A Transnational Approach to Radio Amateurism in the 1910s

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Introduction

Since radio waves easily transcend national spaces, a transnational approach can enrich the history of radio broadcasting and wireless telegraphy with its focus on a constant exchange of knowledge, techniques, and news over national borders (Badenoch/Fickers 2010). Following previous research on transnational histories of broadcasting from 1925 (Lommers 2012; Fickers/Lommers 2010), this chapter suggests a social perspective on specific users of wireless technology in the 1910s: radio amateurs. The national literature on radio amateurs is frequently limited to national heroes who developed an idea of national radio broadcasting that "evokes notions of national unity" and serves as "an ideal symbol of national togetherness." (Hilmes/Loviglio 2002: xi–xii) In contrast, a transnational approach helps to identify actors who exchanged information about recent inventions, achievements, and policy decisions on wireless communication across national boundaries. This chapter takes such an approach to reflect on the role of radio amateurs who reshaped, played with, appropriated, and familiarized themselves with wireless technology in the 1910s, paving the way for public and commercial national radio broadcasting.[1]

The historiography of radio amateurs usually begins with the 1920s in the national institutional framework, when the first national societies were formed (see for example Brochand 1994; Hilmes 1997; Lovell 2015). However, in the 1910s radio amateurs were already prominent actors who engaged in dialogue about the technology. They were technical enthusiasts who introduced radio technology to the public. As such, they should be considered co-producers of

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new technologies from the perspective of the social construction of technology (Pinch/Bijker 1984; MacKenzie/Wajcman 1999; Oudshoorn/Pinch 2005; Oldenziel/de la Bruhèze/de Wit 2005). From this point of view, Kristen Haring (2007) and Susan Douglas (1989) have already rediscovered the essential role of early amateurs in helping to shape the development of the radio. However, both emphasized national cases, specifically the US. As this paper will show, exploring the first radio amateurs from a transnational perspective also means redefining the very concept of a 'radio amateur' in terms of social interaction with media technology.

In contrast to national histories, the main hypothesis of this research is that radio hobbyists formed a community from at least the 1910s onward, and played an important role in spreading radio technology across national borders. Radio amateurs kept up with the most recent news in the field, invented new machines, and demonstrated the use of the wireless to their local communities, such as schoolteachers and priests. They were involved in reception and dissemination of information about the evolution of technology through the letters to technical journals and international organizations, correspondence with each other, publication of books and articles. They followed the political developments on wireless as well, including national and international legislation, and passed them on to the public on national, or even local, levels. Moreover, they posed questions back to political institutions about the obstacles to the use of the technology, providing valuable feedback to the decision-makers. Therefore, in filling the gap in the scholarship on wireless communication in the 1910s, this research hypothesizes the important role of radio amateurs in shaping the medium by questioning and redefining the notion of a 'radio amateur' itself.

Re-defining Radio Amateurism

In national histories, the notion of a radio amateur usually implies two main features. On the one side, it is opposed to a radio *professional* – an expert who earns money for their radio activity, usually educated in some form of national professional school. However, in the formative stage of wireless communication and radio broadcasting, specific professional education did not yet exist, and therefore the border between professionals and amateurs was not clearly defined. Apart from a few British operators who received training in telegraphy school, almost all radio operators had begun their career as amateurs (Bartlett 2007).

On the other hand, a radio amateur considered within a national framework is frequently defined by an affiliation to a national association of radio amateurs. This institutional perspective suggests the 1920s as the start of radio history because that is when various unions, journals, and societies were estab-

lished. However, there is an extensive range of sources that proves that radio amateurism existed before the establishment of national radio amateur associations. Many individuals operated in different European countries to push the development of the technology forward. The widely-known fact that many European governments prohibited all wireless experiments during the First World War to clear the airwaves and avoid unwanted interception shows that individual stations existed before the war. This policy met with stiff resistance among many individuals who continued to operate illegally (cf. "Wireless in the Courts" 1915). Moreover, the First World War became one of the first wars with extensive use of wireless communication, and some of these amateurs were employed in military forces as technical experts.

In light of these limitations, this chapter reconsiders radio amateurism through the informal nature of this activity by using a combination of different theoretical concepts. First is the idea of a participatory culture (Toffler 1980; Jenkins 1992; 2006). Although the concept has been usually applied to the Internet projects like Wikipedia, YouTube, and Facebook, historians of technology have reminded us that participatory culture is not uniquely characteristic of our time. In fact, early radio amateurs were known for their active experiments with radio, adopting it to public needs and re-inventing its use, which is a part of how participatory culture is defined. They not only influenced understanding of radio, but also made it a completely new everyday life practice, which contributed greatly to the turn from telegraphy to broadcasting (Streeter 1996), or in other words, provoked a "double birth" of radio technology (Balbi/Natale 2015).

Second, a radio amateur could be considered as a person who experiences pleasure in using the technology and feels enjoyment in relation to the object. The concept of enjoyment has become recently gained appreciation in the history of technology (Bown 2015; Schuster 2016). In *Enjoying Machines*, Brown and Juhlin argue that the enjoyment is the driving force of using and developing technology, from gramophones to computer games (Brown/Juhlin 2015). Indeed, radio amateurs, as it is evident from their name, experience a keen interest in, and a strong feeling of affection toward, wireless technologies. Their usage of technology is inspired not only by great achievements of communication but the playfulness of technology (Kirpal 2003).

Finally, analyzing technical hobbies, Kristen Haring argues that "radio hobbyists formed their own 'technical culture,' a culture built around and establishing an ideology about technology." (Haring 2007: XV) This technical culture provided the community of radio amateurs a technological identity as a special, socio-technological group. The radio amateurs' community has specific practices, ethical codes and rules, such as social feeling, brotherly spirit, tolerance, politeness, and comprehension (Schiavone 2014: 93), which is usu-

ally obtained through common practices, exchange of knowledge, and similarities in the patterns of using of technology.

Therefore, this paper aims to understand radio amateurs, not by focusing on national and institutional relations, but instead following three main concepts, participatory culture, enjoyment of technology, and a technical culture, to grasp the informal nature of radio amateurs from a transnational perspective.

Methodology & Sources

One of the difficulties of transnational research is finding an appropriate method to collect the sources that would allow one to trace transnational flows without focusing on national differences, even though preserving historical sources is mainly a national prerogative. This research is based on an analysis of a combination of different sources on international and national levels. The main focus is on those issues that were negotiated by international organizations and appeared in various national landscapes.

First, the archive of the International Telecommunication Union (ITU) based in Geneva helped to build a better understanding of an international arena of political regulations. At this stage research also faced the difficulty that another valuable international archive on radio, the archive of the International Broadcasting Union (IBU), held at the European Broadcasting Union (EBU) in Geneva, is not currently accessible to researchers and the public. However, the documents found in the ITU archives compensated for this lack, since these two international organizations corresponded and shared valuable protocols. Second, the main European archive on radio amateurs in Vienna, the Dokumentationsarchiv Funk, provided documents on radio amateurs, such as technical journals, and also written evidence of amateur radio operation: so-called QSL-cards, used to acknowledge reception of radio signals. Third, the analysis included some national sources, such as political discussions, radio amateurs' magazines, and other documents that reflected on radio hobbyists, and the development of radio technology and use. Finally, sources on the history of non-media-related technologies, such as meteorology and geography, shed more light on the professional activity of some radio hobbyists and their entanglements in radio development.

The problem in finding radio hobbyists in these sources is that they were rarely called that because radio amateurs' clubs did not yet exist. One approach is to trace the biographies of those individuals who made significant achievements in national radio broadcasting in the 1920s, to see whether they began their career as radio hobbyists, as is was frequently done in national histories of radio. However, a transnational approach means looking not just at national heroes. To identify the most active and loyal private correspondents and sub-

scribers, the ITU correspondence register was closely analyzed. Then, the biographies of these most active individuals were closely analyzed using the three concepts outlined above: participatory culture, enjoyment of technology, and technical culture, to distinguish passionate amateurs from those experts who represented a particular company or worked as professional telegraph operators. Finally, sources from national archives and other international organizations provided more details on the accomplishments of the particular personalities.

Case studies: Albin Belar, Luis Cirera de Terré, and Jean Abelé

Approaching the concept of early radio amateurism from three theoretical angles, we found and traced biographies of those individuals who: 1) actively participated in discussion about radio communication through correspondence, subscription to journals, and publications; 2) expressed their individual involvement and passion towards the technology, instead of a professional interest, such as that of a a Marconi Company operator; 3) shared specific technical knowledge and culture. Several cases of radio amateurs were discovered during the archival research, and three are discussed in detail in this paper: Albin Belar from Ljubljana, then in the Austro-Hungarian Empire; Luis Cirera de Terré from Barcelona, Spain; and Jean Abelé from Antoing, Belgium. They passionately experimented with radio technology for several decades, from the years of the technogy's initial evolution to the epoch of the established radio industry.

At first sight, the main accomplishments of all three persons lay in other fields, but a deeper analysis show a significant contribution to radio history. Albin Belar was an outstanding specialist in seismology: he was founder of the first modern seismological station in Europe, which remained in operation up until 1919, and was frequently invited to seismological congresses and to the openings of new modern seismological stations in the Austro-Hungarian Empire (Lee et al. 2003: 1432). Luis Cirera de Terré was a second-generation medical doctor with a particular focus on electrotherapy, which he claimed was indispensable to every medical professional (Enrich 1993: 65; Browne 1933). Jean Abelé is known for his major accomplishments in philosophy and religion: as a Jesuit, he edited and published several philosophical manuscripts that raised questions about the construction of the universe (Platzgummer 2001; Abelé/Malvaux 1954).

Surprisingly, all these vastly different personalities, representing seismology, medicine, and philosophy respectively, shared a passion for radio. The records of their experiments were found in different telecommunication archives, and they also shared their expertise and experience with the ITU. Wireless accompanied their personal growth, although it was usually obscured in the background of other activities. Albin Belar recognized the great potential of

radio technologies for seismology, which he explained in numerous articles on the use of meteorological reports and time signals in seismology. Luis Cirera de Terré was experimenting with radio waves in medicine, and became one of the first radio pioneers in Spain, operating from Barcelona already in 1904. Jean Abelé applied his knowledge of the radio during his mobilization in the First World War in the radiogoniometric service, which measured the direction from which radio waves came. After the war, he established a laboratory where he worked on inventing and patenting several radio devices.

In different ways, each was involved in transnational communication about radio technology. In 1913, all of them were receiving the ITU Journal, and exchanged correspondence with the ITU. Luis Cirera de Terré appears only a few times in the ITU records (ITU Archives 1913a, №69; 1913c, №322), Jean Abelé wrote to the ITU when he was in Antoing as a student (ITU Archives 1912, №352, 353), and Albin Belar was a regular subscriber and correspondent (e.g. ITU Archives 1911a, №14; 1911b, №409; 1911c, №135, 137, 143; 1912a, №95, 100, 272; 1913a, №12-13; 1913b, №87, 97, 114, 692; 1913c, №84). None of them limited their inventions to the local level but were involved in different ways with different levels of participation into the transnational network that received the information about political decisions, statistics and news about new inventions.

Participating in dialogue about the latest inventions in radio, they experimented with the technology and shared knowledge with colleagues in their own field of professional expertise. In so doing, they mediated the knowledge about radio technology to different social and professional groups on the national and local level. Albin Belar widely used radio technology to obtain information required for calibrating seismographs and taught other seismologists this technique in his public speeches and publications at the international congresses. Luis Cirera de Terré explored the use of radiology on a human body and shared the latest information in this field in his publications. Even for Jean Abelé, the interest in radio technology was constantly present in his works on physics and philosophy. (Platzgummer 2001) Thanks to their work, more and more people familiarized themselves with radio technology.

Moreover, these amateurs re-invented and re-appropriated radio technology by making several important inventions in the radio field. Albin Belar is known, together with Baron Codelli, for inventing a wireless receiver for accurate time signals applied in seismological research (1910), and as well as for launching the first radio programs in the Slovene language. Dr. Luis Cirera de Terré is known as the first radio pioneer in Barcelona for managing to send a signal to Valencia with crystal receiver in 1913, and in 1929, he served as the President of the first Congress of Ham Radio in Spain. Working in his modest laboratory, Jean Abelé patented several inventions, such as a device for receiving and amplifying high-frequency electric oscillations (1924) and a receiver for radio-telegraphy and radio-telephony (1926).

Overall, it is clear that these radio hobbyists were involved in the discussion about radio technology, followed recent news by subscription to the international journals, exchanged knowledge with other hobbyists through publications and correspondence, and mediated their knowledge to the community and general public by applying the technology in their everyday lives before the First World War. In so doing, they re-invented and re-appropriated the technology, facilitated the acquaintance with the technology by inventing new devices and uses of the technology, and consequently reshaped the whole notion of technology.

Conclusion

This paper has demonstrated how a transnational approach to radio history helps to identify the radio hobbyists that started exploiting radio technology widely before the First World War and shared knowledge about their radio experiments and achievements with a wider audience. The analyses of a corpus of international and national archival documents allowed us to identify new actors, who operated transnationally and experimented with radio.

The case studies show that European radio amateurism began not in the 1920s with the establishment of national institutions and societies, but was preceded by a longer and more nuanced history. These three names – Albin Belar, Luis Cirera de Terré and Jean Abelé – are relatively new to radio history. However, they reshaped the cultural understanding of radio technology and suggested new uses of radio. The influence of these radio hobbyists had previously been captured only fragmentarily in the other fields, but here it fruitfully extends the national frameworks of radio history. This research enriches national histories of radio not only by bringing new actors into view, but also the unforeseen uses of radio technologies in seismology, medicine, and even philosophy. A transnational approach helped to show that achievements and experiments of radio amateurs in the 1910s went beyond any national history of radio broadcasting.

The evidence that amateurs existed before the foundation of national institutions in the 1920s, and long before the First World War, significantly enriches our understanding of radio history. It shows that the significant rise of radio broadcasting in the 1920s was not a revolutionary consequence of the First World War, but should be considered as a logical evolution of a medium. Hobbyists pushed development of the radio technology forward, appropriated it, and invented new uses, followed the international political developments, and passed these on to their professional or local communities already in the 1910s. By inventing new applications of radio signals to their various fields, amateurs introduced the radio into everyday life and made ordinary people see it as a reliable and even indispensable medium.

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