Time and Space
in Early Norwegian Radio
Technology, Textuality, and Discursive Roles and Relations

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Abstract

The present article takes its points of departure in medium and modernity theory (Meyrowitz 1985), as well as in the research on the special meaning patterns in developed broadcasting referred to as "para-social interaction" (Horton & Wohl 1956) and "flow" (Williams 1974, Ellis 1982). The empirical focus is on the early years of radio broadcasting in Norway (1925-1940). Through a detailed analysis of the relation between radio's production and distribution technologies, on the one hand, and the formation of the medium's textuality and discursive roles and relationships, on the other, the article assesses which stage in the fostering of a new sense of time and place Norwegian broadcasting had reached when the 1930s ebbed out. It is shown that very little in the way of the "blurring" of traditional distinctions between here and there, live and mediated, personal and public had become realities in the Norwegian context of the 1930s.

Keywords: modernity and medium theory, Norwegian broadcasting history, enunciation analysis, flow, discursive roles and relations, early broadcasting technology

Introduction

Like everything else, theories have their histories. Medium theory is no exception. This theory has gone a long way since its inception with Marshall McLuhan's well-known slogan "the medium is the message" (McLuhan 1962, 1964). A milestone in the development of the theory came with Joshua Meyrowitz's analysis of the impact of electronic media on social behaviour (1985). McLuhan and Meyrowitz both focused on the North American context of the 1960s and -70s. The next stage in the development of a theory often involves broadening the focus so as to encompass comparative and cross-cultural analyses. Finally, historical approaches may be called upon in order to add more depth and refinement to the theory. Judging by the recent growth of interest in media history generally, and in the development of media as cultural techniques specifically (Kittler [1986] 1999), it is clear that medium theory has reached this final stage.

Theories are built from small stones. The ambition of the present article is not at all to propose final answers for the next generation of medium theory. Rather, its humble ambition is to offer a concrete historical analysis of broadcast radio from a fundamentally

materialistic perspective, which might serve to underpin such an endeavour empirically. More specifically, the matter to be treated is the relation between radio production and distribution technologies, on the one hand, and the formation of the medium's textuality and discursive roles and relationships, including its sense of time and place, on the other.[1] The analysis will be limited to the early years of the medium within the Norwegian context of the 1920s and 1930s.

Methodologically, my research into the evolution of texts and contexts in Norwegian radio is based on three theories: (1) Erving Goffman's model of context as a laminated frame (Goffman 1986 [1974]), (2) Halliday's social semiotics (Halliday 1990), and (3) Kjell Lars Berge's pragmatic theory of genre formation and change (Berge 1993). Goffman's frame model has been used to indicate initial answers to the empirical questions about what "materials" radio contexts are made of and what kind of relationship exists between the various contextual factors. My analysis of radio contexts according to this model is presented in the figure below:[2]

Figure 1. *The Multiple Layers of Radio Contexts*
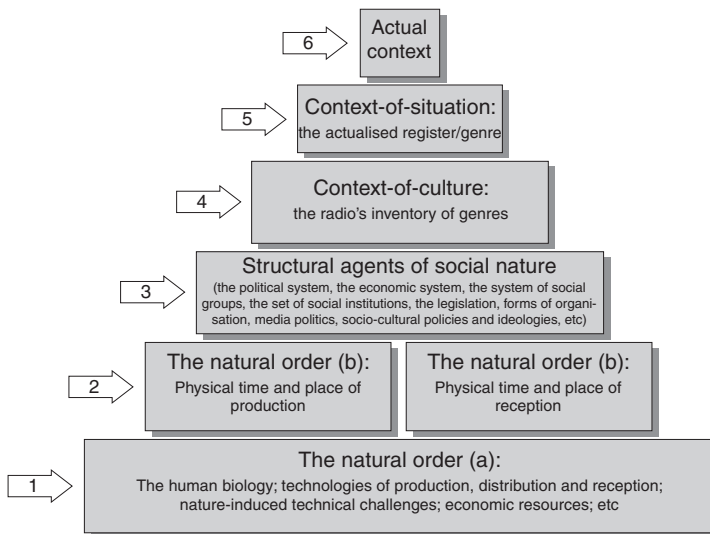
In the present analysis, my focus will be on the two bottom layers of the pyramid in relation to the fourth layer.[3] This is an analytical strategy that has become known as "enunciation analysis". Énunciation analysis has had a relatively strong standing within Nordic media studies. Formulated in general terms, the research objective of investigations based on this methodology is to explain characteristic textual features in, say, television news programmes (Larsen 1991), television sitcoms (Nielsen 1992) or television presenter talk (Isotalus 1998) with reference to the special contextual configurations of time, space and participants enabled by the technologies of the medium.

My analysis is based on information extracted from the official (and near-contemporary) history of the old private Oslo broadcasting company (1925-1933) (Hougen 1932), NRK's official Annual Reports, and a collection of material dealing with radio technology in Norway (notably, Anderson and Bernstein, eds, 1999). I have also used Dahl's historical account of Norwegian broadcasting (1999 [1975]).

To put the historical analysis in perspective, I shall start by summarizing findings and reflections on time, place, textuality and meaning patterns in developed broadcast media, which have been put forth by researchers such as Meyrowitz (1985), Williams (1974), Horton and Wohl (1956), and Goffman (1981).

Consequences of modernity – time, place and flow in developed broadcast media

Human experience is structured in time and space. Like everything else in our experience, communicative events are subject to the categories of time and place. A most peculiar consequence of electronic media is that their emergence created contexts of communication that were radically differently structured in time and space than the contexts that existed previously. For the past 20 years or so, this fact – and its consequences for the diffusion of information in society and the building of social identities, roles and relations – has been a major focus of interest in media theory as well as in theories of modernity. Moreover, its direct and indirect consequences for the evolution of new genres and forms of talk have received considerable attention.

Anthony Giddens has identified the separation of time and space, enabling relations between "absent" parties to be fostered, as the source of the extreme dynamism of modernity (1990: 17ff). This hypothesis is supported – and to a certain extent also empirically validated – by Joshua Meyrowitz (1985). Acording to Meryowitz's analysis, it is the blurring of traditional distinctions between here and there, live and mediated, personal and public brought about by the electronic media that lies at the root of the vehement social changes that American culture experienced during the latter half of the 20th century.

Meyrowitz argues that the ability of the electronic media to bypass former limitations of communication, thereby bringing many different types of people to the same "place", has had a great impact on the "situational geography" of social life and behaviour. The restructuration of the relationship between physical place and social place arising as a result of the altered ways in which we produce, transmit and receive information has changed the logic of the social order. The rearrangement of the social stages on which we play out our roles has transformed our sense of "appropriate" behaviour and resulted in the formation of new structures of interpersonal behaviour. More and more, the forms of mediated communication have come to resemble the forms of live face-to-face interaction. Through processes of hybridization and synthesization, the electronic media are producing mixed settings that have many elements of behaviour from previously distinct types of encounters – mixed settings that amount not only to new interactional patterns, but in fact also to a new social order (Meyrowitz 1985).

Partly in response to its special configurations of time, place, and participants, the broadcasting media have developed special patterns of deictic reference. Their contribution to the building of special kinds of social relationships between the audience and the sender in mass communication has attracted a good deal of attention. A considerable bulk of research literature has emerged that deals with the functions and effects of the meaning patterns in question, using labels such as: "para-social interaction" (Horton & Wohl 1956), "a simulated conversational mode of address" (Goffman 1981: 138), "simulated interaction" (Mancini 1988), "simulated co-presence" (Scannell 1991: 2), and "synthetic personalisation" (Fairclough 1992:98).

The speaker mode, or "inflection of personality" (Nyre 2003: 78), that goes with these meaning patterns has been labelled "being myself" (loc. cit.). In its fully developed form, it is the hallmark of modern Radio. Nyre describes this speaker mode in the following way (2003: 168):

> *Being myself* is a strategy of convincing the listener that he takes part in a mutually involving situation in which they are companions, and that they are equally involved in the events. Speakers are lively, humorous, entertaining and put great weight on invigorating the listeners towards his mood. Conversations are loose and seemingly indexical, and the speakers use their personal initiative and spontaneity to control the action in the studio, as well as to coach the listener engagements [---] Whatever mood of intimacy a personality wants to accomplish, he makes it happen by cultivating some of his own traits as an individual, unique person (Nyre 2003: 82).

On the concrete level of the programming of broadcasting media, one aspect, and one consequence, of the modern merging of time and space has become known as "flow" (Williams 1974, Ellis 1982). Williams introduced the concept with the following description:

> In all developed broadcasting systems the characteristic organization, and therefore the characteristic experience, is one of a sequence or flow. This phenomenon, of planned flow, is then perhaps the defining characteristic of broadcasting, simultaneously as technology and as cultural form. In all communication systems before broadcasting the essential items were discrete. A book or pamphlet was taken and read as a specific item. A meeting occurred at a particular date and place. A play was performed in a particular theatre at a set hour. The difference in broadcasting is not only that these events, or events resembling them, are available inside the home, by the operation of a switch. It is that the real programme that is offered is a sequence or set of alternative sequences of these and other similar events, which are then available in a single dimension and in a single operation (Williams 1974: 86-7).

Broadcasting in Norway in the 1920s and -30s

Overarching Structures

Owing to a lack of public means, the first solution to "the broadcasting question" in Norway placed the initiative and ownership in the hands of private interests. Four private, regional broadcasting monopolies situated in Oslo, Bergen, Ålesund, and Tromsø were officially opened between 1925 and 1927. Among the companies, the Oslo company, *Kringkastingselskapet A/S,* held a dominating position until the nationalization in 1933, when the four companies were cashed in by the State and fused to form *Norsk Rikskringkasting* (NRK) (Dahl 1999: 68).

The model that was eventually chosen by the Norwegian policy-makers was to set up a public corporation responsible for administering all aspects of broadcasting (apart from the manufacturing of sets) under some form of statutory control. By the 1933 Broadcasting Act, the state-owned corporation was established as a nationwide broadcasting monopoly (Dahl 1999, Syvertsen 1992).

The Tension between Places of Production and Places of Reception

Most societies distinguish between places meant for discourses about private-intimate affairs and places meant for discourses about societal, political and cultural affairs. To put it differently, societies distinguish between places meant for close relations and places meant for not-so-close or distant relations. In Habermas's social theory (1989), the two types of places are conceived of as forming a *private sphere* and a *public sphere,* respectively.

When it comes to the activity of radio listening, it takes place in the most typical of all *private-intimate* places: the home. The medium's places of production are a bit more complicated to characterize, but their cultural meanings are mainly associated with the public side of the public-private dimension. For as long as broadcasting has existed, people within the field have distinguished between two types of places: outdoor locations and studios. Succinctly put, outdoor locations are places that exist independently of the medium, whereas studios are locations that have been constructed for the purpose of producing radio programmes.

In principle, places associated with all the different spheres had the potential of being used as outdoor locations. In practice, only places that formed part of the cultural public sphere or the social private sphere were used in the early days of radio broadcasting. If studio locations were "neutral" at the outset, the genres that were used for creating texts within them were not. They notably included talks, causeries, "kronikk-s", news telegrams, and announcements of various sorts. With the exception of The Children's Hour, the prayers, the recitations, and the soirees, all the genres and discursive roles were imported from the cultural public sphere or from the social private sphere.

Hence, radio's places of reception belonged to the private-intimate sphere, while its places of production had a public "ring" to them. Several media theorists have pointed to this "contradiction between the public nature of media production and the private nature of media consumption" (Scannell 1991) as an important agent of change when it comes to the talk of the air.

The Expansion of Networks and "Outdoors Activities"

Together with legal and institutional frames, what ultimately restricts the places of production and reception in broadcasting is the network of stations and transmitters. In the 1920s, the Norwegian broadcasting system basically consisted of four separate and rather small communicative circuits spread out like "islands" across the country. Through a process of expansion and centralization, the four original circuits were gradually fused into one singular, and much larger, communicative circuit functioning on the national level. The national system nevertheless retained certain refuges for the regional circuits to operate on their own, and parts of its programming continued to be produced in the regions – at an increasingly diversified number of places.

When networks spread out so as to cover the whole country and prices fell so as to make radio sets affordable for large parts of the population, a growing number of people from a much broader selection of social groups came to be included in the broadcasting experience both as speakers and as listeners. As for the sender group, another development also contributed to the growing heterogeneity, and that was the expansion of the reportage.

Outdoor productions were steadily on the rise throughout the period, and the radius of the "outdoor activities" was broadened. Moreover, the flexibility in the choice of places

for outdoor productions started to increase. As for the radius of the reportage, one can observe a similar development *from* a primarily Oslo-centred spread of locations *to* a greater dispersion of locations across the whole nation.

Until the mid-1930s, the largest amounts of outdoors programming came from certain permanently wired connections in Oslo. Production also took place at a number of sporadically used reportage locations. Prior to the nationalizations, these were mostly restricted to the Oslo area. Typically, they were public places such as sports arenas, festival grounds or places of public transportation. The voices that radio brought from these places typically belonged to its own reporters, as well as to directors of institutions, chairmen of committees, and other people with leading positions in society. During the latter half of the 1930s, most parts of the country came to be represented on the air. Furthermore, reportage locations came to include workplaces in trades and industries, catastrophe sites and other "newsworthy" places, from which voices belonging to people other than the groups just mentioned could be heard.

EnunciationS and Discursive Roles & Relations

The term *enunciation structure* refers to the arrangement of participants in time and space within communicative events. Because the enunciation structure of an event is fundamental to the organization of the communicative interaction that can take place within it, the set of enunciation structures that a medium supports has a direct impact on the medium's selection of discursive roles and relations.

Practically all the discursive roles and relations appearing on the radio in the 1920s were monological ones. Owing to its one-way limitation, broadcast radio could only accommodate situations with *one* circuit of communication as long as it operated under the circumstances of the rudimentary production technology of the 1920s. The only exception was radio drama, which was produced with great effort under the constraints of the singular microphone arrangement (Hartenstein 2001: 194).

All but *one* of the monological roles and relations were imported from the public sphere. The roles and relationships were: lecturer/auditorium, speaker (orator)/assembly, teacher/class, reader/community, reporter/audience, compere/audience, priest/congregation, and performer(s)/audience. The only relationship that was taken from the private sphere was the "uncle"/children relation.

While radio's contexts were totally dominated by simple, distinct and stable enunciation structures in the 1920s, the 1930s saw a beginning growth of more complex and flexible structures. In the 1920s, there were relatively few shifts in the sender's place, and the shifts that did occur were mostly between places within geographically restricted areas. Temporally distantiated settings did not exist prior to the arrival of recording technologies around 1935.

The introduction of multi-voice formats came around 1930 with the interview and the pedagogical dialogue, and continued with the classroom lesson, the conversation, the discussion and the debate as the 1930s progressed. The emergence of multi-voice formats was founded on the improved production technology of the 1930s. In terms of enunciation structures, the new multi-voice formats amounted to situations with two embedded circuits of communication. If one builds on the annotation used above, the more complicated relations with embedded communicative circuit can be listed as follows:

- <interviewer/interviewee>/the radio listeners in targeted overhearer role (i.e., the interview),

- <questioner/answerer>/ the radio listeners in targeted overhearer role (i.e., the pedagogical dialogue),

- <participant/participant>/the radio listeners in targeted overhearer role (i.e., discussions, debates and "conversations"), and

- <teacher/pupils in class>/ the radio listeners in targeted overhearer role (i.e., the classroom lesson).

Despite this initial growth of more complex and flexible enunciation structures, the medium continued to be dominated by situations accommodating only one communication circuit for decades to come. In the multi-voice formats, the degree of interactiveness remained rather low, with infrequent and stiff changes in speakers. Time shifting became a technical possibility, although it was not so much used. Shifts in speakers' places occurred somewhat more frequently than before, and could involve geographically more remote places than what was normally the case in the 1920s. On the level of genre, we are talking about the "between-stations microphone rolling" format, the gramophone reportage, the "sound picture", and the composite programme. On the level of nature, the developments were founded on improvements in transference and production technologies, which will be treated below. In a Norwegian context, more complicated énunciation structures than those described here did not appear until in the 1950s, when the show was introduced.

Now, the question is whether or not the repertoire of discursive roles and relations that has just been described matched the medium's set of possible enunciation structures. The way to find out is to identify radio's enunciation structures and examine their development in the 1920s and 1930s. This analysis critically involves seeking answers to the following questions:

Who is able to talk to *whom*?

Who can talk, and *who* can listen?

When and *where* is it possible for the talking and the listening to take place?

For this exercise, the questions must be interpreted at the grounding level of what is physically possible. The answers to the questions are *essential to the kind of discursive relations that can be fostered in a situation*. The novelty of broadcast radio was that the answers could be combined in ways that had formerly not been possible. Therefore, one would expect radio to foster new types of relations.

Like print media, broadcast radio is a one-way channel that does not allow the two main parties in the communicative event to take turns in the speaker and listener roles. There can be no interaction between the radio speaker(s), on the one hand, and the radio listeners, on the other. Only one of the parties is allowed to talk, while the other is referred to the listener role. Just as is the case with the print media, messages in principle go *from* one singular place *to* many places. Depending on the network of the broadcaster, a plurality of places can also be involved on the sender side. Yet the explosion of the place coordinate is technologically much easier to achieve on the reception side. Thus,

the listening party is an audience consisting of many individuals situated at different places, while the talking party consists of a much smaller number of speakers situated at a restricted number of places. *Unlike* what is the case with print media, the talking and the listening are able to take place simultaneously.

The material division between speakers and listeners is the *raison d'être* of the medium – and therefore an invariable characteristic of radio contexts. The arrangement of participants in time, however, has been open to change historically, as well as to variation synchronically. In the early days, temporal simultaneity was inevitable, as radio transmissions were always *live*. Even so, it was usually only the animator part of the speaker's role[4] that was simultaneous with the reception in the 1920s and 1930s, because the most exploited production formats involved heavy use of pre-planning techniques.

When recording media were taken into use in broadcasting in the mid-1930s, fully *asynchronous* production and reception became a possibility. All the same, most programming continued to be produced according to the old "continuity realism regime" (Nyre 2003: 87ff). In fact, veritable changes in production methods did not set in before in the 1950s. The delay was due partly to practical limitations such as lack of equipment, and partly to the normal conservative nature of existing practices. The only programming area where the new condition of the disunited time coordinate quickly became noticeable was music, with the amount of gramophone music steadily raising. Recording technologies also started to be used in the production of radio drama and reportage, but only for limited amounts of the production and only for the purpose of shifting the time of transmission. For this reason, the main effect of the recording technologies at this stage was that they enabled the production to take place at more places than before.

On the basis of the account just given of the medium's enunciation structures and their development in the 1920s and 1930s, it is possible to answer the question of whether or not they matched the imported discursive roles and relations. The answer is "not quite". The new features of radio's contexts gave rise to a number of discrepancies. The most critical new feature seems to have been the distributed receiver group consisting of individuals in their private homes located at different places. According to the definitions implicit in the imported discursive roles, the receiving party was to consist of a collective present at a public place together with the speaker. Another difficulty stemming from the private nature of the reception places was that it made the institutional authority invested in the speaker roles sound awkward. The use of manuscripts to control time and performance was another practice blatantly at odds with the informal character of the reception place.

Thus, radio's new configurations of time and space created a potential for change in the direction of more symmetric relations between participants in a number of genres and formats, but this potential was not realized in the historical period with which we are dealing.

There are many reasons why the processes of change and naturalization had not got any further in a Norwegian context by the end of the 1930s. One obvious reason is that such processes invariably take time. Another evident reason is that the geographical expansion was particularly protracted on Norwegian ground. Further reasons for the slow pace of change are to be found among the natural, economic and technical resources, to which we now shall turn.

Technologies and Facilities

Radio's technical development occurred bit by bit – in step with the general techno-logical growth within electronics, with the gradual increase in the supply of economic resources, and with the settlement of the organizational question. Five developmental lines can be discerned:

1. An expansion of networks,[5]

2. A heightening of the quality of the transference lines,

3. An amplification of the capacity of the transmitters,

4. Improved reception equipment, and

5. Improvements in the stations' production facilities.

While much of the geographical expansion took place under the private system (1925-33), veritable technical upgrading did not take place until the NRK era (1933-1981).

Originally, the channels for transferring programming between Oslo and the regional stations were long-distance telephone lines of rather poor quality – a system that was expensive, unreliable and unfavourable to sound reproduction (Hougen 1932: 95f). During the latter half of the 1930s, transmitters of relatively high capacity were raised on 8 geographical locations, and what was later to be known as the "high frequency chan-nel" was constructed for the long transport stretches of the network. This transference technology consisted of special cables and aerial lines for so-called "carrier frequency transference" – a kind of radio transference through wire. This channel joined the dispa-rate parts of the country technically, while also enhancing sound reproduction (Hougen 1932: 95f; Dahl 1999: 225, 240). By 1940, NRK's broadcasts reached practically all the valleys, plains and costal fringes of Norway, although quite a few areas remained in the radio shade until FM transmission was gradually adopted in the 1950s.

To a large degree, the activity of listening was conditioned by features of the available reception equipment. The crystal set, which was by far the most widely spread receiver in the 1920s, did not permit the sound signal to be amplified. Radio listening therefore re-quired headphones, the wearing of which made listening a solitary activity. Furthermore, listening was demanding because one had to attend continuously to the signal and the receiving equipment. Therefore, listening was an expert-like technical pursuit, which typi-cally attracted boys and young men. With the deflation-induced general price reduction in the latter half of the 1920s, valve receivers to which loudspeakers could be connected became more affordable. The audience gradually turned to these receivers, which paved the way for radio listening as a social activity (Dahl 1999: 109ff; Nyre 2003: 144ff).

Radio's original production facilities and technologies were described in the follow-ing way by chief engineer Fritz Gythfeldt:

> Broadcasting technology comprises one acoustic component related to the studio and the place of reception, one electric component consisting of the microphone, the loudspeaker or the telephone, amplifiers and the wire to the transmitter, and yet *another* electric component comprising the transmitter itself, the mediation through the ether and the reception by way of the receiver apparatus [my transla-tion] (Hougen 1932: 88).

As we see, broadcasting technology was an integrated (re)production and distribution technology. Most of the elements belonged to the distribution and reception parts of the technical channel. The production technology was very simple, comprising only two elements: the microphone (in singular form) and its acoustic surroundings (i.e., the studio). As compared to the production technology of later times, there are two conspicuous gaps in the short list of elements: the lack of recording machines and of devices for mixing and switching between sounds from different sources.

There were five production-technical areas that called for immediate attention: (1) the microphones with their impracticable weight, poor sound rendition and lack of direction sensitivity, (2) the supply and organization of production rooms, (3) the acoustic properties of the studio(s), (4) the connections to outdoor locations from which transmissions were to be arranged, and (5) techniques and tools for switching between and mixing sounds from different sources (be they studios, telephone connections or wired locations such as churches and theatres).

To begin with, all stations were equipped only for live production. The relay stations in the smaller towns only had one studio, while the larger stations normally had one control room and two studios – one meant for speech, the other for music. Whereas the Oslo station experienced a certain growth in production rooms and technical equipment, not much happened to the production facilities at the other stations before the NRK modernized the control rooms at all larger stations in 1937-1938. When the War came, the Oslo station had got recorders and reportage cars, but none of the other stations.

During radio's first years of existence, the production of outdoor broadcasts was strongly impeded by the shortage of wire installations and telephone connections. Provisional cables and telephone lines were indispensable for channelling outdoor broadcasts to the transmitter. Also short-wave radio was used under circumstances where wiring was impossible or particularly impractical, i.e., with transmissions from trains, ships, islands and other roadless locations. To begin with, Kringkastingselskapet only had five wired outdoor locations: The Stock Exchange, a couple of churches and two restaurants (the latter provided dance music). For the most part, outdoor transmissions had to be arranged with the help of provisional cables plugged into the closest telephone exchange one could find (Hougen 1932b: 88ff, Dahl 1999 [1975]: 115).

This toilsome situation was somewhat alleviated by the gradual increase in permanent wires to frequently used locations. The mid-1930s brought radical technical innovations, which liberated the production of outdoor broadcasts from wires and lines, namely the coming of reportage cars with gramophone recorders. The Oslo station also had a certain number of long-distance telephone lines for transferring broadcasts from other parts of the country (Hougen 1932: 91ff).

In spite of its critical function, the microphone was by far the weakest link in radio's technical chain in the 1920s. All the different microphones in use had imperative technical and practical limitations. What is more, their unmanageable weight referred them to stationary positions in the studio and represented a hindrance in the production of outdoor broadcasts (Andersen 1999). Radical technical innovations did not come until the arrival of transistor technology in the 1950s. Yet the 1930s did see certain improvements in the old technology. Compared to other microphones at the time, the new "Moving Coil" microphone was small and robust – in other words, suitable for reportage activities (Andersen 1999; Hougen 1932: 88ff; Dahl 1999: 113ff).

Most sounds on the radio in the 1920s and 1930s stemmed from vocal organs, musical instruments, or happenings taking place in the locality where the microphone was placed. But the medium also began to use special machines for generating sounds. The table below offers an overview of the devices that came during the 1920s and 1930s, including a few pieces of information:[6]

Table 1. *Overview of Sound-generating Devices*

Time of introduction	Device	Upgrading	Use
Day One	Gramophone	Electrified in 1927	Music programmes, Fill between programmes and in case of transmission ruptures
Day One	Mechanical sound machines	Professional machines in 1934	Radio drama
Day One	Time signal clock		Time signals twice in the evenings
Mid-1930	Pause signal generator	1939	Fill between programmes and in case of transmission ruptures
Mid-1930	Station jingle generator		Used when opening the day's programme, as well as when re-opening it after the morning and afternoon breaks
1934	Recorders	1936, 1939	Primarily used in reportages, radio drama, and folk music programmes
1934	Archive of pre-recorded sounds	Gradual growth	School broadcasting, radio drama

Recording technologies were first introduced in the mid-1930s with the acquisition of disc recorders. The total playing time of each disc was around 3 or 4 minutes. In addition to time shifting and replay, the primary functions of these recorders were to enable re-makes of unsuccessful performances and to make it possible to select samples for transmission after the production. The disc recordings were not editable.

Both the playing time and the degree of editability were improved with the sound-film system, which was adopted in 1936. With films lasting 13 minutes and synchronization of two machines, it became technically possible to record full-length programmes (Dahl 1999: 409). The recording machines were primarily used in reportages, radio dramas, and folk music programmes (NRK's Annual Reports 1934-1935 & 1935-1936).

The arrival around 1930 of production set-ups involving more than one sound source created technical problems that had not existed before, because apparatuses for switching between, mixing and regulating sounds from different sources did not yet exist. Without such tools, it took a lot of experimentation and ingenuity to find workable arrangements for switching between the different microphones used, for instance, in an outdoor transmission from a banquet with speeches delivered by different speakers (Hougen 1932: 93f). With the increase in studios and connections from outside, the Oslo station's need for an appliance that would simplify the operation of selecting, mixing and regulating sounds from different sources became pressing.

The first switching apparatus, designed and constructed in 1932, immediately relieved the situation. Chief-engineer Gythfeldt proudly explains how the prototype control board

facilitated pause-less and practically unnoticeable transitions between programmes. He also describes how this manually operated apparatus was used in drama productions – allowing the dialogue to come from one studio, while music of varying volume came from another. A similar apparatus was constructed for reportage usage. Also an especially designed "church mixer" was constructed, which made it possible to switch between microphones placed at the pulpit, at the chorus door, at the altar, at the altar rail and in the tower of the church bell (Hougen 1932: 90; Andersen 1999: 57).

To begin with, the function of the "microphone blenders", as they were called, was first and foremost to enable smooth switching from one microphone to another. The increase in and diversification of sound sources – notably, the coming of recorded sound sources – created new needs. Around 1935, one started mixing the dialogue in radio plays with music and recorded sound effects. When the Drama Department got new premises with several studios in 1939, the installations included mixers in all three of the control rooms. It also included as special "effect studio", which had three gramophone players so as to facilitate the playing and mixing of sound effects from three different records (Ormestad 1999: 81).

Another function of the mixers was that they provided a certain protection against transmission ruptures. As long as one operated with only one microphone, the equipment's unreliable mode of functioning represented a constant threat of sudden silence. With mixers and production set-ups involving a small handful of microphones, one could solve technical breakdowns by switching to a different microphone (Hougen 1932b: 93f; Dahl 1999 [1975]: 115).

Early broadcasting history is very much a history of geographical expansion. What furthered that expansion was not only the raising of networks, but also the development of the reportage equipment. In the 1920s, radio reporting was a strenuous job. The sheer weight of the production-technical tools represented a major hindrance to the production of outdoor broadcasts. Thus, reducing the weight of the equipment and making it portable were the requirements that guided the first development. In the mid-1930s, a veritable revolution came in the form of a reportage car fitted with amplifiers, batteries, wires, a short-wave transmitter and two disc recorders. While the new mobility made it possible to "get out" where things were happening all over the country, the gramophone recorders made it possible to transport the engraved traces of the happenings to the transmitter (either directly or via line transference), so as to get them on the air.[7]

An Emerging Basis for a New Sense of Time & Place
and a Radiophonic Textuality

Despite growing industrialization and improvements in the nation's economy, the 1930s have gone into history as "the harsh 1930s", mainly because the times of mass unemployment lasted until the war (Furre 1996). Relative to NRK's financial needs, the amount of money that was fed into its activities remained moderate. Finances therefore remained a constraining factor for necessary investments in production facilities and machines. Scarcity ruled, especially at the regional stations. Logically, the effects of the new mobility and sound preservation media were limited as long as the insufficient supply of cars and recorders forced most of the production to continue as before.

Regarding time and place, the material basis for the development of their "new senses" – as expressed in the "being myself" speaker role, the "simulated fresh talk",

and the complicated enunciation structures – simply did not yet exist as the 1930s passed into history. Regarding place, a particular agent of change had nonetheless come into operation right away, namely the collisions between the public nature of the medium's places of production and the private nature of its places of reception. Furthermore, major developmental leaps had been taken in the latter half of the decade with the completion of the national network, the construction of the "high frequency channel", and the improved reportage equipment. People from all geographical areas and social groups had been connected in a large communicative circuit functioning nationwide. In that respect, the conditions were favourable for the fostering of a new sense of place. Yet the functionality that was needed for shifting from one place of production to another unnoticeably was not yet available. This limited the extent of shifting and blending of the space coordinate. For instance, changing the direction of the high frequency channel was a procedure that took several seconds and was accompanied by a verbal marking. A down-to-earth reason why changes in place and time were pointed out to the listener was that they created silences in the programming output. The practice of explicitly mentioning shifts in time and place can probably also be read as documenting the contemporary conception of them as something remarkable.

With respect to time, the material basis for the formation of its modern sense had just started to develop when the 1930s passed into history. Listeners in the latter half of the 1930s could, for the most part, trust radio's sounds to be produced simultaneously with the time of reception, as the few recorders that had been taken into use in the mid-1930s were involved only in a small proportion of the programming output. In cases deviating from the normal situation, the time shifting was explicitly pointed out so as not to mislead the listeners. In fact, the gramophone recorders affected the *place* dimension just as much as the time dimension, as they enabled reportages to be produced at locations without telephone lines or possibilities for provisional wiring. Once produced, the reportages were transported to the transmitter on discs and aired without any post-hoc editing.

The recording technologies were not much used for switching between different points in time *within programmes*. The only exception to this was the folk music programmes, where the recorders were exploited in order to create variation by chaining together musical performances that had been recorded at different times and places. In the production of radio plays, the possibility of letting part of the play go on air live was sometimes used, while other parts of the same piece had been pre-recorded.

With respect to radio's textuality, it was still dominated by the aesthetics of individual title programmes structured according to the set of traditional genres that the medium had imported from the surrounding culture. The new medium had nonetheless seen the initiation of certain developmental trends towards greater diversity and variation in form and content, enhanced continuity, shorter texts, greater mixing of elements within programmes, and increased use of multi-voice formats. Furthermore, it had seen the formation of the first truly radiophonic genres such as the gramophone cabaret, the sound picture, the composite programme, and the "microphone rolling" format.

The Sense of Time and Place in Early Broadcasting

To conclude, the development of a radiophonic textuality had not come particularly far when the 1930s ebbed out. This can largely be explained with reference to the available

technologies and facilities. So far, weaknesses in many of the production technologies left much to be desired with regard to sound quality. Most productions were live, and the programming output was dominated by monologue verbal formats using the minimal studio/microphone set-up. In the case of more complicated productions such as entertainment programmes and radio plays, the number of studios and microphones in use could still be counted on one hand. There were clear limits to the effects of the gramophone recorders on part of the overall textuality of radio's programming, as they did not allow any post-hoc editing of the pre-recorded material. The daily programme was still divided into three parts with longish transmission pauses between them, and the technical operation of the high frequency channel caused shorter silences to occur at irregular intervals. The pauses were not felt to be a problem, however, before the idea of the American "continuity radio" reached the country in the 1950s.

Not much of the potential for change that lay in the new possibilities of broadcast radio was realized on Norwegian radio in the interwar period. Very little in the way of the "blurring" of traditional distinctions between here and there, live and mediated, personal and public that Meyrowitz (1985) so wittingly proposed to have been the effect of broadcast media on the American society in the mid-1980s had become realities in the Norwegian context of the 1930s. The role relationships and text production methods in use on the new medium were for the most part traditional ones, which had been imported from existing public contexts of the speaker/collective type. Both the deictic simultaneity of the new medium and its travelling between different geographical places were still felt to be miracles. The relationship between physical place and social place remained unsettled throughout the period, and the new structures of interpersonal behaviour that its settlement finally eventuated lay decades into the future.

In the 1930s, technical production of the broadcast itself was often a major theme in reportages, and it was not uncommon for places for microphone visits to be chosen based on the challenges they entailed for technical transmission. Transmissions were made from travelling trains, from ships at sea, or from submarines under water. Allow me to end this article by citing the opening of a radio reportage produced in November 1935, which was broadcast under the title "On board the opening train over Vegårdsheia, short wave transmission from the train". As readily appears from this text passage, the traditional distinctions between here and there, live and mediated, were definitely not blurred, but rather made the most of. What can be observed is a strategy that highlights the technical miracle of the new medium. Please note the number of deictic references to participants, to technical apparatuses, and to the time of speaking (time adverbials and the present tense). The primary message of the passage seems to be: "At this very moment, we are here and you are there, and the miraculous radio is bringing our place to your place". The passage reads as follows:

> Today the microphone and other heavy equipment have been placed on board the opening train travelling the Southern railway line between Neslandsvatn and Nelaug. We are now making a transmission with the help of a short-wave transmitter from the train to a receiver on Vegård hill and thence by wire to the broadcasters. Hopefully, this technical experiment will be successful. And we will be able to give you impressions from this ceremonious occasion that down here where we are really is an occasion. The opening of the 60-kilometre-long new railway line from Neslandsvatn to Nelaug.

Notes

1. Once such a topic has been stated, a disclaimer is called for. The demarcation of this problem field does not imply that I regard medium and technology as the main "causes" underlying radio's textuality and discursive roles. Nor do I regard them as the primary agents of change involved in the evolutionary process indicated by the description of early radio to be offered below as opposed to that of developed broadcast media presented above. Rather, I understand technology and other natural resources as part of a complex "mechanism" of change.

2. For a more detailed presentation of this figure, see Vagle 2005.

3. A fuller analysis is provided in Vagle 2005 and Vagle 2007.

4. Goffman has suggested that speech roles are analysable in terms of four basic speaker functions: the animator function, the author function, the principal function, and the function that he characterizes as involving a "slave relation to the event". The animator function is to provide the message with a sounding voice. The author function is to put the message into wordings, often by scripting the lines that are to be uttered by the animator. The principal function is to be responsible for the content of the message. Normally, the principal of a message is the party to whose position, values or belief system the message attests. In the prototypical speech role of speakers engaged in ordinary conversation, these three basic speaker functions are usually incumbent in the same person. In other, more formal, speech roles they are often split up and distributed across different parties.

5. This expansion has been described already in connection with the treatment of geographical places.

6. See Vagle, 2010, for a fuller description of these devices and their use.

7. For a more detailed description of radio technologies, see Vagle 2007: 320ff.

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