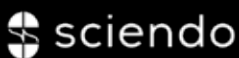


Estonian filmmaker demes: A network analysis within the Estonian Film Database



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ABSTRACT

This article discusses ways to use link analysis and network analysis to study the evolution of film culture – how filmmakers have collaborated with each other and what kinds of films have resulted from their collaborations. The study is motivated by the concept of a “deme”, a concept developed by John Hartley and Jason Potts to refer to communities of creators that produce similar, thematically related work. This paper discusses our attempts to study the evolution of the demes within the broad networks of Estonian filmmakers based on data from the Estonian Film Database (EFD). The article discusses our method development for such a study and applies the method to explore the evolution of the demes of Estonian films and their maker communities from the 1950s until the 2010s.

KEYWORDS: Network analysis, film evolution, filmmaker collaboration, demes, cultural semiotics

INTRODUCTION

A significant rise in the role of databases and archives is a key characteristic of contemporary digital culture. Platforms such as YouTube, Spotify, Netflix, or Europeana or industry databases such as IMDB, TMDb or Cinando (Zemaityte et al, 2024) not only aggregate and store but also contextualise content in cultural and textual networks and personal usage histories, affecting both the users' experience and the broader analysability of culture. Such contextualisation, as well as recommendation algorithms resulting therein, are based on standardised and formalised metadata systems (Pomerantz, 2015), which determine the parameters of, and often also the vocabulary for, describing (modelling) the objects; i.e., cultural data such as films, musical pieces, literary texts, and so on. While one can detect a proliferation of digital cultural databases globally,

the Estonian Film Database (EFD)¹ stands out for its exceptionally detailed metadata system, especially regarding the content metadata (including keywords pertaining to the theme, topic and tonality of the films, objects, persons, locations, and temporal periods depicted, medium-specific devices of representation applied, etc.). The profiles of films also include synopses, trailers, still images, musical scores, and excerpts from media reviews, altogether resulting in a relatively complex model of each work. This, coupled with the fact that the small size of the Estonian national film corpus has led to the completion of its digitalisation and indexing, gives us an unparalleled resource, which enables the analysis of the evolution of Estonian film, its industries and cultures using the novel methods of network and link analysis.

1 <https://www.efis.ee>

In this paper, we will proceed from the mission statement by one of the founders of EFD, Hagi Šein (2015), who envisioned a complete national filmography that would facilitate answering questions about the whole span of Estonian film history. We will sharpen our focus on the networks of filmmakers together with the themes and topics of their oeuvre, seeking to determine the composition of distinct creative teams, their thematic emphases, and the genealogy of their discourses.

The rationale for this focus stems from one of the basic ideas of Juri Lotman's (2001, 2009, 2013) cultural semiotics, that the entire cultural space – the semiosphere – comprises a large volume of interacting subsystems. This means that groups with special interests or knowledge communicate frequently with each other, and, as a result, the relevant expertise created by the participants also accumulates and develops in the textual material they produce. However, this same textual material also works auto-communicatively (Lotman, 2001; Hartley et al., 2021); i.e., by defining the distinctive characteristics of the community that has created it. Such constant redefinitions in the textual material shape and reinforce over time the positions and roles of the particular community in the culture. John Hartley and Jason Potts (2014) have called these text-producing and auto-communicative communities "demes". According to them, demes are groups of people that generate stories and other texts that distinguish this community and also constitute and hold it together. That is, it is the texts they produce that make the demes.

It can be suggested that there are increasing numbers of such demes – as media ecosystems fragment and diversify, this also facilitates the emergence and evolution of further specialised creator demes. However, they are also partially converged, as, for instance, the demes that create film and TV content overlap the demes in TV industries, and the latter again overlap with the demes of print media. According to this view, society and culture consist of more or

less intertwining, but still always distinct and auto-communicatively functioning, demes. Using the method described below, our goal in this research project was not only to search for small demes in the local film history but also to look at the entire filmmaker network and its textual expression as a separate deme in the broader Estonian culture.

DATA AND METHOD DESIGN

EFD is a so-called relational database in which various data items are structurally related to each other, and keywords listed for individual films simultaneously function as nodes linking different films into networks. For example, the year of each film's premiere is recorded, which allows one to identify all the films screened that year, and therefore, the films are automatically linked by year. Similarly, actors, themes, objects, locations, etc., can be automatically linked, and each entry in the database acquires an additional function of linking to other entries. Both relational databases and, for example, the structure and elements of the so-called semantic web function in this way. Visualising such networks as diagrams facilitates the discovery of distinct clusters within seemingly incomprehensible complexity.

The emphasis on links between database elements highlights the fact that, from a technical point of view, our method is based on the classical link or network analysis methods (cf. Barabasi, 2002; Borgatti et al., 2009; Schich et al., 2014; Thelwall, 2006), which examines the relationships between network elements (nodes). Unlike in the analyses of social networks, the networks in our case are not only composed of people – the focus is on the links between people and different textual or material objects or phenomena that constitute a deme and the nature and transformation of these links. An example of the application of this method in the humanities can be drawn from the field of art history. The curators of the *Inventing Abstraction 1910–1925* exhibition at the Museum of Modern Art in New York, in collaboration with researchers at Columbia University,

mapped a network of creative people and intellectuals whose communication (in correspondence and other documented works) generated the idea of abstractionism and its means of expression.² By creating a visualisation of the network, the myth of the so-called “lone genius” was refuted. The emergence and spread of abstractionism within a comprehensive and closely connected network of people, with links operating in geographically distant places and different media, was mapped. This method also made it possible to assign roles of importance to people and groups who were previously not even associated with the topic.

In sum, our study of demes, or semiosphere subsystems, differs from the study of social networks in that we are interested not only in the links between people but also in the texts they create. More precisely, we are taking a closer look at the social networks that are linked by films. Even more precisely, the links consist of the keywords denoting the representations (characters, themes, phenomena, objects, places, etc.) to be found in films in the databases. If, for example, in the case of films from the same era, the keyword networks partly overlap and are produced in part by the same people, one could potentially speak of a single subsystem of the culture, or a deme as defined by Hartley and Potts. In this case, the networks of keywords, which emerge through their concurrence in different films, comprise a metadiscourse about films and the deme that has produced them. The proposition that interlinked metadata entities constitute a domain-framing metadiscourse builds on the work of Pomerantz (2015) and the media archaeology of Ernst (2013, 2015), synthesised and further developed by Ibrus and Ojamaa (2020).

To study the links between filmmakers and their films and how these have changed, first, various aspects of the data in EFD needed to be cleaned. First of all,

we excluded all the animated films and distinguished between documentaries and feature films, which generally have different groups of creators and often divergent themes. Thereafter, these categories also had to be organised, excluding, for example, newsreels, chronicles, popular science films, as well as other classifications (television programmes, short series, commissioned films, etc.), all of which are included in the EFD database under separate designations. Not excluding them would often have skewed the analysis; for instance, the very large number of newsreels in the database would have slanted the corpus of the documentary genre.

Various keywords in the database also had to be specified, sometimes excluded, because some of them (e.g., Tallinnfilm – a keyword referring to the dominant Soviet-era production studio that produced almost all films in this era) pervaded the entire data set. We also excluded keywords related to film awards, decennial definitions, and separate genre descriptions because in the analysis we were less interested in the keywords per se and more in how they mediate the realities of Estonian life shown in films. The editing process also revealed several iterations that we had to adjust (e.g., *Väliseestlased* and *väliseestlased*, both referring to Estonians living abroad).

For the hardware and software at our disposal to be able to manage the data, thresholds had to be set for the concurrence of the features, which limited the number of concurrences. There are many keywords in the database that are used only once. However, including all of them in the analysis would have required advanced computational power while not helping in the search for broader or more lasting film discourses or demes. That is why we decided to focus on pairs of keywords that appear together at least three times (in reference to all types of films and including all decades).

Technically, executing link analysis means defining the pairs of network vertices, the relationships of which one wants to study. For example, such vertices could be

2 See: <https://www.moma.org/interactives/exhibitions/2012/inventingabstraction/?page=connections>

everyone involved in making a specific film. In this case, the relationship between all the participants should be highlighted one by one for link analysis. In our case, it was also important to highlight other characteristics of the relationship (the year of a film's first screening, its genre or type, and the particular roles of filmmakers). Therefore, the description of a link looked like this:

Person 1, Person 2, 1984, documentary, editor-producer

This indicates that the documentary, which links two people, was released in 1984, and the first person was the editor of the film and the second the producer. This enabled us to search for and compare networks operating in specific years, networks of different film types, or networks connected by specific persons, such as producers. In this way, the evolution of networks over time, or even fundamental differences between cultural subsystems, could be studied. For example, the networks of documentaries, animators, or feature filmmakers may not only partially diverge, but their subject matter may evolve based on a different logic while still influencing each other. The detection of these differences and effects could be one of the main objectives of the method design described above.

After designing the link-pairs and studying the networks of cinematographers, we had to simplify and reduce the amount of data once again in the interests of elucidation. Anyone who has watched the final titles of a full-length film knows how many people it takes to produce a film. At the same time, it is clear that some of them play a more decisive role in the creation of the artistic whole. Thus, we included 12 occupational codes in the data set. These were divided into four groups differentiated based on their unique dynamics, which we operatively labelled as “managers”, “screenwriters”, “actors”, and “team”. The first group, managers, included the director, producer and production director (who previously also functioned as a producer). The actors (including both principal and secondary

actors) had to be distinguished from the rest of the team, in part due to their large number in many films, which meant that they began to dominate the results when the aim was to study constitutive networks in the film industry. Finally, the “team” included the dialogue writers, cinematographers, artists, costume designers, composers, sound directors and editors.

Next, we carried out several pilot studies to explore and experiment with research designs. In the first phase, we looked at human networks and keyword networks separately. As far as human networks are concerned, this method helped to highlight several collaborative clusters and the changes over various decades. In the broadest sense, a gradual decentralisation of film production can be observed. Starting with the 1940s, when films were made by a fairly small and intertwined group of people, the closer we come to the present day, the greater the number of small sub-groups that develop in the peripheries of the so-called core network. Such peripheral groups included members who have worked together at least three times, although none of them had worked together on more than two films with the people from any other group. The dynamics that emerged with the introduction of the film degree programme at the former Tallinn Pedagogical University in 1992, and later with its continuation at the BFM of Tallinn University in 2005, are also striking. An analysis of the collaboration networks shows how students initially only collaborated with each other, separately from the core networks or in peripheral areas, and how the same filmmakers integrated into the core networks over time and later assumed the positions of key players in the network.

Examples of rather autonomous, larger collaborative groups are two networks of documentary filmmakers in the 1960s and 1970s. One is more clearly centred around sound director Heino Pedusaar and camera operator Anton Mutt, while the other is more dispersed. At first, they were completely separated; then in the 1980s some collaboration links (films) gradually

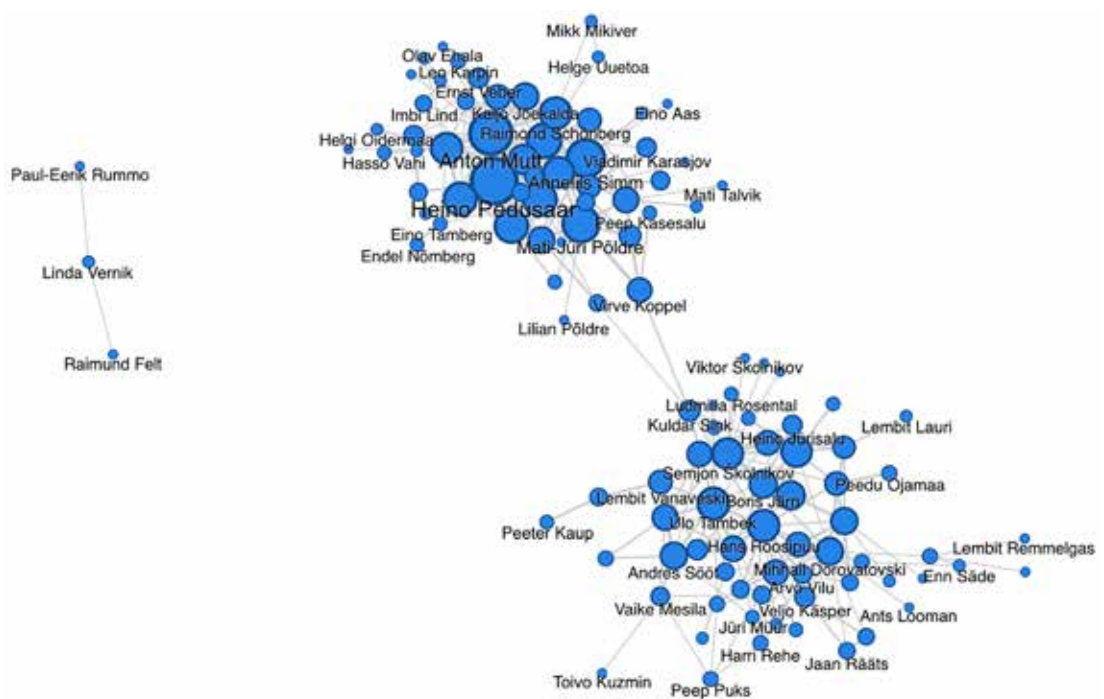


FIGURE 1. Networks of documentary filmmakers in the 1960s and 1970s

emerged between the members of the two groups, which means that the groups can be visualised as a bow tie (**Figure 1**).

In the EFD dataset, the actors and screenwriters behave as the two extremes. Through the decades, the actors are involved in tight collaborative networks with each other and others; i.e., separate subgroups can seldom be distinguished (**Figure 2**). (One such rare example is the actors Aleksandr Kaidanovski and Vladimir Ivashov, who appeared together in specific thrillers and science fiction films in the 1970s.) However, both feature film and documentary screenwriters worked in separate groups; i.e., certain filmmakers are repeatedly involved in producing the screenplays of specific authors and have not made as many films based on the screenplays of others. For example, distinct groups developed in the 1980s around screenwriters Arvo Valton and Valentin Kulk, and an additional four smaller groups developed alongside them (**Figure 3**).

As for the individual keyword networks, our first discovery was if, for example, one looks at the body of feature films by decade, there are no distinct thematic groups within the decades. However, the figure does indicate links between the keywords of individual films. There are obvious differences between the decades, but these are primarily related to the prevalence of various keywords. However, a study of the links is not needed to prove this difference; a word cloud, for instance, would suffice. Why is link research not effective for the EFD keywords? It could be due to the small size of the body of films (few similar ones), and, in general, due to the fairly thorough description (many keywords used) of all films in the database. The latter leads to insignificant details beginning to form links between the films, and although there can be many of them, they do not help to see the most important thematic or artistic choices and connections related to the films (see Ibrus and Ojamaa, 2018, for further discussion on analytic affordances that derive from the detailed indexing in EFD). It is likely that in the case of very large

bodies of work (e.g., film productions in larger countries), as well as slightly more standardised keywords, the patterns would be more visible as discrete groups. In practical terms, however, very few databases are as comprehensive as the EFD, and the few that do exist, (in the United Kingdom³, Finland⁴ and Denmark⁵), do not provide data for analysis.

As the last step of our study, in order to really study the demes – the constitution of human communities by the texts they create – we connected both networks; i.e., people and keywords of films. For this, we linked the creative leaders of the films (director, producer and screenwriter) with the keywords of the films they had created (there had to be at least two concurrences). One such entry looked like this:

Sulev Keedus	singing	2017	fiction	director
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This indicates that Sulev Keedus was the director of a feature film (*The Assassin / Innocent / Shadow*), which premiered in 2017 and also included singing. The nodes of the network in this example are “Sulev Keedus” (person) and “singing” (keyword). To this network that linked people and keywords we could then also link the networks of people (at least three concurrences between two people) as well as the networks of keywords (also, at least three concurrences between two keywords). Our final database of link pairs eventually compiled three different types of link pairs (person-keyword; person-person; keyword-keyword) and consisted of 236,209 entries (links). We used Gephi software⁶ to visualise and analyse the networks constructed in this way. We let Gephi identify some of the more dominant clusters in the networks, which we then analysed as potentially the more apparent demes of the analysed period. That is, in the case of networks that link

3 <https://filmography.bfi.org.uk>
4 <https://kavi.finna.fi/?lng=en-gb>
5 <https://www.dfi.dk/en/english/danish-film-history>
6 <https://gephi.org/>

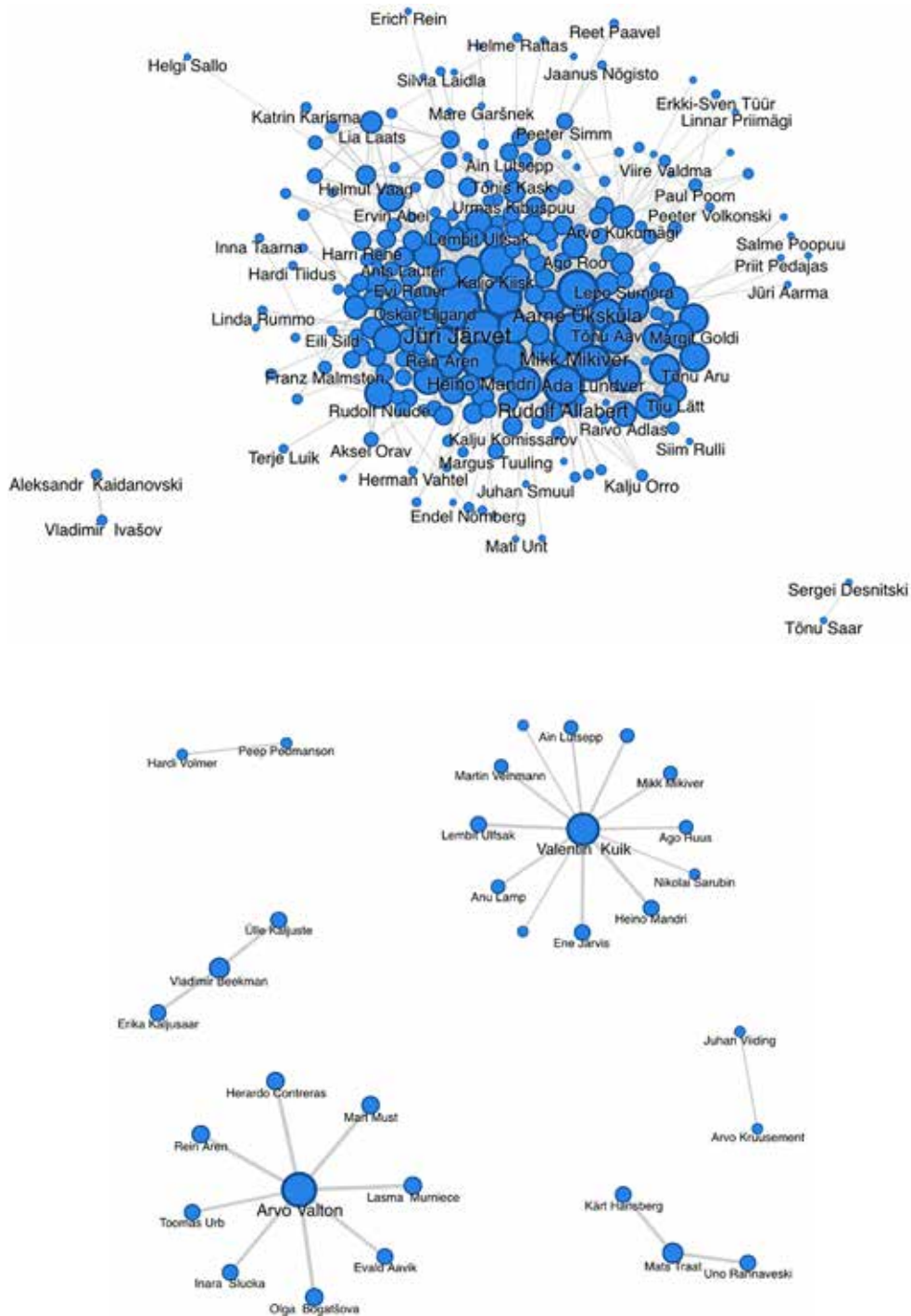


FIGURE 2. Feature films in 1970–1980: All relationships in which at least one of the parties is an actor.

FIGURE 3. Feature films 1980–1990: All relationships that include screenwriters.

people and texts, a cluster or links may represent a deme, but if it is actually a case, it should be identified by a researcher in qualitative terms assessing the nature and the strength of the links and the nodes that are connected.

In the following section, we are introducing the analytical possibilities of such networks based on the example of documentary films by comparing various decades starting with the 1950s (the 2010s end with 2018, as this was the last year we had the data for at the time of carrying out the analysis). Please note that on all of the following graphs the networks have been reduced to 400–450 nodes. In many instances, this means that the graphs represent less than 10% of the analysed data. The keywords on the graphs are in Estonian as this is the main language of the database and there was no effective way of translating all keywords.

RESULTS

The network of 1950s documentaries, which was created as described above (**Figure 4**), vividly reflects the social realist ethos dominant in the Soviet Union in that decade. This is the only decade in which there is a clear distinction between agricultural and industrial themes in the films (and when the city of Narva, an industrial town in North-Eastern Estonia, emerges as a recurring filming location). That the celebration of ethnic cultures was contested in Stalinist Soviet Union can be inferred also from the fact that heritage architecture and culture (above all folk music, but also choral singing and song festivals) constituted only marginal clusters. Popular music and classical music were consolidated as a larger group but also in the periphery. Ethnographic and nature films about Finno-Ugric culture emerged as a separate group – a deme that will be consolidated in the coming decades, but which will gradually fade away once independence is restored. The dominant demes form around leading filmmakers emerge: Boris Järn and Semjon Školnikov in the context of industrial and agricultural themes; and Nikolai

Dolinski, Vladimir Parvel and Reet Kasesalu in connection with culture-related topics.

Figure 5, which includes the documentaries of the 1960s, shows significant changes compared to the previous decade. Heritage architecture in Tallinn Old Town and elsewhere, as well as folk music, song and dance festivals, have moved from the thematic periphery to the core; i.e., they became recurring themes in the Estonian documentary films. However, classical and popular music remain on the periphery. The circle of filmmakers of the previous decade is still active, but many new names have joined them. Some of the dominant demes are the following: Anneliis Simm, Jüri-Mati Põldre, Astrid Lepa, Virve Aruoja, Johannes Tilk, and Virve Koppel constitute the deme of music and theatre films; Valeria Anderson associates with more general cultural films; Lennart Meri, Vitali Gorbunov and Jaak Jürida are the makers of ethnographic films; Boris Järn and Semjon Školnikov make, among other things, films about industrial production; and Ülo Tambek and Tatjana Elmanovitš have focused on films about choral music and the song festivals.

Figure 6, which includes the documentaries of the 1970s, shows how music and the other arts, as well as heritage architecture, have moved further toward the core, as have nature and ethnographic films. Rural life is no longer depicted only in relation to agriculture but through representations of the everyday realities of rural areas and of environmental issues. It can be suggested that an entirely new deme of filmmakers had emerged focusing on the everyday as well as romantic representations of rural life and its cultures (linking filmmakers such as Andres Sööt, Jaak Jürida, Vaike Mesila and others). Representations of industry have decreased and are on the way out from the core. Along with their themes, a new generation of filmmakers has moved from the periphery to the core: Anneliis Simm, Mati-Jüri Põldre, Peep Puks, Valeria Anderson, Mark Soosaar and many others. The filmmakers who focused on ethnography (Lennart Meri), nature (Rein Maran), popular music (Elmo Lööve) and classical

music (Hille Kuusk, Selma Elling) remain rather in the thematic periphery. The demes they constitute are small, but persistent.

Examining **Figure 7** with data from the 1980s, we notice its relative fragmentation compared to previous decades. The following clusters/demes stand out: films about political life related to the re-establishment of Estonian independence; films about music, choral singing and song festivals; films with historical themes; films about society and nature; films about the Olympics and sailing (Olympic regatta of the Moscow Olympics took place in Tallinn). Compared to previous decades, documentaries on classical music form a larger group. This is striking in light of developments in subsequent decades. The fragmentation and clear distinctions between the clusters seem to be supported by specific filmmakers focusing only on specific topics and, hence, constituting specialised demes. For example, the films of Ene Hion, Toomas Lepp and Andres Sauter focus on political life and the restoration of independence; Aino Paemurd, Mall Vällik, Maie Kerma, Helme Rattas and others made films about classical music and other arts; Jüri Müür and Märt Müür focus on rural life and agriculture; and Lennart Meri continued making ethnographic films about Finno-Ugric culture.

An examination of the documentary network of the 1990s (**Figure 8**) shows that its core is dominated by historical representations. After the restoration of Estonia's independence in 1991, it became possible to make films about the complexities of Estonian history, especially in the 20th century and during the Soviet occupation. This cluster of historical themes is also quite closely related to the reporting of political life and the process of restoring Estonia's independence (which, however, comprise a large separate group). Compared to previous decades, more urban activities and life start to appear in documentary films. At the same time, films about rural life and nature form another distinctive separate cluster. The cluster of Finno-Ugric ethnographic films is smaller than in previous

decades; i.e., it includes fewer film makers, and it is moving towards the periphery. The peripheral emergence of the group of films focused on art and artists is noteworthy. In this decade, Riho Västriku's films related to mountaineering comprise another unique peripheral group. A striking change is the almost complete disappearance of depictions of musical life from Estonian documentary films.

As far as human networks are concerned, it should be remembered that at the beginning of this decade the Tallinn-film studio collapsed, the funding of films decreased sharply in the newly independent Estonia, and the entire film production system gradually became producer centred. This had an intermittent impact on human resources, which in turn led to changes in the choices of topics. It can be assumed that the decline of music representations in films is related to the departure of music specialists from filmmaking. However, political films and those about political history became a prevailing theme, but they lack a clearly defined network of filmmakers – many different people were involved. Rein Raamat and Helvi Raamat are behind most of the art films as director and producer, respectively. Reet Sokmann, Maie Kerma and Mati Sepping as producers constituted a deme making films about culture and everyday life. Famous filmmakers Andres Sööt and Peep Puks continued as directors.

Based on the EFD data, the separation of demes develops even more clearly in the documentaries of the 2000s (**Figure 9**). The anomaly of the previous decade – the lack of depictions of a broader musical life in documentaries – has disappeared, and this topic is back at the core of documentary filmmaking. A distinct and large group of films dealing with politics and political history still exists. However, compared to the previous decade, they are now located further from the core. Films about everyday life and living conditions form a separate, more abstract, deme, often with an emphasis on the countryside. This group is closely linked also to environmental films. In the figure, we also notice that the group of

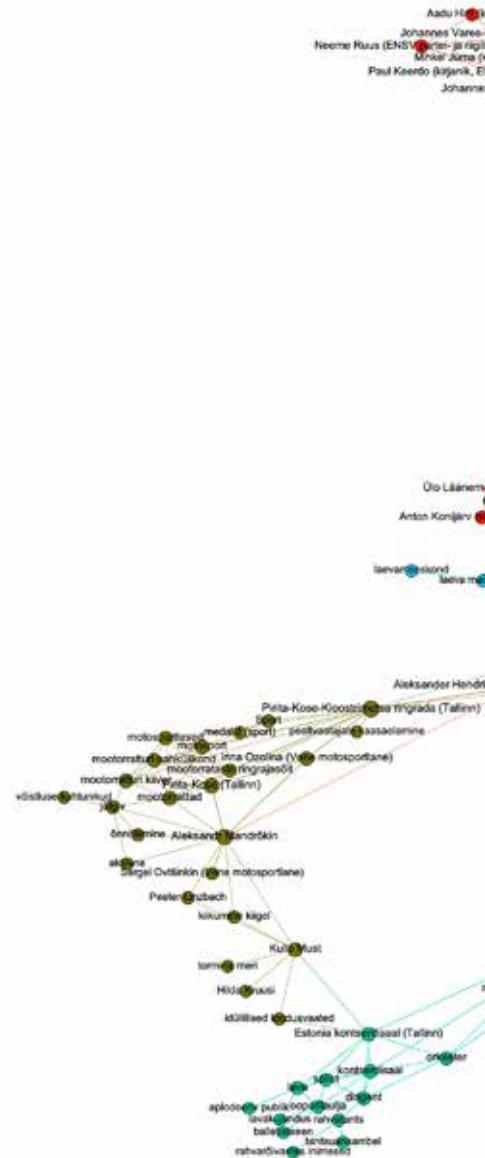
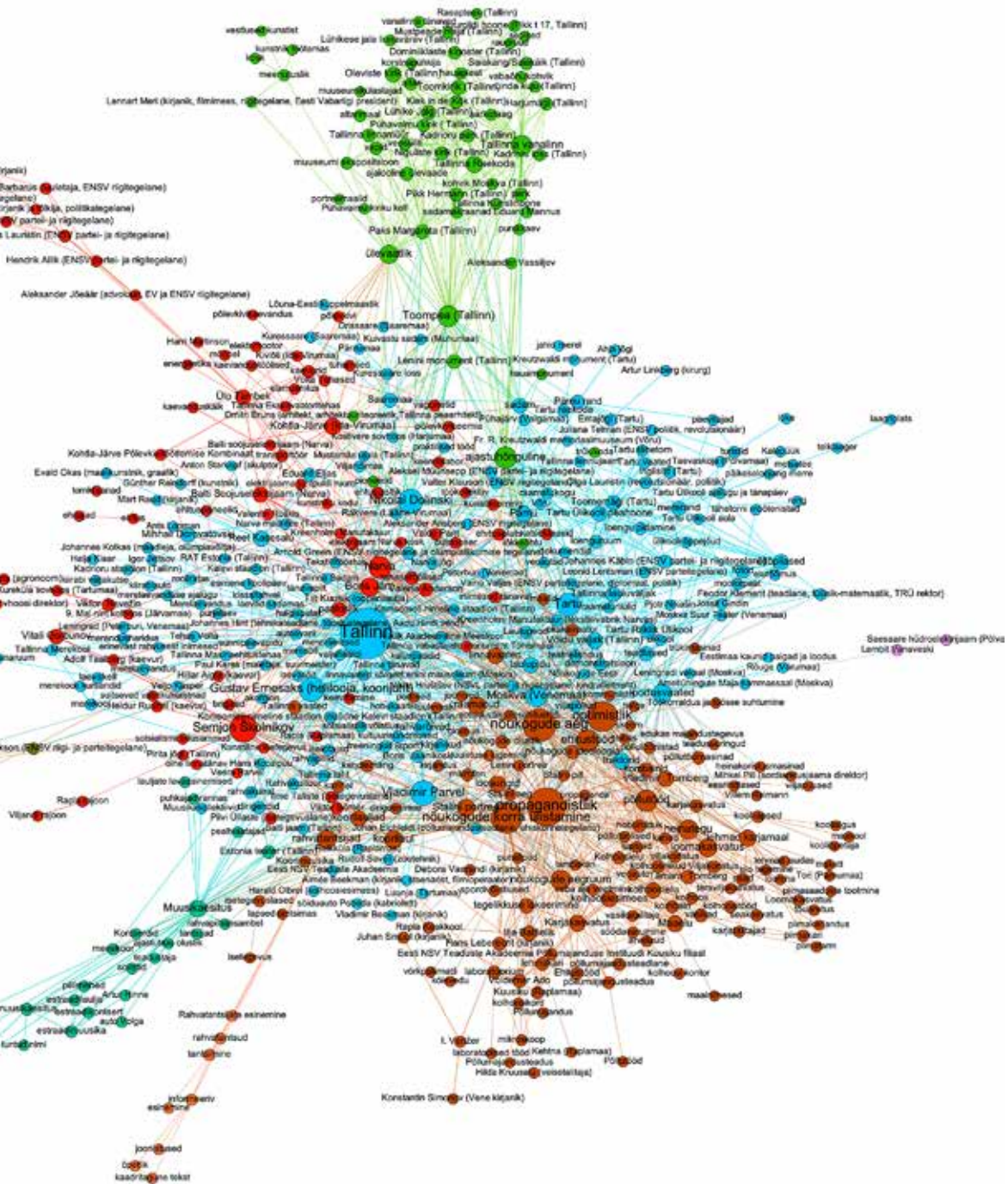


FIGURE 4.
Groups of Estonian documentary filmmakers and keywords from the 1950s.



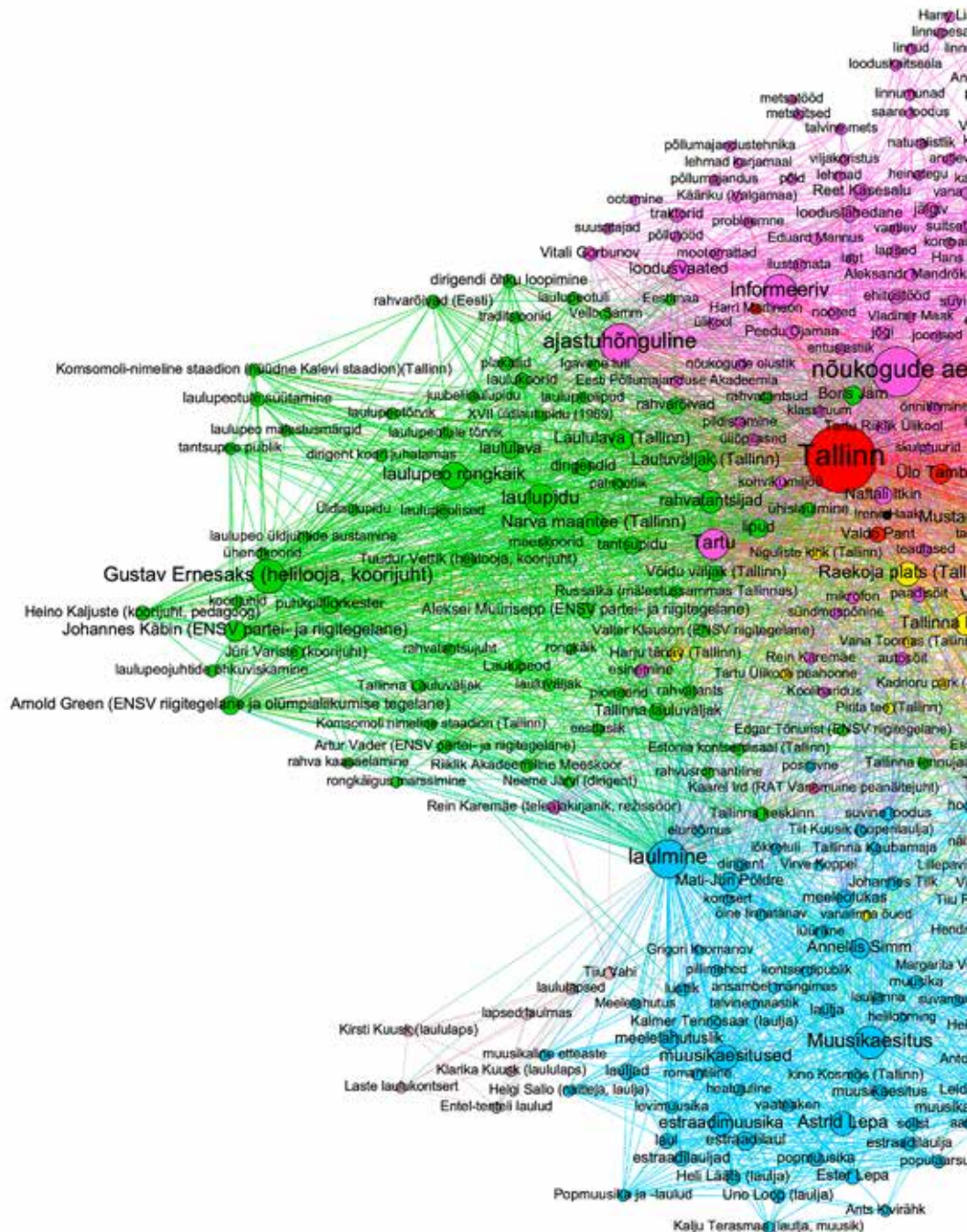
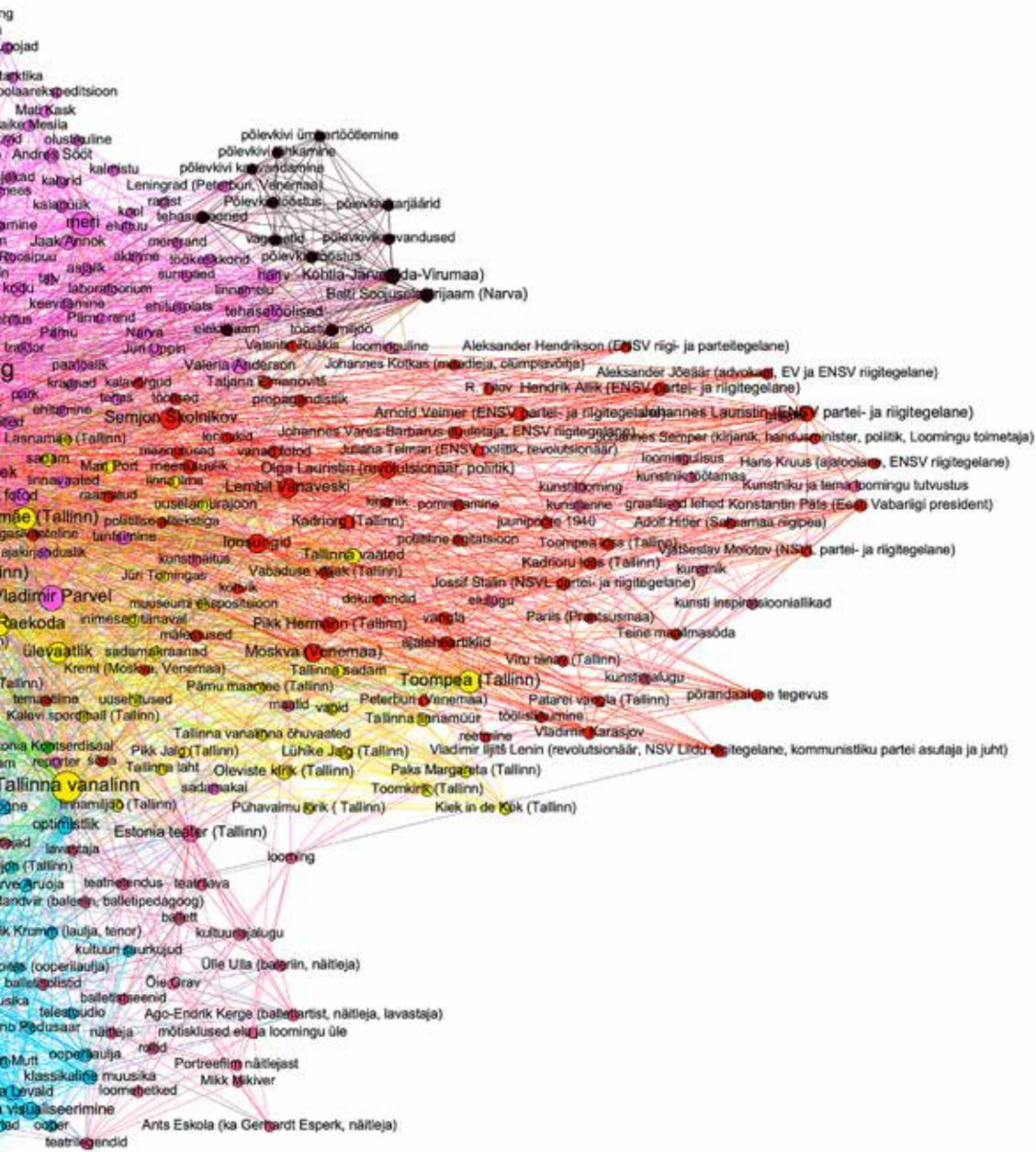


FIGURE 5.
Groups of Estonian documentary filmmakers and keywords from the 1960s.



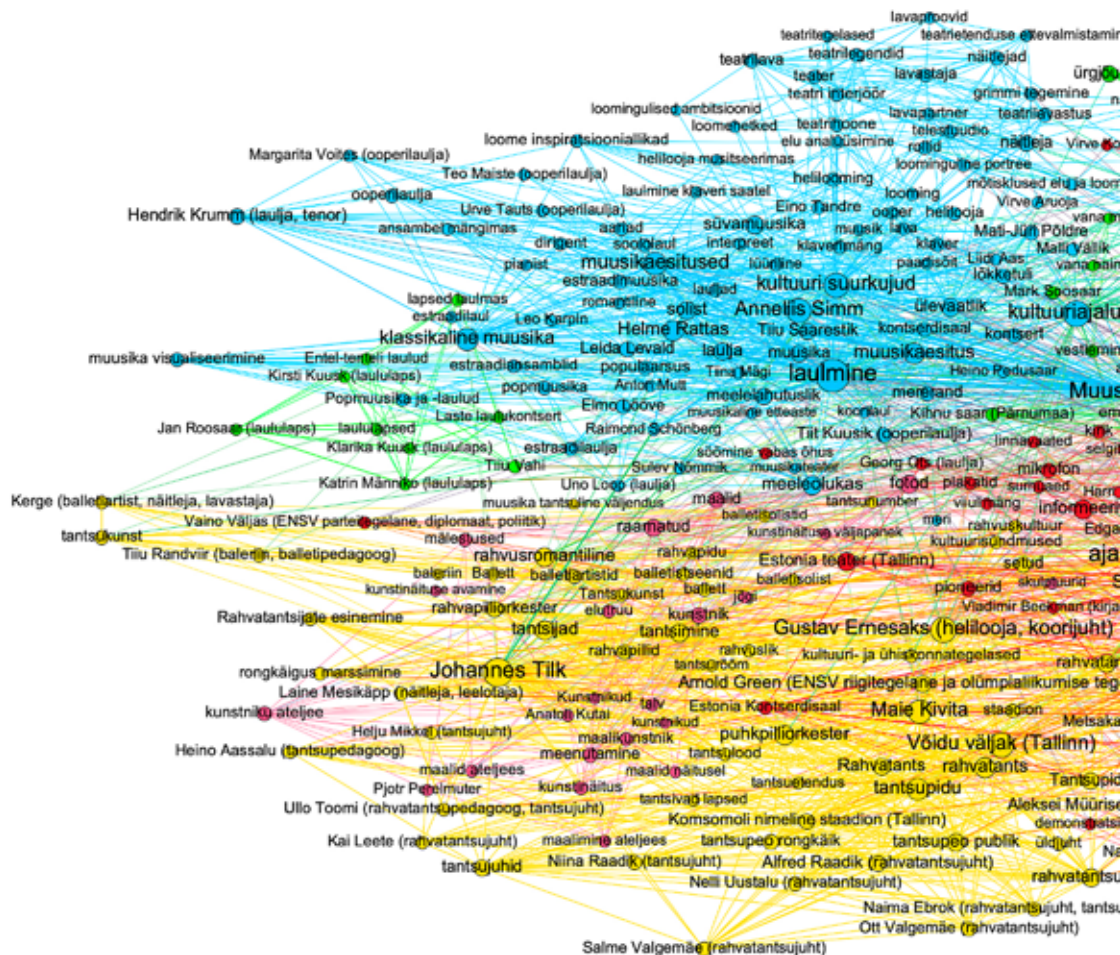
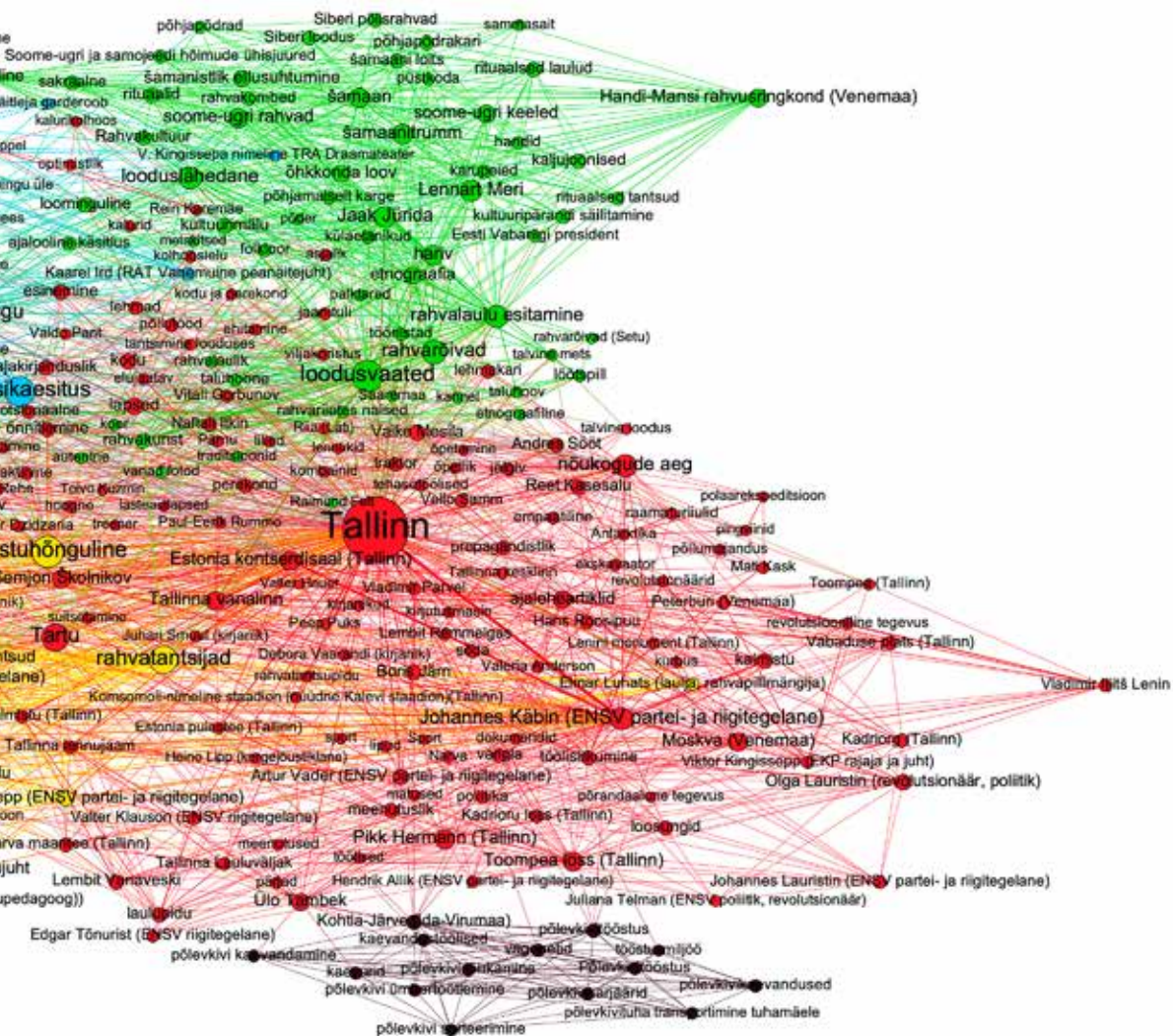


FIGURE 6.
Demes of Estonian documentary filmmakers and keywords from the 1970s.



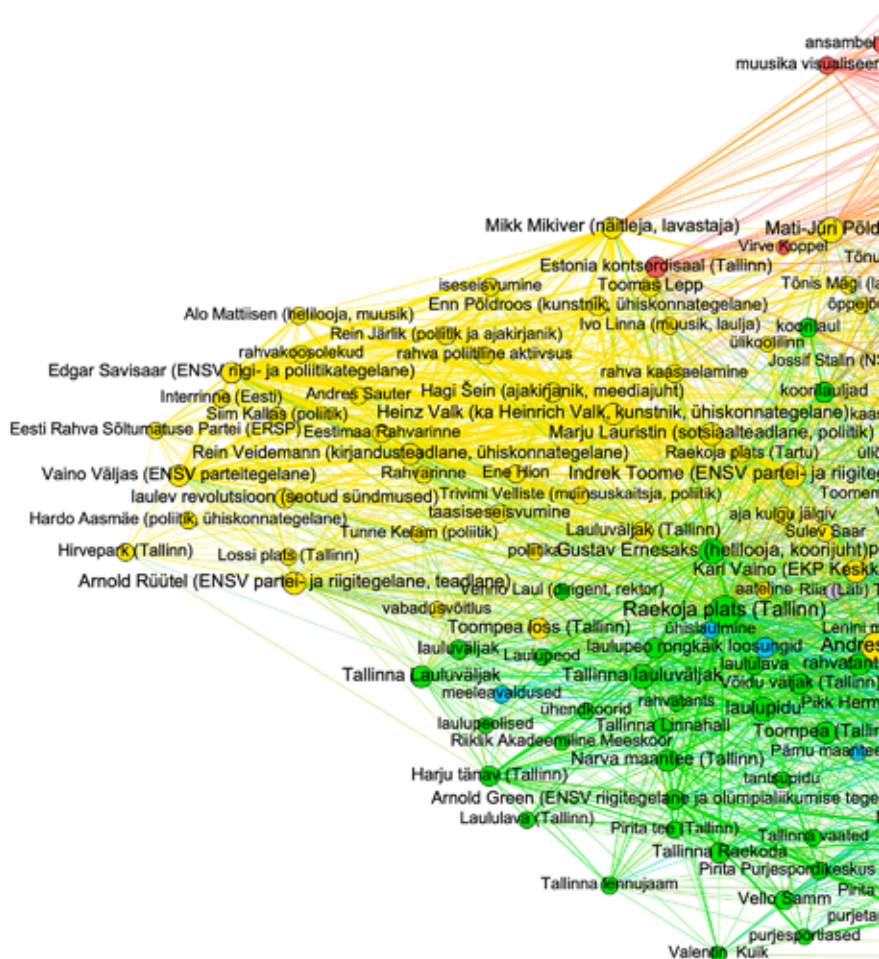
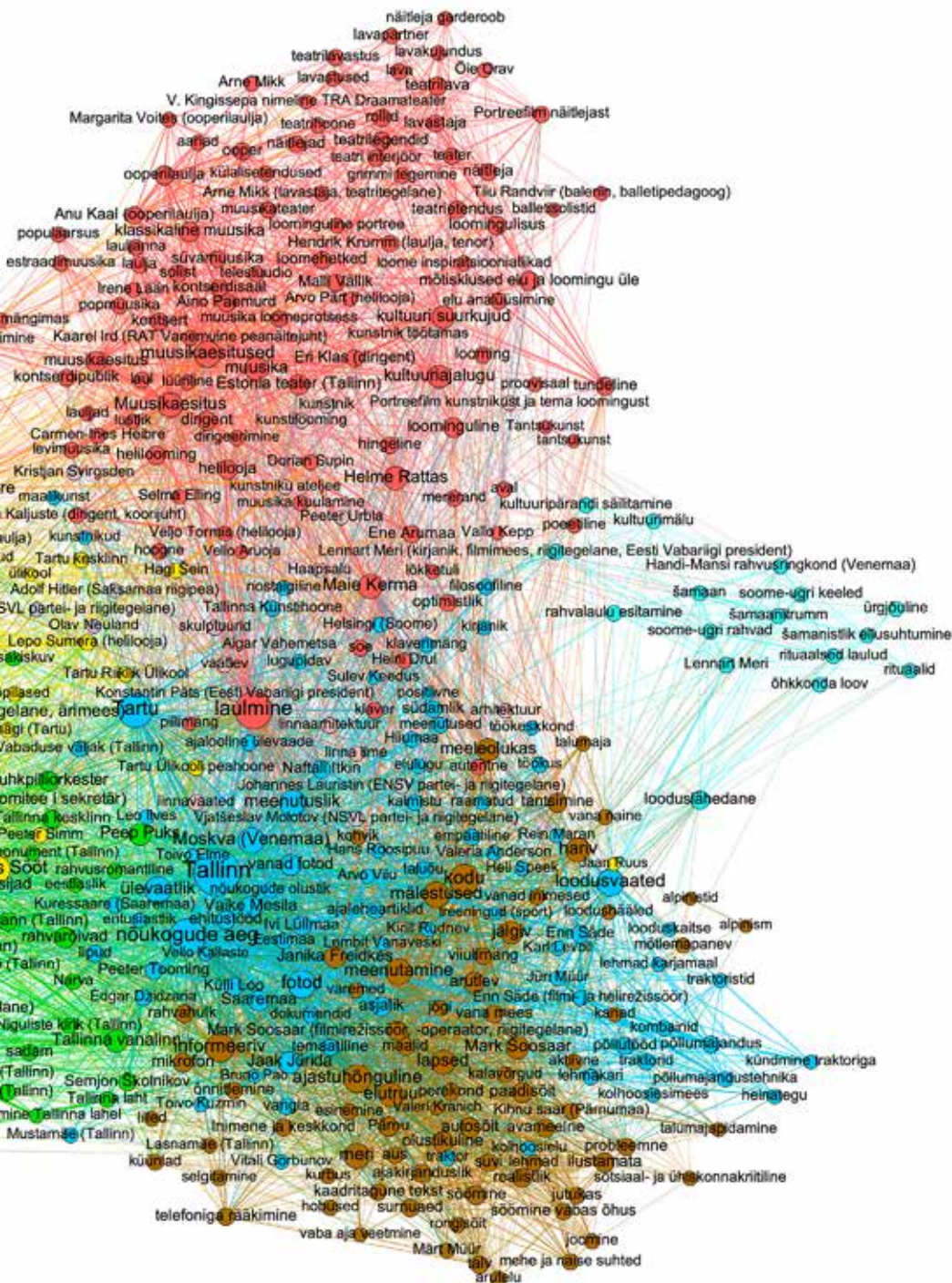


FIGURE 7.
Groups of Estonian documentary filmmakers and keywords from the 1980s.



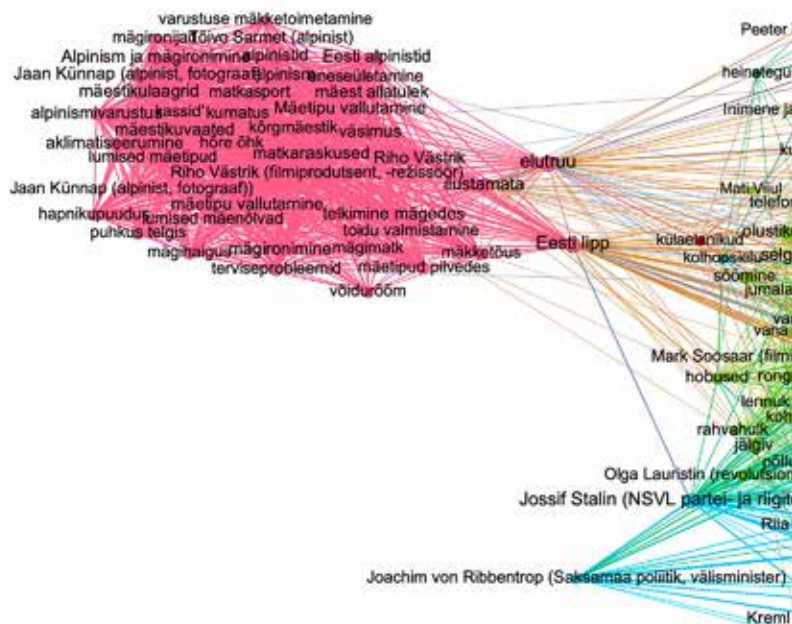
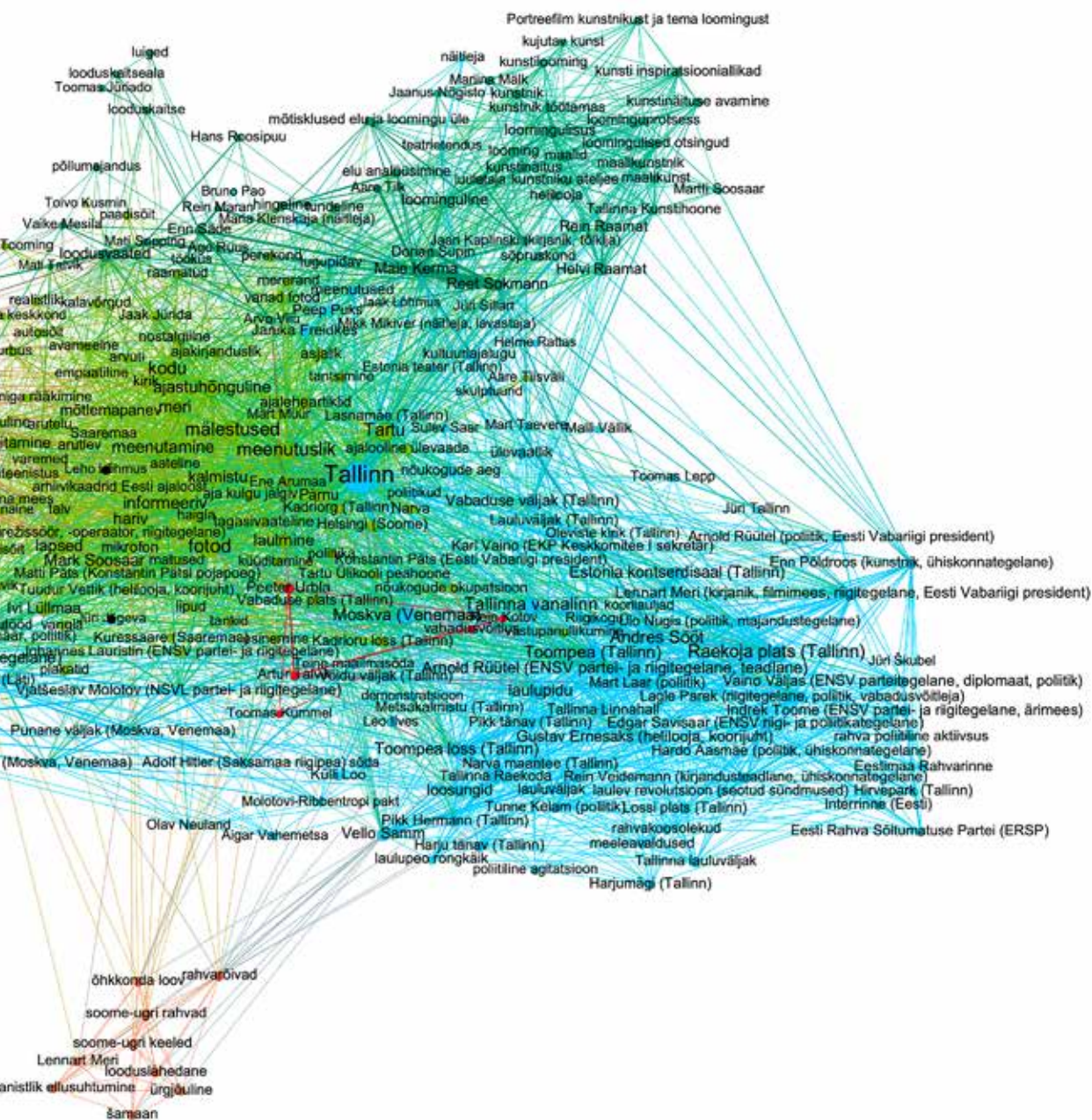


FIGURE 8.
Groups of Estonian documentary filmmakers and keywords from the 1990s.



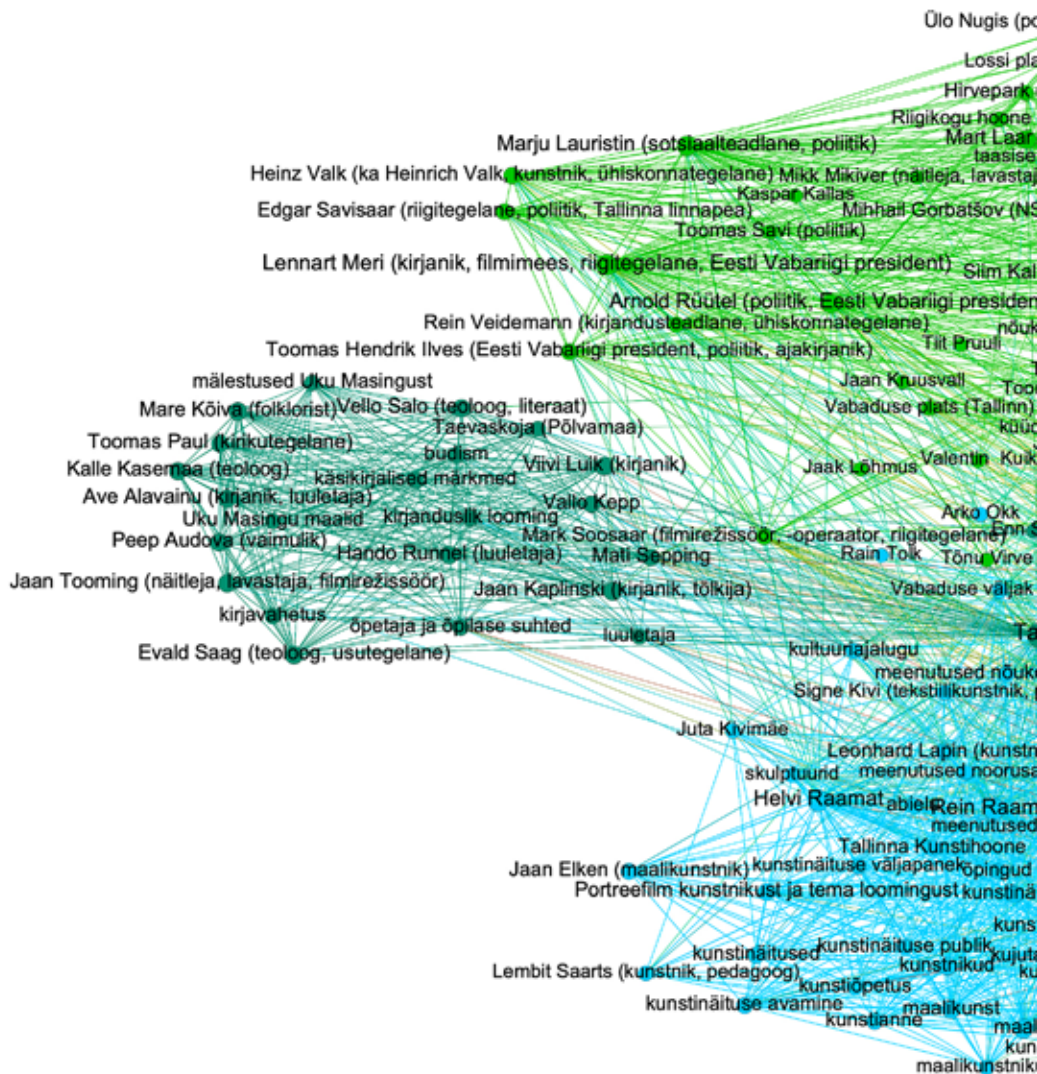
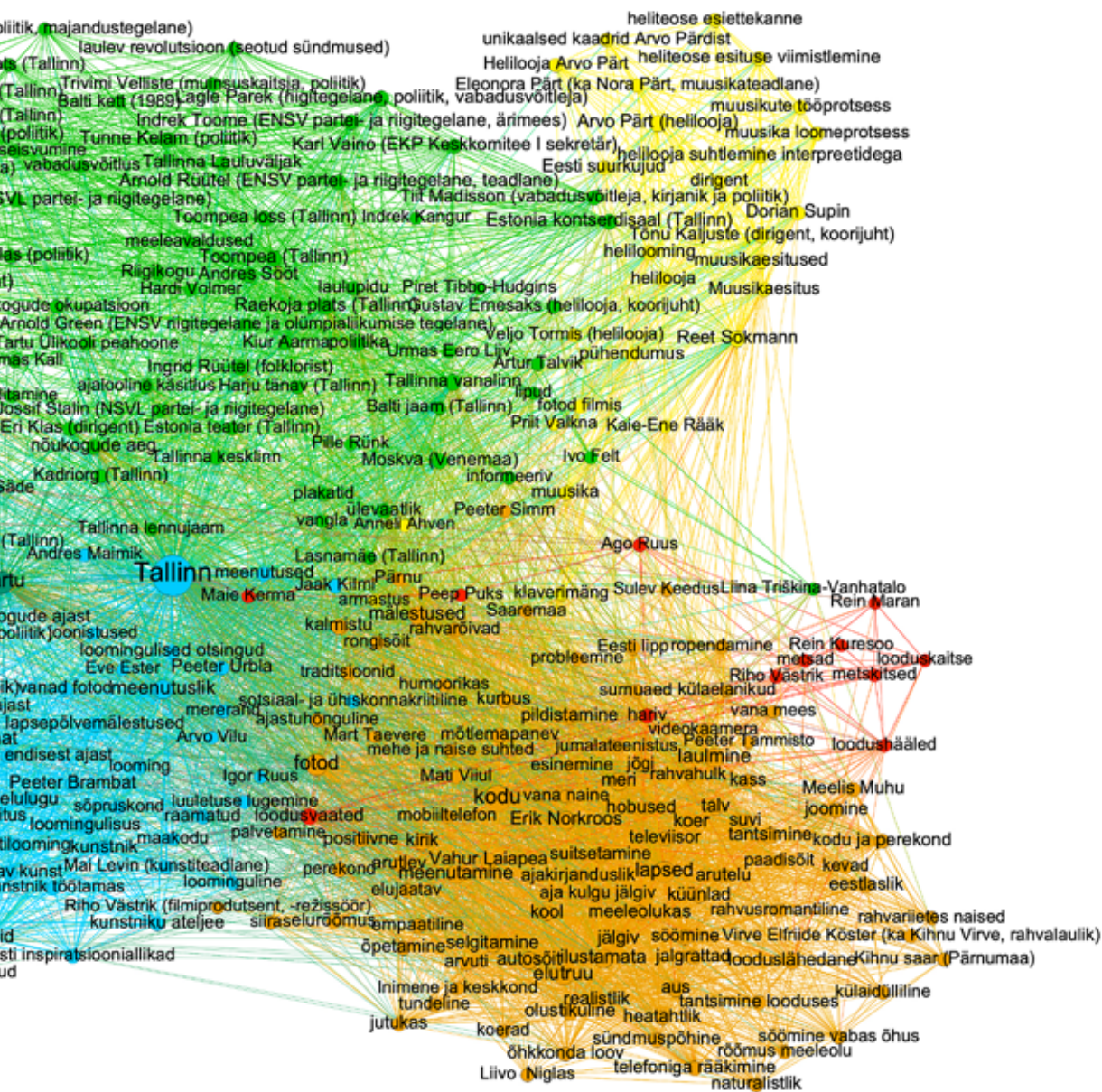


FIGURE 9.
Groups of Estonian documentary filmmakers and keywords from the 2000s.



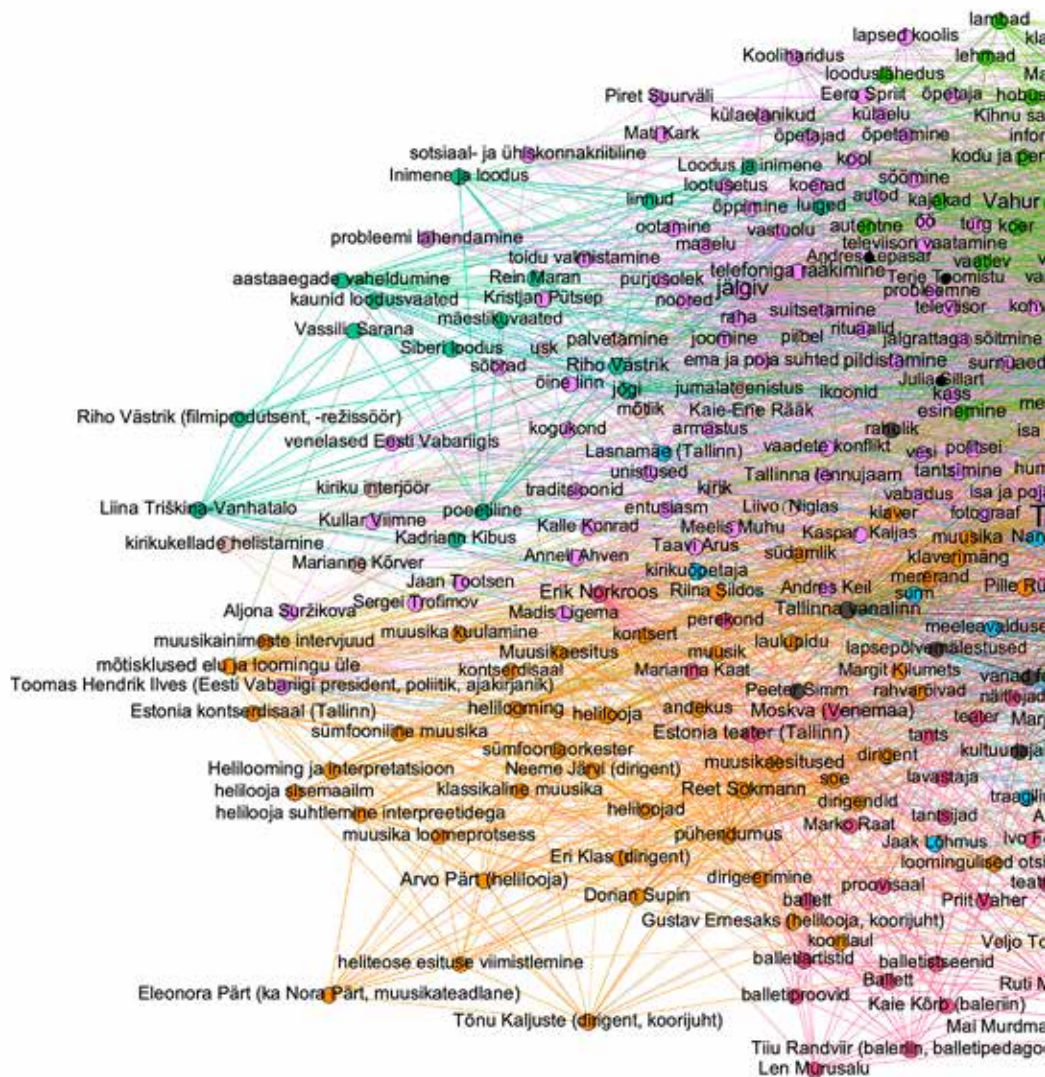
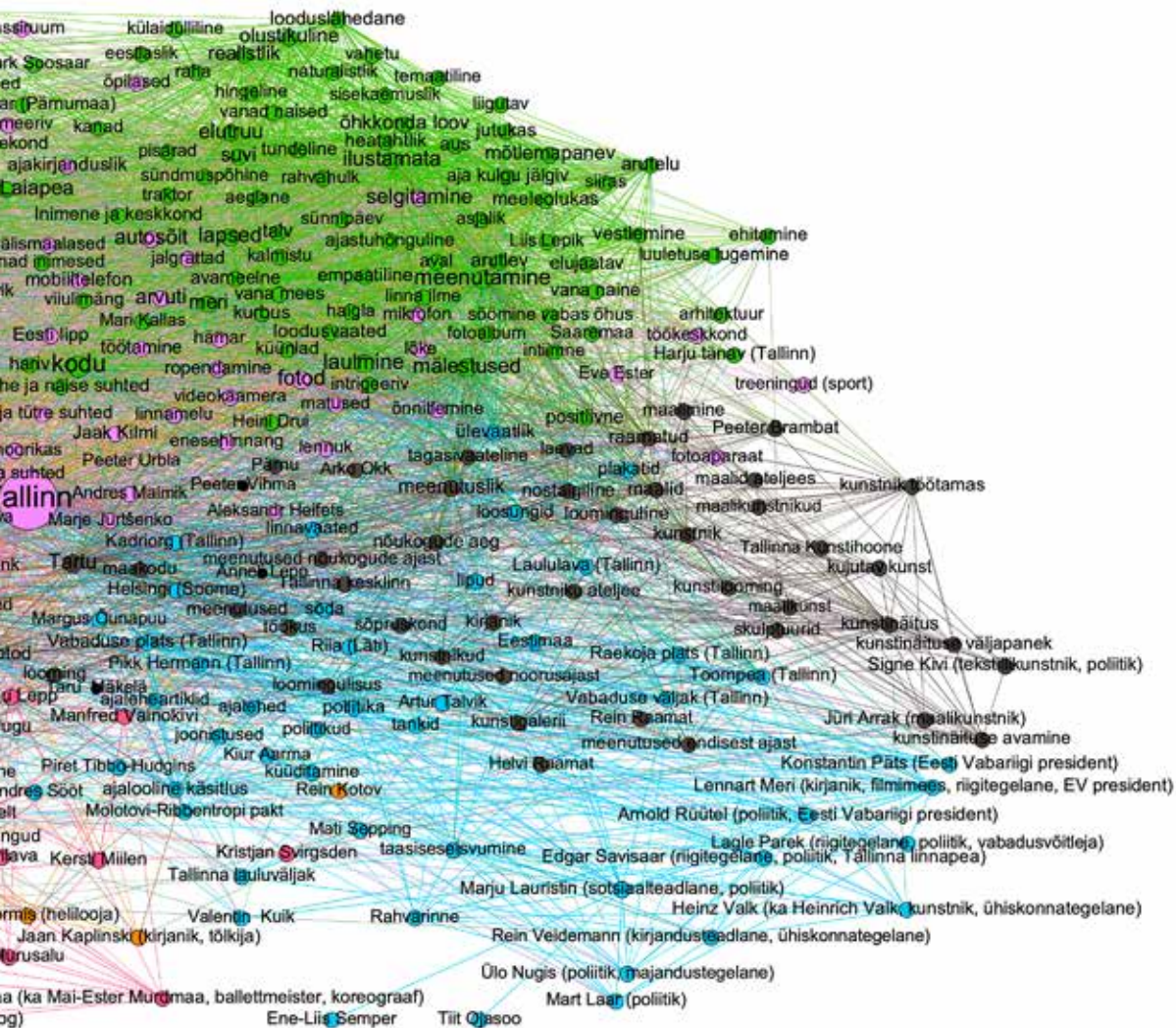


FIGURE 10.

Groups of Estonian documentary filmmakers and keywords from the 2010s.



keywords referring to everyday life and living conditions is the densest compared to the others. However, being a large group does not necessarily mean that it is internally integrated, but simply that more films on these topics were made. This is also indicated by the fact that no dominant cinematographers stand out in this group. During this decade, many filmmakers became involved, and the everyday life became a mainstream topic. This presents a question if in terms of maker-networks can we speak at this point of the thematically integrated maker-demes, but instead only of a broad deme of Estonian documentary filmmakers?

A remarkable historical development is that ethnographic films on Finno-Ugric culture have almost completely disappeared by the 2000s. Mountaineering films, as well as films about classical music, religion and church, form separate peripheral groups. However, these examples illustrate that, when doing this type of link analysis, the background provided by the original sources should always be checked: there is no wider network/deme of people behind these films, but there are individual filmmakers who have made several films on one subject: Riho Västriku about alpinism; Vallo Kepp about Uku Masing, and thereby about Estonian religious history; and Dorian Supin about the composer Arvo Pärt. If the group of art films that developed in the previous decade was based primarily on the output of Rein Raamat, then in the 2000s, other filmmakers are already contributing to this field, and therefore, the deme has become more intertwined with other fields.

In the 2010s (**Figure 10**), films about everyday life and living conditions continue to comprise the largest cluster but are no longer as directly associated with rural life and nature. Urban themes have been added. As a noteworthy development, the cluster of films about political life and political history has almost completely disappeared. Historical subject matter also no longer dominates. It could be suggested that by this decade the impulse to tell stories of Estonia's complicated history had

exhausted itself. Instead, musical composition and music comprise a large group (but what is notable is how it is now scattered and related to many other topics). Films about art and artists continue as a strong peripheral group. The trend of the previous decade strengthens: the fact that films about everyday life and living conditions comprise the largest part of documentary film production is understood to be related to the fact that filmmakers are not anymore exclusively focused on specific topics. This, in turn, presumably indicates a greater level of professionalism or industrialisation in filmmaking, as independent producers and directors seek to make many different types of films and work with a variety of themes and topics. Yet, again, this raises the question of whether this era embodies the trend of more thematically focused demes dissolving to constitute a more overarching deme of Estonian film.

CONCLUSION

What can we conclude about the proposed method from our explorative study? Linking the human networks and film keyword networks, and then comparing the combined networks by decade (or by some other time period), does indeed provide an opportunity to detect trends that have so far only been assumed, or not yet noticed, or to find unexpected anomalies such as the disappearance of music representations from documentaries in the 1990s. Such an analysis of large networks enables us to observe patterns that could not be revealed by close readings of films and, hence, could usefully complement the existing studies of film culture, including the studies of the decades that we analysed in this paper (for instance, Näripea, 2012; Västriku, 2015, 2017).

Secondly, and more specifically, the paper set out to operationalise the “deme” concept of Hartley and Potts (2014) and proposed a way to study the evolution of demes, the distinct text producing communities, by the means of link and network analyses. We explored the evolution of filmmaker demes that collaborated closely and

produced thematically interrelated documentary films. Thus, it has been proven to be a useful method for studying Estonia's cultural and film history.

The weakness of the method can be seen in its strong dependence on the quality and nature of metadata. As noted above, each set of keywords is a meaning system born in a specific era and based on specific cultural and ideological points of departure, which mediate realities in a specific way. Therefore, when using keyword-based link analysis, one should keep in mind that these links not only model objects – i.e., films and filmmaker demographics – but also reflect the database creators' understanding of these objects and their relationships. Secondly, descriptive dictionaries can either be more general or more detailed. If they are general, keyword networks may not capture important meaningful or ideological nuances in the body of films. However, if they are more detailed and therefore more numerous, it could make it difficult to arrive at generalisations and identify significant clusters in the study. In addition, the descriptions in all the databases are inconsistent – descriptions of some films provide more details and more information, while others are relatively minimalist. Currently, in the majority of the world's databases, heritage films have yet to be properly described. This inconsistency also raises questions about the representativeness of the analysed corpus and thus of the analysis. These shortcomings mean that the analysis must include accurate information about the nature of the corpus, as well as a critical reflection on the ideological or cultural context of the metadata schema's keyword vocabularies.

In the case of EFD, we also tried to study the networks of fiction films but discovered that the keyword networks could not be divided successfully into clusters. This could be due to both the relatively small size of the body of work (for example, the more random links between various films tended to dominate instead of the close links between several films about similar topics), as well as the relatively detailed nature of the keywords assigned to the films. This created the possibility of insignificant links being created in effect between films or thematic groups. Since every link was weighted equally, there is a possibility that some of them created connections between films that were not very telling, thereby complicating the analysis. Another possibility is that in the case of EFD, for example, the vocabulary is so general that certain distinctions between filmmakers and their choices are insufficiently highlighted. For example, in our opinion, the study of the feature film networks did not provide sufficient clarity about the networks of creators who have shaped filmmaking in the last couple of decades and the artistic choices that have been made within these networks. However, this indicates there is still room for further research and a need for a more general development of the method, as well as for the fine-tuning of the corpora being researched.

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