Organising terminology work in Sweden from the 1940s onwards

Participatory expert roles in networks

Nina Pilke,[1] Niina Nissilä[1] & Hans Landqvist[2]
[1] University of Vaasa | [2] University of Gothenburg

The present study deals with organised terminology work in Sweden from the 1940s to the late 2010s. Using archive material, we describe how practical terminology work was carried out in Sweden during the period 1941–2018/2019, when the Swedish Centre for Technical Terminology/the Swedish Centre for Terminology (TNC) was the central actor. Thereafter, we discuss models for building a new infrastructure for terminology work after the closure of the TNC in 2018/2019. This discussion is based on interviews and analyses of articles and current reports. The study shows that multifaceted contacts with experts, academia, industry and society have played an essential role for terminology work in Sweden since the 1930s. In the current situation (2019), the activities are being reorganised and responsibility for terminology work is distributed between several actors. A new main actor is the government agency known as the Institute of Language and Folklore (Isof). Finally, we discuss future visions for terminology work in Sweden.

Keywords: terminology work, Swedish Centre for (Technical) Terminology, Institute of Language and Folklore, language for specific purposes, expertise, networks, participatory roles

1. Introduction

A general research setting for the present study is the field of *language policy*, which is "made up of three inter-related but independent components" (Spolsky 2012, 5): *language practices, language values* and *language interventions* (Josephson 2018, 107, 236). The first component is "the actual language practices of the members of a speech community (…)". The second one is "made up of the values assigned by members of a speech community to each variety and variant and their beliefs about the importance of these values". The third and last component

consists of "efforts by some members of a speech community who have or believe they have authority over other members to modify their language practice (…)" (Spolsky 2012, 5). In our opinion, all three components are important in terminology work in society, however, the third component is the crucial component for terminology work on a national or supranational level (cf. Bucher 2016, 75–77). The third component can be linked to a subfield of *language policy*, i.e., *language planning/language cultivation/language management*, since one of the focal activities in this subfield is "modernization and development of needed terminology" in societies (Spolsky 2012, 6).

Terminology committees, as parts of different language promotion agencies, play an important role, although "most of their work is done quietly in the background" but such committees "provide a valuable service in their hope to modify the language of the general public" (Spolsky 2009, 242). Our aim with this article is to identify, describe and discuss the actors and factors that initiated and promoted organised collective terminology work in Sweden from the early 1940s up to the late 2010s. Firstly, we will describe the initial organisational and operational model for the work that was established during the 1940s and was in use up until the 1980s. Experts from various professional fields collaborated with linguists during the process, which was led by a national institution for terminology work, the Swedish Centre for (Technical) Terminology – the TNC. Secondly, we will document, analyse and discuss various standpoints on the model for terminology work in Sweden that began around the end of 2018 and the beginning of 2019. At this time, the TNC ceased to exist and the responsibility for the various functions of the TNC were distributed to several parties. One of these parties was the government agency called the Institute of Language and Folklore – the Isof. To fulfill the purpose of this study, we have formulated the following two research questions:

1. How was the practical terminology work carried out in Sweden from the 1940s onwards while under the guidance of a national institution, namely the TNC?
2. How should the practical terminology work in Sweden be organised from 2019 onwards, now that several parties have taken over responsibility for the work previously carried out by the TNC?

This article is part of the research project *Terms in time – The terms of the time. Terminology as linguistic infrastructure past, present and future* (Bendegard et al. 2019, 26). The article is structured as follows: in Section 2, the research settings and design of our study are presented. To answer the first research question, we first identify conditions for national institutions for terminology work in Sweden, with a starting point in the context of society, state authorities and support functions, since organisations such as the TNC and the Isof are initiated and operate

within societies (Section 3). Subsequently, we analyse archive material from the TNC from the perspective of participating parties and networks (Subsection 4.1). To address the second research question, we account for various viewpoints on the reorganisation of the terminology work as well as visions for the future. We do this by analysing interviews with two experts in the field (Subsection 4.2). The analysis of the interviews focuses on the future challenges and possibilities that the experts identify and their perception of how these should be handled to attain the best possible results. In the concluding Section 5, we summarise and discuss the findings that have been presented, based on the theoretical framework with two central cornerstones that were chosen: *expertise* and *networks*. We also suggest potential follow-up research projects under the theme "The societal role of terminology work".

2.   Research setting and research design

Nordic terminology researchers have been working from more than one perspective in the overall field: formal linguistics, applied linguistics, language and terminology planning, LSP communication, I&D, knowledge technology. This is typical for Nordic languages, which are small in terms of the number of native speakers; for example, Swedish is ranked as number 85 among the world's 6,000 or so languages (see e.g. Borin et al. 2012, 51). However, as Borin et al. (2012, 51) point out, Swedish is a small language with a considerable web and media presence; Swedish is among the 15 most represented languages on the web, and it can be found among the top 20 when media presence (films, economic power) is measured. Nordic researchers have contributed to the development of terminology research as well as to practical terminology work on several levels, both nationally and internationally (Pilke and Toft 2006).

Our research material consists of archive material and interviews (see Table 1). The complete TNC archive comprises approximately 180 running metres of documents (The Swedish National Archives 2019). The archive material used for this study consists of written documents relating to the work process developed by John Wennerberg who led the TNC between 1941 and 1957. The process was carried out in the form of 373 formal survey letters, with both the TNC and external parties participating during 1941–1983. Viewpoints regarding various terminological questions were collected and suggestions for recommendations from the TNC were formulated. (Wennerberg 1941a; Hambraeus 1957)

For our research project, we have scanned the 373 survey letters as non-annotated pdf-files. The formal survey letters constitute a part of the TNC's archive which has not yet been digitalised and has been kept in the Swedish National

Archives in Stockholm since the end of 2018 and the beginning of 2019 (The Swedish National Archives 2019).

Table 1. Material of the study

Type		Total
Primary material		
Archived material 2016–2018	Formal survey letters sent from the TNC 1941–1983	373
Interviews		
21.3.2019	1. Head of department of the Isof (IA)	60 minutes
22.3.2019	2. Managing director of the TNC 2000–2014 (IB)	50 minutes and 56 seconds
Secondary material (concerning the TNC and the Isof, giving background information)		
Articles	Published in *Teknisk Tidskrift* 1932–1957	
Annual reports	1941–1957	
Reports	Isof (2017) Statskontoret (2018)	

The interview material consists of two interviews with experts (IA and IB in Table 1 and in Subsection 4.2) who played a central role through their careers and possibilities to influence the development and direction of official terminological work in Sweden in the past, present and/or future perspective. The first expert is manager of the department at the Isof that has been allocated most of the responsibility for the TNC's work, starting from 2019, while the second expert has many years of experience working at the TNC. The semi-structured interviews took place during March 2019. The questions concerned past and future collaboration between national organisations as well as other actors working with terminological issues, terminological contributions (funding, terminologists, legislation, education, publications, information) that were needed in the new organisational situation and the best models and future perspectives in Sweden from 2018/2019 onwards. The informants received a list of central questions via e-mail one week prior to the interview date. For the purposes of this study, relevant excerpts of about one hour per interview have been transcribed.

The archive material is analysed both from a quantitative and a qualitative perspective, while the interview material is analysed from a qualitative perspec-

tive.[1] The archive material is analysed through close reading of the contents in the survey letters (primary material), articles in *Teknisk tidskrift* and Annual reports (secondary material). As a point of departure, the interview material and two current reports (Isof 2017 and Statskontoret 2018) were analysed using content analysis. In Subsection 4.1, we discuss the recruitment of experts and expertise for a terminological network and visualize the work process developed by John Wennerberg, the first executive director of the TNC. Furthermore, we present the results of the quantitative analyses concerning (1) distribution of the survey letters per year, (2) categorisation of the letters into different special fields, and (3) number of individual or collective experts involved and letters received in the process during the period 1941–1983. We base our analysis of the interview answers on two models for terminology work that the two informants created before the reorganisation of 2018/2019 (see Subsection 4.2). The main categories in the content analysis of the interviews are *time* (what happened within which time frames?) and *collaboration* (who is participating?). The ethical guidelines presented by the Swedish Research Council (2017) are observed in this study.

3.   Societal context: Sweden, the TNC and terminological work

In this section, we describe the societal context of the period during which the TNC existed and the terminology work carried out in Sweden during the 1900s and the early 2000s. The brief description gives the necessary background for the research results since the conditions, development lines and involved parties are of importance to the organisation of terminology work in Sweden during the period in question.

3.1   Economic conditions, technical development and political conditions

Like many other countries in the Western world, from the middle of the 1800s and onwards, Sweden experienced significant social change, with urbanisation and

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1. All quotations from the material used, as well as quotations from sources in languages other than English, have been translated. Certain Swedish organisations and companies have official names in English, such as the Royal Academy of Engineering Sciences (Sw. Kungl. Ingenjörsvetenskapsakademien – IVA). At first mention, the Swedish name of an organisation will be given, as well as the acronym in use, if applicable. Subsequently, the English name or the Swedish acronym will be used. In cases where there is no official English translation, we have provided one, as in the case of "the Swedish Society of Engineers" (Sw. Svenska Teknologföreningen – STF). In these cases, the English translation or the Swedish acronym is used.

industrialisation becoming increasingly important components in the development of modern Sweden society (Johnson 2007). Companies that were founded and began to grow from the second half of the 1800s to the early 1900s formed a significant part of this process. A number of these companies have developed into major corporations, for example, today's Ericsson and Asea Brown Boveri Cie – ABB; many of them established a customer base on export markets (Johnson 2007, 34–36). Up until World War II, Sweden was politically, economically and culturally oriented towards Europe, particularly Germany, but also France and Britain (Ohlsson 2019, 178–179). After 1945, Anglo-American influence, especially from the USA, began to play a more substantial role (Johansson 2004). Since 1995, Sweden has been a member of the European Union (Ohlsson 2019, 533–536).

3.2   Technical education, research and professionalisation

As in many other societies in the Western world, engineering became an important profession in Sweden during the late 1800s and early 1900s (Fjæstad 2016, 67–68). In order to strengthen the engineers' collective professional identity, it was necessary to professionalise their training and to facilitate personal communication, both with their peers and as a group in relation to other professionals (Björck 2004, 20, 59–68).

A national technological education began to be offered in Stockholm through the Technological Institute from 1827 onwards (Björck 2004, 35–37) In 1873, the Technological Institute was renamed the Royal Institute of Technology (Kungliga Tekniska högskolan – KTH) (Björck 2004, 39). At the end of the 1800s, the industry's need for research was discussed, and various initiatives were taken. In Sweden, the Royal Academy of Engineering Sciences (Sw. Kungl. Ingenjörsvetenskapsakademien – IVA) was established in 1919. (Björck 2004, 221–222; cf. Kaiserfeld 2008, 5–10) Chiefly inspired by a German example, a doctorate level degree was introduced at KTH in 1927 (Björck 2004, 13, 205, 352).

To increase the professionalism of the engineering field, engineers needed opportunities to communicate personally with each other through associations and meetings (Björck 2004, 20). A prominent association was "the Swedish Society of Engineers" (Sw. Svenska teknologföreningen – STF, 1879–1974), whose members were professionally employed engineers and architects (Björck 2004, 59; Fjæstad 2016, 71). To achieve more professionalism, engineers must also be able to communicate with their peers (Björck 2004, 20). To this end, STF's "Technical Journal" (Sw. Teknisk Tidskrift, 1870–1977) was an important forum for discussions on various technical topics (Fjæstad 2016, 71). Language-related topics were also discussed, for instance, by Hylander (1935), Hylander (1938), Wennerberg (1936) and Wennerberg (1938). By this time, there was a clear wish

amongst professionals in the technological field to establish a body of standardised terminology to facilitate effective communication within the field (Björck 2004, 375).

3.3   The TNC in Swedish society 1941–2018/2019

The starting point for organised terminology work in the Nordic countries was the rapid technological progress of the early 1900s. Engineers and other technical professionals took the initiative for a centralised, national responsibility for terminology issues, as they had understood that having effective and unambiguous means of communication is a condition for technological development. (Bucher 2016, 74–75) The Swedish Centre for Technical Terminology – TNC began to operate in 1941. It was, however, preceded by a group that collaborated on nomenclature issues within the IVA. (Bucher 2011a, 87; Bucher 2016, 74) This group started its work in 1936 (Velander 1941, 463; Wennerberg 1941, 298).

According to its statutes, the TNC's tasks included the following: to collect and process material, to suggest new terms, to publish handbooks and other publications, to monitor and edit glossaries, educational literature (such as course books) and various texts that had been produced by others within engineering as well as texts on basic sciences and interdisciplinary studies, to act as consultants on questions related to technical terminology (both to the state and to individual organisations and citizens), to maintain contact with other countries as regards these matters, as well as to "contribute to and strive towards good technical nomenclature within Sweden in other appropriate ways" (TNC 1941–1942, 19). From the very outset, the work was to be based on active collaboration with a network of experts. On the basis of early documentation, the work division within the TNC as an organisation seems to have been rather simple; the central figure was the executive director John Wennerberg who organised, maintained and monitored all operations (cf. Hambraeus 1957).

During the period 1941–2000, the TNC was a non-profit, voluntary organisation. Members of the association were the IVA, the STF, "Swedish Commission for Standards" (SIS), technical colleges, universities, government agencies such as the civil service, and private businesses (Bucher 2011a, 87; Bucher 2016, 74). The members were represented in an assembly which determined guidelines for central issues (Wennerberg 1941, 299). The Swedish Academy and the Royal Swedish Academy of Sciences (Sw. Kungl. Vetenskaps Akademien – KVA) were extremely influential, even though they were not members of the TNC. The Swedish Academy appointed a language advisor for the TNC, while the KVA enjoyed the right to access and comment on nomenclature suggestions from the TNC (Wennerberg 1941, 299).

The executive director, John Wennerberg, led the work at TNC's head office (Wennerberg 1941, 299; Bucher 2011a, 87). The office was situated in the Swedish town of Västerås, in premises owned by the Asea electronics company (today Asea Brown Boveri Cie – ABB), and the executive director and representatives of Asea worked in close collaboration (Wennerberg 1941, 299; Bucher 2011a, 87; Johansson 2015). From 1941 until 1957, John Wennerberg, engineer and Doctor of Engineering, acted as executive director, and to a great extent he also created the organisational structure of the TNC (Bucher 2011a, 89; Johansson 2015; Bucher 2016, 74, 83).

In the year 2000, the TNC non-profit organisation went bankrupt but after a reconstructuring process, a public limited company called the Swedish Centre for Terminology (Sw. Terminologicentrum) was formed in 2001 (Bucher 2011a, 87; Bucher 2016, 74). The company's name was chosen "to reflect the widening of the centre's scope of activities", in contrast to the previous name which reflected a focus on the engineering field. However, during 2001–2018, the abbreviation TNC was still used "in order to emphasise the continuity". (Bucher 2011a, 87) In the same way as the non-profit TNC organisation, the TNC limited company received state subsidies for its work (Bucher 2016, 89).

From 2014 onwards, the government subsidies diminished, and this gave rise to a discussion about how future terminology work in Sweden should be organised (Landqvist and Pilke 2018, 94–95; TNC Terminologicentrum a). The TNC ceased to exist at the end of 2018, and the Isof government agency was made responsible for some, but not all of TNC's former tasks (TNC Terminologicentrum b).

4.   Findings

In this section, we present the findings of our study. Subsection 4.1 focuses on our first research question and Subsection 4.2 on the second research question.

4.1   The Interested Party Model (1941–1983)

The TNC and the Isof are two central institutions engaged in terminology work in Sweden in the 20th and 21st centuries but some other organisations have also been and/or are active in this work. Organisations are social contexts with a distribution of tasks and an administrative apparatus; they are consciously constructed and continuously in a state of development (Bakka et al. 1999, 15–19). Organisations are collective entities which are represented by a leading figure, such as a director or a spokesperson. This leader has greater access to resources and more

ability to exercise power and influence than the individual members of the organisation; this is a position which is made possible by the collective production of the group. (Bakka et al. 1999, 15–19) John Wennerberg's work to build up networks with participatory experts over the first two decades of TNC's existence is a clear illustration of this phenomenon. This model that involves networking requires the participation of various interested parties, perhaps primarily the members of the TNC but also others interested in engineering and/or languages (see Subsection 3.3). Therefore, we have called the model *The Interested Party Model* (cf. Landqvist and Pilke 2019).

The model may appear mechanical and disproportionately focused on a single individual – John Wennerberg. The model, however, allowed flexibility in the work; it was based on the perceptions, questions and suggestions of the interested parties and it gave Wennerberg a complete overview of the work of the TNC. For these reasons, the Interested Party Model suited the organisation's purposes very well at that time.

4.1.1 *Expertise, networks and the TNC*

The common denominator of a number of definitions of the multifaceted and multidimensional phenomenon *expertise* is that expertise means that someone possesses a certain kind of knowledge (Kuhn and Rennstam 2016, 25), for instance, technical, tacit, interpersonal or physical knowledge (Barbour et al. 2016, 44–46). Expertise is often attributed to individuals, but it also plays a central role in organisations. It is in the context of organisations that expertise is applied to various actions and operations, and this takes place in relation to other experts in different professional environments. (Kuhn 2014, 483; Barbour et al. 2016, 45)

For John Wennerberg, executive director of the TNC 1941–1957, expertise was evidently of great importance. He recruited individuals who seemed to have the right kind of expertise regarding education and who were skilled and experienced in their occupations as engineers, technicians, chemical engineering researchers etc. The experts he recruited knew how various technical objects should be used i.e., they possessed knowledge of the objects and their epistemological function(s) (cf. Kuhn and Rennstam 2016, 28–29).

The concept 'expertise' also encompasses another important component, since ability and communicative skills are important for the purposes of accumulating and displaying expertise. An individual who wants to convey a positive impression of himself/herself must produce results that further the collective good and do so in a relevant and efficient manner. Additionally, the individuals should be able to communicate their own achievements. In particular, with the use of specialised terminology and trade-specific jargon, a person can create the impression of possessing extensive expertise at a high level. (Liao et al. 2016, 81,

83) This demand for communicative competence and its relationship to expertise can at least partially explain why it seems to have been a mark of status to be invited to participate in the TNC's network of experts. This can be gleaned from the TNC's archive, in which the participants highlight their involvement in the formal survey process; this is something that can be assumed to have increased their status in the eyes of their fellow experts within the field in question.

The TNC's formal survey letter number 63 from 1943 clearly demonstrates that experts were happy to participate in the formal survey process. In a follow-up letter to his answer, engineer Nils Smith apologises for answering later than the TNC had requested. The reason for his late answer is "a business trip and a temporary urgent assignment (...)". Smith then expresses his pleasure at being included in the TNC's work "since it is of utmost importance both for our language and for our technology (...)". Finally, Smith promises that he will send his answers faster in the future "if any problems will be sent to me". Smith clearly wants to contribute to the TNC's work, and he possibly views his involvement as something that enhances his status amongst his fellow engineers.

Most of the experts were invited to participate in the TNC's work. There are also instances, however, of experts not wanting to participate at all, or experts no longer wanting to be part of the expert network. This is evident in comparisons between recipients of formal survey letters and the replies from the experts.

The demands placed on John Wennerberg during the TNC's first two decades were considerable. He had to be able to identify relational expertise and agency (Mieg and Evetts 2018, 141), so that he was aware of the precise knowledge and competencies acquired by the people in his and the TNC's network – as well as what competencies they lacked. Wennerberg's awareness of the demands and his attempts to manage them are displayed in one of the formulations that can be found on the printed form for the formal survey letters:

> If you think the letter should be addressed to another person, the TNC would value your statement, even if it is not exhaustive, and at the same time an indication of who should be asked instead.   (cf. Landqvist et al. 2017a, 23, 27)

There are also cases when experts openly acknowledge the limitations of their competence, for instance, engineer Halvard Liander in formal survey letter 231 from 1947 (Landqvist and Pilke 2018, 103).

The examples above imply that individual experts can see themselves as members of a network of experts who can have complementary competence. The term *network* is here used, in accordance with Elg (2007, 120), to indicate that there is a collection of parties who are interconnected but in a less structured, obvious way than is the case in an organisation. This interconnectedness means that an individual is part of a pattern of relationships with others who can be

assumed to affect the individual's behaviour (Elg 2007, 120). A network often refers to the parties who are outside the formal boundaries of an organisation but related to it in ways that are significant to its operations. In an organisational context, this means a limited number of relationships, which in turn means that the relationships can be considered the building blocks of the network. Both formal and informal networks are valuable to organisations (Barnes 1972), and the TNC profited from both types.

4.1.2   *John Wennerberg, expert networks and formal survey letters*

John Wennerberg's ability to recruit experts and build networks not only played a vital role for the TNC during the period 1941–1957 but also subsequently. At the time, national terminology centres had to have networks of various kinds of experts and contacts to other language cultivation institutions within their own nation, as well as international connections (Bucher 2016, 84–86).

An early illustration of Wennerberg's talent for building networks is displayed through the connection between certain individuals. Wennerberg was an engineer and held a Doctorate in Electrical Engineering from KTH and worked for many years at the Asea company (Bucher 2011a, 89; Bucher 2016, 83). Asea's chief operating officer (COO) and later Chairman of the Board during most of the first half of the twentieth century was J. Sigfrid Edström; he acquired office premises for the TNC and he also offered some administrative support (Johansson 2015). Edy Velander, another electrical engineer from KTH, also contributed significantly to the nomenclature work in Sweden partly because he was the president of IVA for several years (Björck 2004, 433). Velander was instrumental in the initiation of a working group for terminology issues at the IVA in 1938 and was involved in the IVA becoming a member of the TNC in 1941 (Velander 1941, 463). In the same year, Wennerberg was elected a member of this academy (Lagerström 1969, 1006). Interpersonal contacts frequently led to connections between organisations; this is certainly the case when it comes to Wennerberg and the TNC.

Since both the Swedish Academy and the KVA took it upon themselves to support the TNC, Wennerberg could enjoy good relations with two respected institutions with a longstanding, rich tradition behind them. The Swedish Academy made a language advisor available to assist the TNC (Wennerberg 1941a; Wennerberg 1954). The advisor took care of the more general language questions and in addition lent credibility to the TNC (Landqvist et al. 2017a, 20). The most longstanding language advisor, Gösta Bergman, also had other important contacts, especially with "the Committee for Swedish Language Cultivation" (Sw. Nämnden för svensk språkvård). This committee was established in 1944. Its original mission was to monitor the development of the Swedish language in general, both spoken and written, and to work for the preservation and development of

the language. Gösta Bergman was the first chairman of this committee and he also served as the TNC's language advisor between 1945 and 1977. (Hänninger 1969, 2–7; Landqvist et al. 2017a, 20) Representatives of the TNC and "the Committee for Swedish Language Cultivation" emphasised that there were both similarities and differences between their work (Wennerberg 1952, 1–2; Wennerberg 1954; Wessén 1966). The TNC, with a focus on terminology and languages for special purposes, however, was established a few years before the establishment of the committee with a focus on the Swedish language in general (Josephson 2018, 39–40).

The STF engineer organisation played an important role in Wennerberg's networking. He contributed articles to "Technical Journal" on both electronics and language including the language usage of engineers and terminology, for example, Wennerberg (1932), (1935) and (1940), as well as Wennerberg (1936) and (1938). Once the TNC had been founded, Wennerberg also attained a forum in the journal, which took the form of a column for announcements from the TNC, so that information on terminology issues could be spread rapidly (Wennerberg 1940; Wennerberg 1942). Wennerberg wrote around 300 TNC columns (Wennerberg 1952, 10; Hambraeus 1957), which were later collected as printed volumes and were published as part of TNC's series of publications (Wennerberg 1942).

Wennerberg also established networks outside of Sweden, primarily with terminology organisations in Norway and Denmark but also in Finland (Wennerberg 1941, 299; cf. Wennerberg 1952, 14–16). For several years, Wennerberg also worked internationally as an electrical engineer (Wennerberg 1935; Wennerberg 1940; Hambraeus 1957). In this context, there was an important connection between John Wennerberg and Eugen Wüster, Doctor of Engineering, who constructed guidelines for a general theory of terminology (Bucher 2011b; Campo 2012). Documents in the TNC's archive reveal correspondence between the TNC and Wüster as well as personal contacts between Wennerberg and Wüster, for instance, in 1952, a meeting commented upon by the Danish engineer Arne Hamburger in a letter to John Wennerberg 6 February 1953 (Swedish National Archives 2019). Wennerberg maintained contact with Wüster, appropriated his general theory of terminology and applied it to the practical work of the TNC. In this way, Wennerberg contributed to the spread and development of Wüster's principles for practical terminology work. (Bucher 2016, 83) Wüster's approach has also been used in terminological research published in the Scandinavian languages (Campo 2012, 183).

The most important aspect of Wennerberg's networking was that he established contacts with experts from various areas of specialisation. In this, a key role was presumably played by the TNC's organisational structure with representatives for the members, as well as Wennerberg's personal contacts with engi-

neers, the business world, authorities and the KTH (cf. Wennerberg 1941, 299; Wennerberg 1942a, 229; Wennerberg 1946). Wennerberg himself highlights the fact that he recruited over 500 experts (Wennerberg 1946). The network contacts were mostly upheld by postal correspondence, complemented by telephone conversations and face-to-face meetings. Figure 1 shows that 362 (97%) of the 373 formal survey letters (97%) were processed during Wennerberg's time as leader of the TNC (Landqvist et al. 2017a, 19). Starting from the 1960s, the TNC began to develop other ways to handle and process terminology issues and the survey method by means of postal correspondence was phased out (Landqvist and Pilke 2018, 93–94).
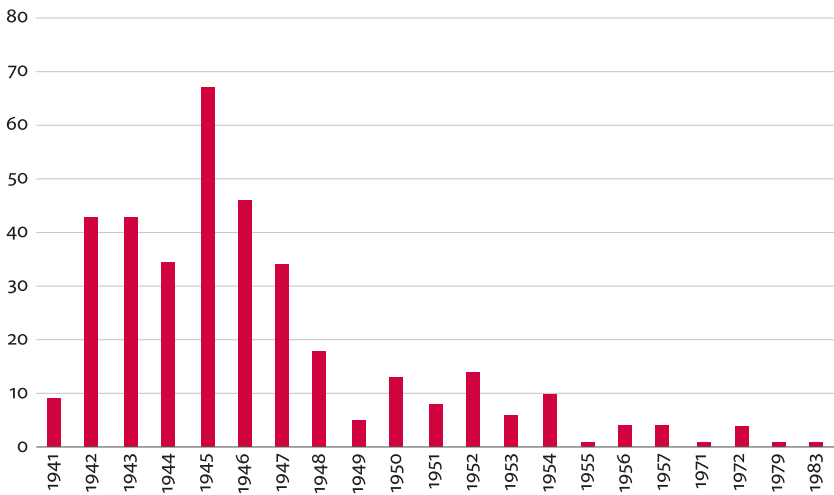

Figure 1. Number of TNC consultations with formal survey letters per year, 1941–1983

The formal letters vary regarding area of specialisation, question content, the number of experts asked, the time frame and the recommendations given by the TNC. The scope of the survey letters also varies greatly, from around 10 pages in length to about 300. The format and modality used are also varied. In certain cases, the formal survey letters consist of verbal text only, while others also contain drawings, photographs and other images. (Landqvist and Pilke 2018, 93–94)

The TNC's formal survey letters are divided according to domain of expertise into 17 categories originally defined by John Wennerberg. Figure 2 illustrates how certain categories contain relatively many formal survey letters, e.g. "GEN", "MECH" and "EE". Other categories contain comparatively few formal letters, e.g. "CONS", "INF and "INS". One of the categories, "WAT", does not contain any registered formal survey letters. (Landqvist et al. 2017a, 19–20)[2]

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2. A list of the abbreviations and explanations of them can be found at the end of the article.
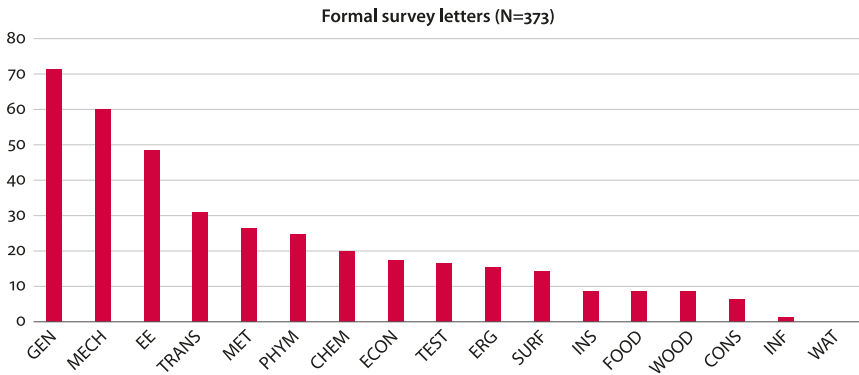
Figure 2. Number of formal survey letter in TNC consultations, 1941–1983, divided into 17 special fields (with sub-categories)

The recipients of formal survey letters were often requested to return their reply within 10 days. Different formal survey letters required different lengths of time, but from initiation until recommendations were given, the process usually took approximately six months. Certain formal survey letters gave rise to new questions and new letter processes, which meant that the TNC's recommendations sometimes took longer. (Landqvist et al. 2017b, 102) Figure 3 offers a visual representation of the TNC's work process with formal survey letters.
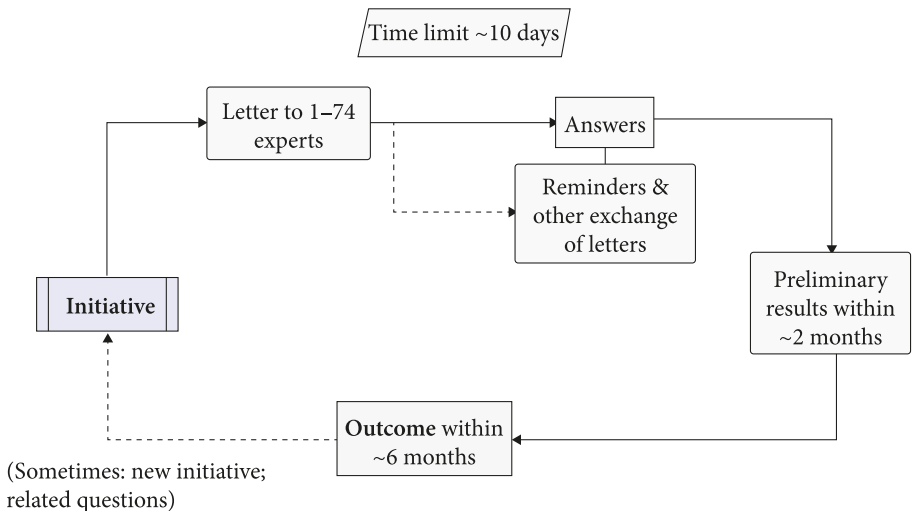

Figure 3. TNC's work process with formal survey letters

During the period 1941–1983, the TNC engaged, in total, approximately 580 individual experts with varying areas of specialisation. In addition to these, there were some 150 collective recipients of formal survey letters: businesses, colleges and universities, trade organisations, etc. (cf. Landqvist and Pilke 2019). A majority of the experts involved were specialists within different engineering fields, but linguists were also consulted. Formal survey letters were sent out to varying numbers of experts, from just one, in some cases, to the maximum number of 74. (Landqvist and Pilke 2018, 93–94)

4.2   Restructuring phase with multiple organisational setting (2019–)

During the 1940s, when the TNC was formed, the representatives of several organisations decided that the Swedish language in everyday use was also in need of care and attention. For this reason, "the Committee for Swedish Language Cultivation" was founded in 1944 (see Subsection 4.1.2). At the outset, this committee was a voluntary, non-profit organisation, but it was restructured many times and continued its work under various names (Lindgren 2007, 8–11). In 2006, language cultivation in terms of public, official Swedish, which this committee had taken responsibility for, was handed over to the government agency known as the Institute for Language and Folklore (Sw. Institutet för språk och folkminnen – Isof). Thus, "the Committee for Swedish Language Cultivation" became the Language Council of Sweden (Sw. Språkrådet), which is a department of the Isof (Statskontoret 2018, 7). As stated in Subsection 3.3, TNC's work was terminated at the end of 2018. The responsibility for ongoing and future terminology work in Sweden was then allocated to several different parties, among these the Isof. This new situation, i.e. *The Restructuring Phase* is the subject of the present section.

In this section, we discuss the changes now affecting terminology work in Sweden, using our interview material as the base of the discussion (see Section 2). The discussion focuses on the opportunities and challenges posed by the new situation, in which terminology work is to be carried out by an organisation which is mainly concerned with everyday language, i.e. the Isof. We also present the Isof as one of the new central actors of terminology work in Sweden. In Subsection 4.2.1. we discuss the first expert's opinion of how the future of terminology work in Sweden is best organised. She is referred to as *IA* and is Head of Department of the Language Council of Sweden. In Subsection 4.2.2, we present the viewpoints of the second expert interviewed, here referred to as *IB*. She worked for several decades at the TNC and held a leadership position between 2001 and 2014.

The Isof, the Swedish state-run government agency, has as its mission to communicate and disseminate knowledge in an engaging way and to act as a consultant advisor in language questions, by collecting, preserving and carrying out

research on dialects, place names, personal names and national folk heritage, as well as through working with language cultivation and language legislation (Isof 2019a). The Isof, like its predecessors, has the task of following and furthering terminological developments in Sweden. In 2017, the Swedish government delegated more responsibility to the Isof for official national terminology work. Since the cessation of the TNC in 2018, the Isof is expected not only to continue the previously existing work but also to coordinate official terminology in collaboration with public bodies. (Statskontoret 2018, 20)

This change in the extent of the Isof's responsibility is the result of a long-standing debate on state responsibility for terminology work in Sweden. A government report, dated 2002, claims that state supervision and state responsibility for terminology work are a prerequisite for its efficient continuation, even if parts of the work can be financed by the business world. The Swedish state is to take responsibility when the market cannot guarantee that necessary terminology work is completed. For instance, this applies to terminology databases for public purposes, involvement in Nordic projects, and terminology work that is required for improvements in the soft infrastructure of the IT industry. (Kommittén för svenska språket 2002, 166–167) A concrete example of this is that the Swedish government decided in 2006 to have a national terminology bank created and the task was given to the TNC. Sweden's National Term Bank (Sw. Rikstermbanken) was launched in 2009 with 50,000 term posts and approximately 250,000 terms. Most of these are in Swedish but terms in some of Sweden's national minority languages are also included, as are some terms in other languages (Nilsson et al. 2016). Since 2019, the Language Council of Sweden also manages this term bank with 130,000 term posts from various subject areas (Isof 2019b).

Both as a non-profit organisation during 1941–2000, and as a limited public company between 2001–2018/2019, the TNC could focus solely on terminology work. The state-level changes that have recently been made mean that this terminology work must now be carried out within the bounds of the Isof government agency, which has several different areas of responsibility related to language, as well as national culture and heritage. The coordination, continuity and goal attainment of terminology work can be ensured, even within the new organisational framework, through a process of formalising (i.e., issuing written regulations and instructions), and by establishing values, plans and legal agreements.

4.2.1 *Cultivation of specialised language with emphasis on follow-up and language resources*

In this subsection, we focus on *IA*, Head of Department at the Language Council of Sweden, and her perception of terminology work in Sweden. She believes that the new organisation of the work will, in a number of years, lead to a scenario in

which there will be active terminologists, good examples of how state and local government authorities carry out terminology work, and established networks in the field. At the end of 2018, the Isof recruited two *linguists for the cultivation of specialised professional language and terminology*. Through the professional title, the authorities wished to emphasise that the work has a different focus than that of a *terminologist* (TermCoord 2019).

Figure 4 illustrates the Isof's suggestions as to how various parties, such as businesses, municipalities and regional councils, should carry out the practical work related to official terminology within various sectors. According to IA, the Isof functions as the hub that informs, monitors, charts, connects and initiates in the field of terminology. However, the central actor, the Isof, will only *operate* actively (collect, process, develop) concerning the development of Sweden's National Term Bank.
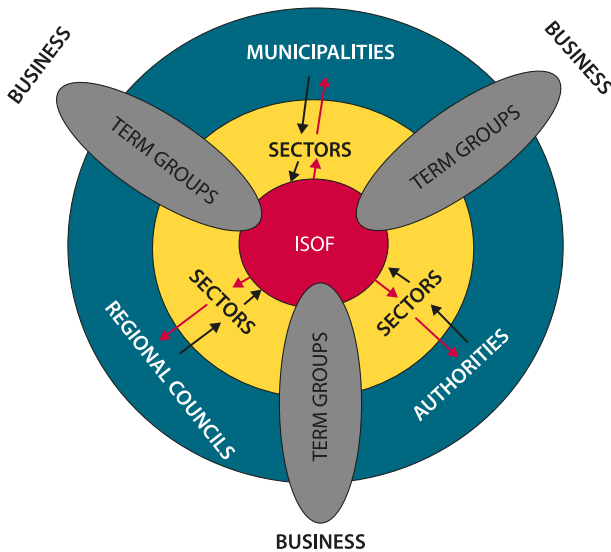

Figure 4. Various parties involved in the official terminology work in Sweden (Isof 2017, 7)

For IA, networks made up of various parties are particularly central to the future of the work. In IA's opinion these networks include universities, authorities and the Swedish Institute for Standards (Sw. Svenska Institutet för Standarder – SIS). Terminology work succeeds best when carried out in routined, field-specific groups. For example, the Swedish National Agency for Education (Sw. Skolverket) could examine central concepts and terms within its own field at regular intervals and send the results of its investigations to Isof. In IA's view, the involvement of

universities is central. Without connections to the academic world, there is a serious lack, a vacuum, in the terminology field:

> (…) I think that if we lose this academic quality assurance part, if no research is done, there's no one who drives the terminology issue forward, there's no education (…) Well, I can see that as a serious threat (…)

If there is to be university level education on terminology in Sweden, the Isof's role can be to offer short courses and summer courses on terminology. The major difference now compared to the previous work of the TNC is the clear allocation of the Isof in a government agency context. IA states explicitly that the private sector is not the Isof's responsibility, even if the door to collaboration is not closed, for example there is collaboration with Scania, a vehicle manufacturer.

According to IA, the political situation might become a threat. Those who are in power in Sweden may not see terminology, or even language and communication in general, as important issues. In that case, those who are in power might not believe that these tasks are a public responsibility. Those with this attitude might think "Oh, languages and all that – the market can look after it".

IA highlights the fact that she herself works actively to prevent this negative situation. She points out the need for terminology in conjunction with budget discussions and advocates the approach "terminology for all". In her estimation, the Isof needs to hire up to seven employees for the part of their responsibility that covers terminology and field-specific vocabulary. Of these seven, four would work with Swedish, two with multilingualism and one with software. IA concludes that if such a scenario came about, the terminology and field-specific vocabulary profile would become dominant in the Language Council of Sweden (see Section 4.2).

4.2.2 *Terminology work focusing on concept analysis*

In this subsection, we focus on *IB*, a longstanding employee of the TNC who also held leadership positions. According to IB, terminology work in Sweden has been supported by three pillars which were built over a period of 70 years. The three pillars are (1) a national centre for field-specific vocabulary and terminology – the TNC – with its unique library, (2) a national term bank which is accessible to the general public – Sweden's National Term Bank and (3) language legislation – the Language Act of Sweden (SFS 2009:600), which particularly emphasises the responsibility of government and local authorities for their own terminology. In IB's view, a strong foothold in the Swedish academic world for terminology work is lacking.

According to IB, the new organisation i.e., the Language Council of Sweden, which in her view is starting "from scratch", should commence its work by sys-

tematically sorting out its own terms and concepts. This would provide necessary experience, helping the Isof's staff to understand both the benefits and the challenges involved in terminology work. In the pie chart (see Figure 4), it is important, according to IB, that the Isof functions as a coordinator that ties everything together. In that capacity, it is important to be aware of how terminology work is carried out. If the department, that is chiefly responsible, does not carry out terminology work directly, applying terminological methods in practice, their competence will be decreased, and their authority will be undermined. During the initial phase, someone must communicate to the Isof staff that terms are something distinct from words and that lexicography is not the same thing as terminology. The employees of the Language Council need to learn to speak what IB calls "terminologese".

In IB's opinion, there should be 7–9 well qualified terminologists at the Language Council ten years from now, and they will hopefully have succeeded in getting an increasing number of authorities to abide by Section 12 of the Language Act of Sweden. Section 12 deals with the responsibility of government and local authorities for terminology within their own area. IB finds Section 12 problematic in that Swedish authorities still have not understood what this means:

> Government agencies have a special responsibility for ensuring that Swedish terminology in their various areas of expertise is accessible, and that it is used and developed.   (SFS 2009: 600, § 12)

According to IB, this section was added to the law late in the legislation process, "at the eleventh hour", and it has not been treated with the same conscientiousness as the other paragraphs.

In IB's opinion, there are only a few Swedish authorities to date who have enough awareness of terminology issues to have launched substantial projects that have yielded results. Two good examples are the National Board of Health and Welfare (Sw. Socialstyrelsen) and the Swedish Social Insurance Agency (Sw. Försäkringskassan). IB also considers it problematic that no one seems to have an overview in the new situation, if the intention is that authorities are only to work internally. In the worst case, this can lead to a scenario in which terms that are important e.g., to both the police and the search and rescue services are defined and understood differently; this could have extensive and disastrous consequences.

Even if IB acknowledges that a functioning model i.e., the TNC, no longer exists, she asserts that a government agency like the Isof can reap more credibility and have greater authority in relation to other state authorities than a company like the TNC. Public authorities are nonetheless limited by long decision-making

processes and heavy bureaucratic machinery. IB also emphasises the importance of the heads of authorities being aware of the importance of terminology work:

> There are certain people who get the point of this whole thing, and those people should, if things are to move forward, either be at the head of the authority in question or have plenty of leverage to pressurise their organisation and convince them about it.

In IB's view, term groups can continue to include individuals from both the business world and government or local authorities, since she feels that imposing strict dividing lines between these categories is unnatural. Nonetheless, IB does not believe in the possibility of consultancy work within term groups.

In conclusion, IB feels that the Isof has "(…) a bit of a learning curve ahead before it attains the level of authority and responsibility appropriate for Sweden's national terminology authority". It is vital that the Isof is aware of and defines the nature of the task at hand, that the Isof is not passive, but rather ensures that the Isof is represented in e.g., ministries and that the Isof can account for the usage of the present government grant of SEK 4 million. In IB's opinion, both term services and education should be part of the Isof's future work in this field and that also conferences, particularly in a Nordic context, should be part of the Isof's terminology work.

5.   Discussion and future research

According to Weick (1979), the true nature of an organisation is change, rather than stability. Terminology work in Sweden has been carried out in various ways, after a national organisation for terminology, the TNC, was founded in the 1940s. Central factors behind the changes include the experts involved, working structures and methods, the scope of the task, technical and technological development and societal conditions. This is evident from the description of the background of the founding of the TNC, and the TNC's two first decades under the guidance of John Wennerberg.

Morgan (1986, 49) points out that "There is no best way of organizing. The appropriate form depends on the kind of task or environment with which one is dealing". The two interviewed experts IA and IB agree that terminology work on a national level is important and necessary. However, their opinions differ as regards what they believe to be the best model for that work. We conclude this article with some reflections on newly formed organisations, and on linguistic awareness, responsibility and infrastructure.

The contingency perspective is dominant within modern organisational analysis, i.e., the organic and flexible approach established by Burns and Stalker in the 1950s. The most successful organisations have been observed to dynamically search for and create opportunities in their surroundings, as well as be able to adapt the organisation to avail of those opportunities. (Morgan 1986, 49–55). In TNC's case, the organisation adapted several times during its more than 75 years in existence to changing needs around it. Those with decision-making power believed that closing the TNC at the end of 2018 was the best way to move forward and develop official terminology work in Sweden. As a result of that, from the beginning of 2019, the Swedish Centre for Terminology no longer exists as an organisation; parts of the TNC's competence resource and tasks have, however, been transferred to the Language Council of Sweden. The remainder of both resources and tasks are now shared by several individual or collective actors in society.

Since organisations are reshaped through the actions of their contributing members, they are both a part of and influential factors in their own dynamic working environment. When an organisation changes, its members' actions and mindsets also change (Johnson 1987, 249; Aaltonen and Heikkilä 2003, 95–96). The closing of the TNC is not a case of organisational change since the organisation has ceased to exist. Nonetheless, the terminologists from the TNC can, in collaboration with various experts participating in work teams and networks, affect how terminology work in Sweden will be organised and carried out in the future.

The model for TNC's practical work that evolved from 1941 onwards was dependent on the existence of an individual who could organise, coordinate and guide the work. This individual was John Wennerberg, the TNC's first executive director, 1941–1957. In a relatively short space of time, Wennerberg succeeded in building a national organisation for practical terminology work in Sweden. The organisation was, however, heavily dependent on Wennerberg's talents, competence and contacts, and when he retired in 1957, his successor did not continue the work in the same way. The archive material reveals that the survey letter process no longer played a significant role after 1957, even if it was a method officially still in use until the 1980s and that TNC's expert network was not utilised as advantageously as it was during Wennerberg's era.

Analyses of the two expert interviews with IA and IB show that the new situation and the change of organisational model give rise to both opportunities and challenges. Experts IA and IB believe that to effectively disseminate, monitor, map out, initiate and provide feedback within the area of terminology, the Language Council of Sweden needs more than the two linguists currently working with the cultivation or specialized professional language and terminology. Expert IB also asserts that it is vital, from a societal perspective, that the Language Council suc-

ceeds in establishing networks in the field, and that the term groups have open channels of communication to the business world. If the networking that is done is not sufficiently extensive, the definitive results could evolve as a model with power struggles and descision strangulation. We believe that in this case scenario, there is a risk that the final, overall responsibility for terminology work cannot be localised, and that it is, therefore, difficult to follow up the results of the work.

In both IA's and IB's perspective, academic quality assurance in the form of education and research should be an integral, central factor. At present, no Swedish university offers terminology degree programmes, although terminology issues do feature as part of several courses, for example, in study programmes for translators.

The term *infrastructure* has been used to refer to the organisation of terminological collaboration and terminological activities on a societal level (cf. Josephson 2018, 248, 252–254). The EU's data bank IATE defines the concept 'infrastructure' as: "basic physical and organizational structures and facilities (e.g., buildings, roads, power supplies) needed for the operation of a society or enterprise". Galinski (1999, 74) divides terminological infrastructures into horizontal and vertical infrastructures. The *horizontal* perspective consists of five elements: "terminology (planning) policy, terminology creation centres, terminology information and documentation centres, terminology associations and corporate cooperation groups led by the private sector" (Galinski 1999, 74). The *vertical* perspective consists of the different ways of organising terminological activities within the various fields of professional specialization (Galinski 1999, 81, 85).

Galinski emphasises that every language community should have its own official or partially official infrastructure with the purpose of promoting, organising and coordinating terminological activities that are carried out by professional experts. Those responsible for the infrastructure should also spread information about terminological activities, institutions, publications and services, as well as promote collaboration and coordinate activities in order to find solutions to shared problems (Galinski 1999, 81). Particularly small and minority language communities tend to borrow terms from another language, if no terminology work is being carried out in their own (Galinski 1999, 83). In the context of Europe, Sweden has been named as one of the successful examples of a language region in which specialised terminology in a minor language has been developed thanks to terminology work and collaboration with neighbouring languages (Galinski 1999, 83–84). The question is whether Sweden is a large enough language community to allow the central terminology organisation to adopt merely a coordinating role. Other issues include: what terminology activities are there, if the current situation is viewed from a vertical perspective? Who is carrying out

terminology activities in what fields? In which areas are there missing pieces that should be attended to?

In the new situation that commenced at the beginning of 2019, there is an opportunity to create a terminological infrastructure in Sweden that will cover society as a whole, both horizontally and vertically. If a network is built that is too superficial or limited, there is a risk that only the areas that are considered central from a political or economic perspective are included. Another vital aspect is time, as the building of such an infrastructure should not be delayed. Figure 5 illustrates two of the societal impulses that have affected the organisation life cycle of the organised terminology work in Sweden.
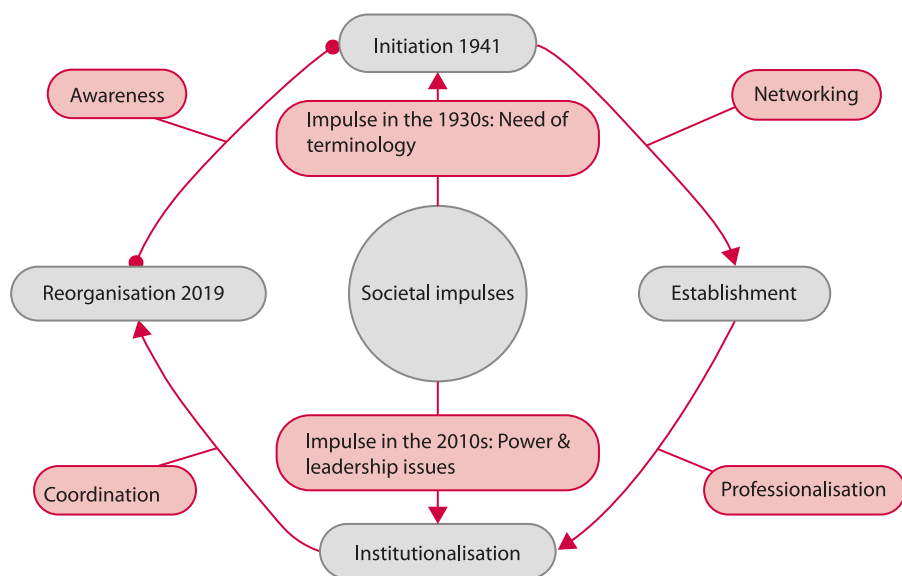

Figure 5. Societal impulses that have affected the characteristics of the organised terminology work in Sweden

In the 1930s, the first impulse from society was the articulated need for organised terminology work in Sweden, formulated by a number of associations, which led to the establishment of the TNC in 1941; see the Initiation phase in Figure 5. The Establishment phase with John Wennerberg as executive director of the TNC (1941–1957) was made possible by strong leadership, experts in networks and their voluntary work to develop the linguistic resources of their respective technical fields. This led to further development and professionalisation of the terminology work in Sweden during the Institutionalisation phase (1957–2018). The more recent impulse from society is based primarily on the use of political power, which was handled by the TNC as a mature organisation. The pronounced goal of this

societal impulse is to develop the terminology work in Sweden through reorganisation. The role given to the Isof, in the Reorganisation phase (2019 onwards), is merely to coordinate and to help other actors to develop a terminological awareness, rather than manage the actual terminology work in Sweden.

As part of our research project *Terms in time – The terms of the time*, we will follow up how the terminological infrastructure in Sweden evolves, since the Isof can be considered to have taken over the central position previously held by the TNC. The focal point of interest is how the various public and private sectors can be involved, and how the work is organised through networking. The extent to which public infrastructure can affect is dependent on how strong the institutional structures in question are, e.g. regarding politics, economy, and science. It also depends on how well the relationships are established between the various working mechanisms (cf. Scott 2008)

In this context, of further interest are the various reasons for and dimensions of (de)institutionalisation. Through expert interviews and observations, we plan to study three central factors influencing terminological work in society. Firstly, we will continue to analyse where and how processes of change begin, and what factors may affect the progress of planned processes. Secondly, we will continue to investigate what type of impulses have caused the change(s) and how the collaboration between the various parties develops. Thirdly, we will discuss what dimensions institutionalisation can reach: regulative (legislation), normative (duty, responsibility) and cognitive (collaboration, success, competition).

Funding

Abbreviations

GEN	General concepts and language questions
MECH	Mechanical devices, processing
EE	Electrical engineering, also telecommunications, electric motors
TRANS	Transport, packing
MET	Mining and metallurgy
PHYM	Physics and mathematics
CHEM	Chemistry, plastics, rubber, ceramics
ECON	Economy, organisation

TEST	Testing, measuring
ERG	Energy, thermotechnology, gastechnology
SURF	Painting, colour, welding
INS	Installation, heating, plumbing, sanitation and lightning
FOOD	Food, medicine, environment
WOOD	Wood technology, textile, paper
CONS	Construction, concrete, building, housing etc
INF	Information, documentation and data
WAT	Water, fluidics

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Address for correspondence

Nina Pilke
Language Centre Linginno
University of Vaasa
P.O. Box 700
65101 Vaasa
Finland
nina.pilke@uwasa.fi

Co-author information

Niina Nissilä   Hans Landqvist
University of Vaasa   University of Gothenburg

niina.nissila@uwasa.fi   hans.landqvist@svenska.gu.se