration the member is presented with several functions with affinities to other social media platforms, such as "Profile" (the place for self-presentation and where the users can publish descriptions of themselves), "Write text" (the publication tool from where the members publish literary works) and the ability to comment on other users' published texts. Before the text is published the member can choose different textual markers or genre-categories, for example "Free verse", "Bound verse" or "Blog". It is also possible to add keyword "tags", audio files and pictures to accompany the text. These features constitute navigational digital paratexts (McCracken, 2013). In turn, these paratexts guide and turn the user towards certain communicative and/or publication behaviours. How these navigational digital paratexts work at the website have been further investigated and discussed by Pennlert in her doctoral thesis *Poetry in progress* (2018) which focuses on different aspects on how the website works as a literary digital community, how the authors present themselves and how poetry as a genre is negotiated on the website.

At *Poeter.se* – Quantitative Readings

In our following analysis, we will present examples and visualisations on how quantitative and computer-assisted readings can be used to gain an overall picture of activities, publications and communication among the

members. The total material published at *Poeter.se* consists of 33 423 registered users, 872 283 published literary works (through the publication-tool "Write Text") and around 2 million published comments to these texts.

Obviously, there is no workable way of comprehending this vast collection of material by traditional means of manually reading the texts and comments or to identify the relations between different users and their roles on the website. With the help of digital methods however, it is possible to get an overview of how the website works, for example by focusing on user activities or the total amount of text-publications. We will now discuss in what way computer-assisted methods can be useful in giving a general picture of how the website is being used by its members.

In the following, we will first focus on descriptive data about the site with a specific focus on the published texts and the different genres that stand out. Secondly, we will focus on what kind of texts that the members are most likely to publish and how relationships between texts and members can be charted and understood. As a third empirical example, we will discuss how digital methods can be useful as a support in combination with more textual qualitative analysis.

One way to get a grasp of the popularity of the website and how many members that are part of the community is by compiling the numbers of newly registered users/year. Figure 1 shows the pattern of how many new registered users distributed over the years 2003–2015. As a general observation, the figure indicates that user registration at the site has its peak during the years 2006–2007 with almost 6 000 newly registered users. Worth noting is also the fact that although the numbers of new registrations stabilised at slightly above 2 000 a year during 2012–2015, the website continues to attract new members in fairly high numbers.

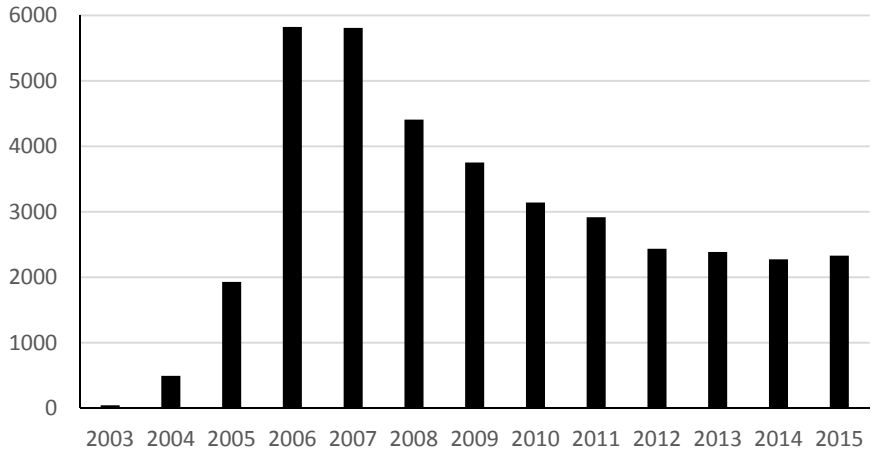

Figure 1: Number of newly registered accounts per year

The pattern in the figure suggests that the site experienced a kind of "hype" phenomenon during the years 2006–2007, where, from a modest start, the site suddenly attracts a very large number of new members. While it is not possible to deduce the reason for the fast expansion, and while it also might be related to external factors promoting online activity in general, it is noteworthy that it exhibits a pattern that closely resembles other new technology-based online activities. In that sense, this development of a social media site follows the concept and description of hype cycles of emerging technology that was identified by Gartner Group (Gartner n.d.). Without repeating their colourful language, it can still be seen that after a brief period of very quick expansion up to a very high number of registrations (hype), a period of decline is seen, where the novelty of the new technology wears off, followed by a stabilisation at a more sustainable level. Interestingly enough, although the site is now in its 15th year of existence, it is still a very active social media site and neither registration rate, nor the number of poems and comments that are published (see below) seems to decline.

Another perspective on the popularity of the website is possible to trace by instead focusing on the published texts, both poems and comments. The number of publications made by the users on the website to some degree follows the number of incoming new users (see Figure 1) but in Figure 2 below it is evident that the time scale of the increased number of published texts is somewhat delayed in relation to the increase in registration numbers. To some extent, the same hype cycle as is shown in the number of registrations is evident in the number of daily texts and comments.

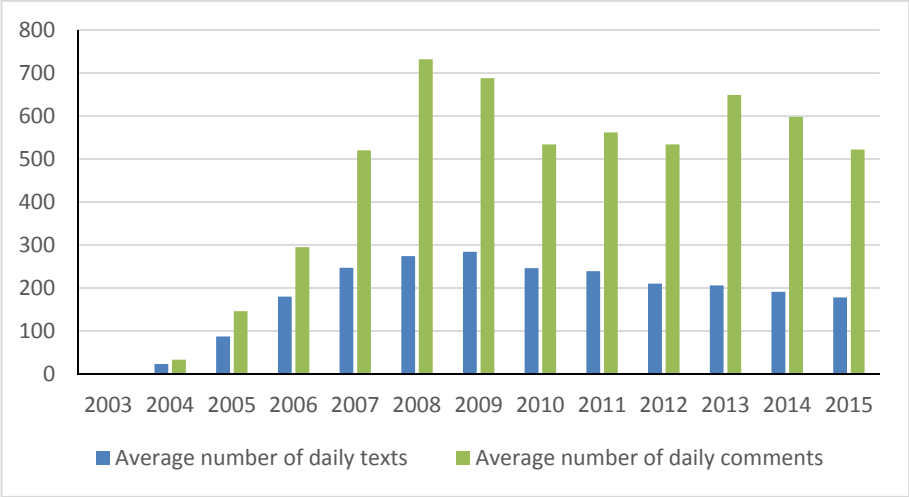

Figure 2: Average published text on a daily basis at Poeter.se

While the incoming users or so-called "new-regs" had a peak between the years 2006–2007 the number of texts published daily is instead found between the years 2008–2009. The average number of published comments has a parallel development during the same years but during the years 2013–2015 this correspondence disappears.

Figure 2, where published texts in the categories "Literary Works" and "Comments" are compiled, reveals several findings that we now will look

deeper into. The total amount of published texts (literary works + comments) shows that Poeter.se is a popular publication venue. The distribution of the texts also indicates that the website is a place for literary commentary; the total amount of comments is higher than that of published poems, a trend that is visible throughout the period of time investigated, 2003–2016. The fact that the comment is such a popular publication-form can be interpreted as reflecting the social/relational aspects of participation that a membership in the online literary community constitutes. In several ways, the editors also underline the communicative and social aspects of a membership by the different types of encouragements and guidelines expressed at the website.

From a more general perspective, similarities can be found between the development of *Poeter.se* and other social media platforms at the same period of time as when the website attract new members (2006–2007) and when the rate of published texts (both comments and literary works) is high (2008–2009). In this article, we will not further address the changes in media use in the general population during the years of 2006–2009. We are aware, however, of how the popularity of *Poeter.se* can be understood in the light of, and situated in, the development during these years, where social media platforms such as blogs had recently become mainstream and the public establishment of other types of social networking sites such as Facebook and Twitter was also happening.

The high number of comments can also be a starting point for more qualitative studies on the content of the commentary texts, the technological interface and design and other user-generated popularity markers presented to the users (see for example Pennlert 2018). One way to approach qualitative and literary aspects in the published comments could be to address, as noted by for example the Swedish literary scholar Petra Söderlund (2009), the tendencies for online readers (i.e. readers at online publication venues and/or digital literary communities) to read and interpret the text in an autobiographical manner and relate the content of the literary text to their own lives. As Söderlund (2009) argues, the reader

in an online community puts a lot of energy in creating a constructive emotional surrounding and a sense of belonging.

These relational contextual properties at *Poeter.se*, can also be linked to more genre-specific traits underlining that poetry as a literary genre is linked with emotion and inner feelings mediated by the poet (Håkansson 2005). How the comments and the interpretations of the text published at *Poeter.se* mediate this conception of poetry is possible to visualise through for example the following word-cloud (Figure 3).

Figure 3: Word cloud for the concept "beröra" (eng: "affect")

The word cloud above shows instances of the Swedish word "berör(d/ande)" (eng: variants of "affect") is in comments to published texts and what other words often are found together with it. It is often given a positive notion and often occur with words such as "vacker(t)" (eng:

"beautiful"), "stark(t)" (eng: "strong"), "känsla", "känner", "känns", (eng: all variants of expressing a "feeling"), but of course also nouns such as "dikt" (eng: "poem"), "text", and "ord" (eng: "word").

Quantitative approaches to the material also make it possible to trace and investigate the most popular genre-markers used by the members. At the website, users are presented to different genre-markers which are followed by short descriptions and characteristics of a certain genre. Interesting to note is that these genre-markers are well known from the print-based literary field, and hence migrate into the digital environment. By computer-assisted readings it is possible to chart patterns of what kind of texts the members choose to publish and how the different genre-markers presented to the users at the website are distributed. Figure 4 shows the published literary works and their user-generated textual markers. The figure shows that from the total amount of 872 283 literary texts the vast majority, 84 percent, is published in genres associated with poetry: "Free Verse" 75 percent and "Bound Verse" 9 percent. This gives at hand that the texts published follow the guidelines expressed at the website where the editors state that *Poeter.se* is a "place for poetry" (our translation). In total numbers, 84 percent of 872 283 texts gives a total amount of around 732 700 poetic literary works published during the period of time 2003–2016. The pie chart, however, does not show what the distribution amongst the members looks like or to what extent the members publish both text-forms (comments–poems).

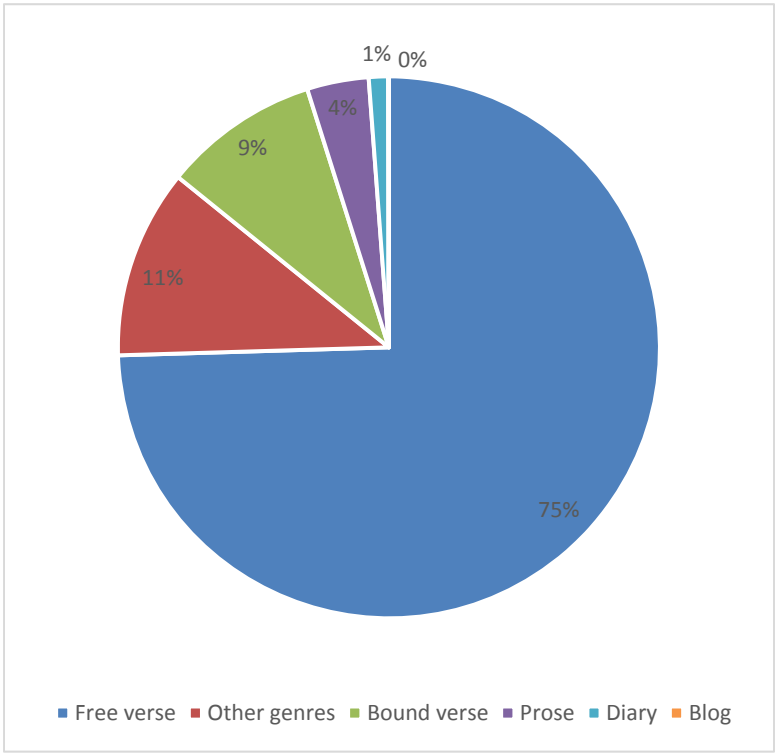

Figure 4: Total amount of published texts based on genre-markers

By adding data on gender to the analysis it is possible to find patterns in the members' activities and publications. In the table below, the stated gender (that is, the gender that the member through the registration-process states) is added as a variable. However, important to note concerning "Gender" is that the members can choose by the categories "Male", "Female" and "Unknown" at the registration at the website. These three categories should not be seen as always equivalent to the reality; the member can use the statement of gender as part of developing an online persona or as a way of undertaking an online experimental identity play. However, the categories that the users can choose from (Unknown, Male, Female) and other forms of user guidelines expressed

at the website imply that the editors underline that the poet should reveal personal information about him or herself as a way of becoming a distinct subject/person even in the digital environment (Pennlert 2018) and that the characteristics of the author at *Poeter.se* are strongly linked to concepts such as individuality and subjectivity (Chartier 1995). This shows that digital writing that occurs at Poeter.se and the concept of the digital author (see Poster 2001) cannot easily be applied to the construction of the author at the website.

In table 1 below, we have compiled the distribution of genre-marked texts with the category of stated or unspecified gender.

Category	Women	Men	Unspecified	Total
Free verse	320 287	206 276	123 515	650 078
Other genres	50 212	27 915	20 285	98 412
Bound verse	24 379	40 290	16 621	81 290
Prose	10 987	11 440	9 684	32 111
Diary	5 201	1 797	3 044	10 042
Blog	3	5	305	313
None	14	17	6	37
Total	**411 083**	**287 740**	**173 460**	**872 283**

Table 1. The distribution of text categories in relation to genre and stated gender (if specified)

The distribution of text categories in relation to genre and stated gender shows that the stated gender "Female" (with regards to the above discussion on the significance and validation on "stated gender") are likely to publish in all genre-categories except from "Blog." Stated gender "Female" has published around half (411 083) of the total amount of publications. (872 283). The most popular genres are "Free verse", "Other genres" and "Bound Verse". Concerning stated gender "Male" the most popular genres are "Free verse" followed by "Other genres" and "Bound

Verse". Although the digital environment offers possibilities for the user to not state information concerning what gender they identify as and therefore appear in the category "Unspecified", most of the users choose to make use of the categories "Female" and "Male".

Authors, Reviewers and Social Actors

The descriptive statistics of texts and stated gender do not show more individual aspects and examples of the members' different publishing-strategies or activities on the website. Expressed differently, Table 1 does not reveal where different publication practices intertwine with each other or the combined publication practices (where the member both publish comments and literary texts) that can be found among the users. By focusing on the members' activities, it is possible with computer-assisted methods to focus on the highly active members and what kind of text they tend to publish. This leads us to a small group of members (46) that together have published around 20 percent of the total amount of texts during the years 2003–2016. On average, this group of productive authors where found to publish 495 texts each per year (not including comments), with a maximum average of 1 674 texts at a yearly rate!

To get an overview of the publication practices at *Poeter.se* it is also possible to divide the users into different author-types or writing-categories. The pie chart below (Figure 5) is based on users that have published at least 250 published literary works or comments. By this division, we ended up with a total number of 1 328 of users, and their activities are based on the following analysis. After finding these users we also developed three categorisations of what we define as "author-types" that are based on the publication-format (text or comment) that the user is most keen to publish. The first category is what we call "Author" and this category consists of users that are most keen of publishing literary texts through the publication tool "Write text". If more than 80 percent of their production on the site is composed of literary works in the form of original texts, we place them in the category labelled "Author". Conversely,

a user designated to the "Reviewer" category, instead, has predominantly made comments on published original texts at a share of more than 80 percent of their production. Based on the fact that comments are a popular form of published text we had a presumption that this group might end up to be the largest. Since the categories "Author" and "Reviewer" also tend to overlook the members who in high extent publish in both formats we constructed a third category that we named "Social writer". This category is based on a ratio of published texts to comments between 20 percent and 80 percent.

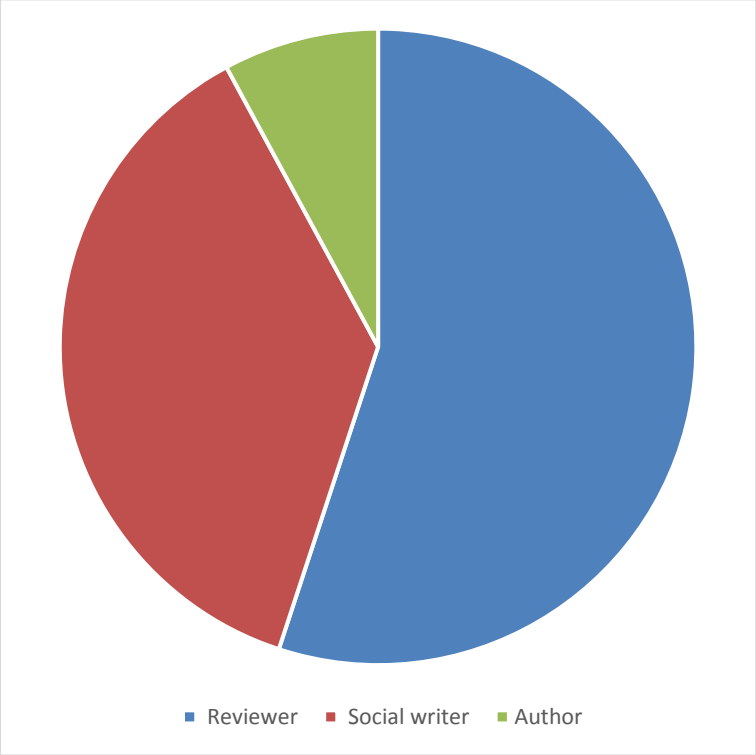

Figure 5: Share of author-types of writing-categories

Figure 5 shows what was already discussed above, namely that the website is predominantly being used by its members as a place for commenting on others' texts. The category "Reviewer" is not surprisingly the largest, consisting of more than half of the share of users (55 percent) that have published more than 250 comments or texts. As for the other two categories "Author" and "Social Writer", the pie chart reveals that the category "Author" only consists of less than one-tenth (8 percent) of the users and that the "Social Writer" consists of slightly more than a third of the users in the set (37 percent). A result of this figure is therefore that a number of questions can motivate a more in-depth qualitative analysis, for example by posing questions on how this "Social Writer" comment on literary works published by other members, what kind of poetry that is published within this category of authors and to what extent these writers also present themselves in a more "social" manner in the spaces for self-presentation that the website's technological interface offers its members. Related to how the editorial guidelines and technological functions support the website as a place for interaction and publication the three categories show that most of the users either comment on texts or engage with both writing and reviewing at *Poeter.se*.

The above figures and discussions show the possibility to get a statistical and visual overview on different aspects of the activities at *Poeter.se* by focusing on text-publication, registered users, and the connection between published genre and stated gender. Computer-assisted methods can also be useful in trying to chart the connections between the members through a network-analysis. Before our closing discussion on the potential and risks with using quantitative methods in literary studies, we want to shortly address how social network analysis can be useful when dealing with many actors/members. Figure 6 is comprised of the 500 strongest relationships in terms of comment frequencies between a total of 220 prolific authors on the website made in Gephi (Bastian et al. 2009). The nodes are different authors, and the arcs represent that an author has commented on another's work. The size of the nodes is based

on the indegree, meaning, the number of comments each author has received. The colour of the nodes is derived from a community-detection algorithm in Gephi (modularity) that clusters nodes together based on their connections. Based on their relationships, we could identify communities of authors that comment on each other's works, often with a stronger attracting author (e.g., the green on top, the purple at the bottom left and a red one to the right). By varying the resolution of the modularity algorithm, more or fewer communities of interaction between the members can be detected. These connections could be used to further investigate the texts published on the website based on themes, interests of the authors or other relationships that goes beyond what each author has knowledge about. For example, two authors might know that they have similar interests, but the graph can show that there are other authors that may share the same interests.

This kind of visualisation highlights methods for measuring so-called commenting coupling "fronts" or co-received comments as the authorship "base" of the texts on the website. These characterisations of author relationships are derived from bibliometric notions of bibliographic coupling of references as a detection algorithm for "research fronts", and the notion of co-cited works as forming the "intellectual base" of a community (Persson, 2004).

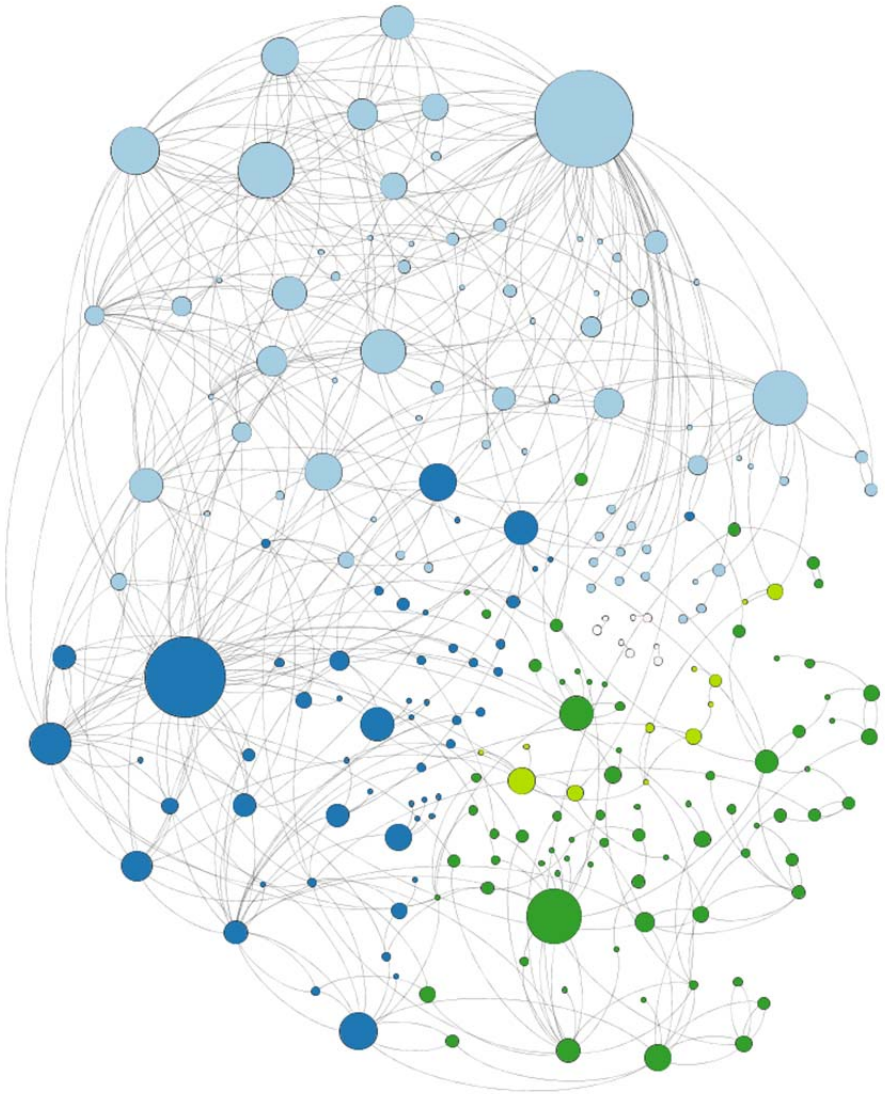

Figure 6: Network graph of 500 comment relationships (arcs) between 220 prolific authors (nodes) of the authors on the website. Sizes are based on the number of comments received and colours are based on clusters of "communities" of authors that often comment on each other

A Combination of Methods – Reflection on Our Readings

As discussed above, the figures, graphs and tables that compile – and present – descriptive information about the activities, published texts, stated gender and newly registered members on the website are ways of charting and patterning the vast material published at *Poeter.se* during the years 2003–2016. As for online publication venues the digital traits of the material, as such, are suitable for an explorative approach to computer-assisted methods since the activities and published texts derive from a digital environment. In this article the aim was to discuss how computer-assisted methods and digital tools can be used in understanding a popular and contemporary form of writing and reading that appear in "the digital literary sphere" (Murray 2018) and we will now, finally discuss the conclusion of this approach to an online popular publication venue.

In analysing *Poeter.se* we have used quantitative methods to get a grasp of the vast digital material that is published on the website. However, working with large-scale text analysis it is also important to note that the two modes of reading that Hayles (2012) identifies are stressing the importance for the humanistic scholar to collaborate with other disciplines and competences to fully understand what is hidden in the "black box" and how the computer "reads". Following this line of reasoning, we want to stress the theoretical implications of the advent of digital tools and methods, as well as the discussions and debates associated with this development. Although computer-assisted/quantitative tools, technological software and computer-assisted methods can be seen as part of an ongoing tradition within humanistic research and disciplines such as literary studies, geography, science and technology studies and scientometrics (Callon et al. 1986; Cronin & Sugimoto 2015; Goodchild 1992; Hockey 2004), the contemporary discussions and practical implications of these tools call for contextual and theoretical/critical attention. Expressed differently, it is time for humanistic researchers to attend to the theoretical claim made by for example Franco Moretti when he states

that distant reading is a "condition of knowledge" (Moretti 2013). A starting point for the theoretical and critical discussion within the field of literary studies interested in understanding and interpreting the reading and writing practices conditioned by digital technology (as a form of distribution of literary works or forming communities around reading and/or writing) is by further exploring, testing and discussing in what ways quantitative findings may constitute stepping stones for more text-based and qualitative textual analysis.

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