Studying "Radio Machete": Towards a Robust Research Programme

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Abstract

The role played by the media throughout the Rwandan Genocide has justifiably attracted substantial attention from scholars. Since 1994, the increasing availability of transcripts of radio broadcasts online has helped produce a rich and fruitful body of research into the extremist propaganda of pre-, early- and late-genocide Rwanda. Through constructive engagement with the existing literature, we identify four common limitations that characterise studies to date: the tendency to solely analyse the broadcasts of Radio Télévision Libre des Mille Collines (RTLM), inconsistent/convenient sampling from mismatched databases, a reliance on translations, and a lack of effort to design valid and reliable methods. By

examining these methodological shortcomings and identifying solutions for each, this reflection argues that efforts to document the role of the radio in the Rwandan genocide are far from over and seeks to enhance future research into extremist communications both in the Rwandan case and further afield.

This reflection seeks to identify the methodological shortcomings usually characterizing research on radio broadcasts during (and prior to) the Rwandan genocide, in order to pave the way for a more rigorous and systematic research programme on the topic. While the existing literature has proved fruitful in many ways and has displayed an increasing awareness of taking research design seriously, we outline a series of recurring methodological problems that continue to limit our understanding of radio's influence on the genocide and advance several potential solutions. Addressing these issues matters far beyond the Rwandan case: with emerging talks of an international tribunal for ISIS officials including media operatives,[1] and in the midst of booming extremist online communications, it is important to identify common methodological pitfalls associated with research on violent political actors' propaganda. To be sure, a richer understanding of the Rwandan case is critical to fully understanding the role of communication in inciting violence.

The role of the radio – Radio Télévision Libre des Mille Collines (RTLM) in particular – in accompanying, encouraging, triggering, or legitimizing violence in the build-up and implementation of the Rwandan genocide has attracted considerable attention from scholars, both in the immediate aftermath of the genocide and following the 2003 verdict of the famous "Media Case."[2] As Paluck already summed up ten years ago,[3] "the case for radio's culpability in Rwanda's 1994 genocide is well documented." We suggest, however, that the effort to document the role of the radio in the Rwandan genocide is not yet over and would gain from adopting a more rigorous and systematic approach to studying radio transcripts. Specifically, we expose four lingering problems characterising, to varying extents, existing studies: a bias towards examining RTLM, while largely ignoring Radio Rwanda; a tendency to analyse convenient samples; a neglect of broadcast transcripts in Kinyarwanda and an overreliance on translations; and a limited array of content analysis techniques conducted and usually implemented below standard levels of reliability and validity. These four shortcomings are particular instantiations of broader and frequent methodological issues such as convenience sampling or insufficient validity and reliability of constructed measures. Identifying these shortcomings should be seen as a constructive, not destructive endeavour. Rather, we acknowledge that these problems, which are closely interconnected, can mainly be explained by a series of technical difficulties detailed below that can now be overcome along the guidelines we put forward. We do not necessarily make the claim that addressing these methodological concerns would lead to significantly different results, although we explore this possibility at various points in the text and in the conclusion. Rather, our

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[1] See e.g. *Financial Times*, "International tribunal for Isis offers route to justice," 28 May 2019, available at https://www.ft.com/content/eab4e07e-7e1a-11e9-81d2-f785092ab560 (last accessed 17 June 2019).

[2] The ICTR found RTLM's Ferdinand Nahimana and Jean Bosco Barayagwiza "guilty of genocide, conspiracy to commit genocide, direct and public incitement to commit genocide and persecution and extermination as crimes against humanity" (alongside Kangura magazine's founder and chief editor Hassan Ngeze).

[3] Elizabeth Paluck, "Reducing Intergroup Prejudice and Conflict Using the Media: A Field Experiment in Rwanda," *Journal of Personality & Social Psychology* 96, no. 3 (2009): 576.

stance is a principled one: we stress the importance of robust, transparent and replicable methodology when it comes to building cumulative scientific knowledge.

We proceed in five parts. First, we review existing studies focusing on radio and the Rwandan genocide in a way that stresses their contribution to this topic but also highlights the limitations of their research designs. Then, the following four sections build on this review, each dedicated to one recurring limitation and its potential solution.

The Existing Literature

The literature on the genocide in Rwanda is substantial – with a significant subset focusing on the role of radio propaganda – and thus our aim is not to review this literature in its entirety. Instead, we focus on empirical studies that directly analyse the content of radio broadcasts – **Table 1** at the end of this section lists these studies and their main methodological characteristics. Each of the reviewed studies added important insights regarding the role of radio in the Rwandan genocide; far from claiming that they ought to be discarded, we rather expose a series of methodological limitations that they present (to varying degrees) in order to situate their findings and useful methodological standards for assessing future research on the issue. As we explain in the next sections, there are valid reasons why these methodological shortcomings exist: they result from challenges inherent to the data at hand, and several issues were impossible to solve given the timing of the reviewed publications. Yet, as we also show, it is now possible to overcome many of these challenges.

Much of the background knowledge upon which specialized studies of Rwandan hate radio builds comes from two major pieces of work published in the years directly following the genocide. First, Chrétien's and colleagues' seminal work *Rwanda: les Médias du Génocide*[4] provided a detailed documentation of the evolution of extremist print and radio propaganda in the run up to, and during, the genocide. In this publication, Jean-Pierre Chrétien and colleagues spoke of two predominantly used tools during the genocide: "one very modern, the other less so […] the radio and the machete, the former for giving and receiving orders, the latter to carry them out!"[5] This emphatic assertion denotes the importance that was immediately attributed to the radio as a means of coordinating the genocide. A leading scholar of the Great Lakes region, Chrétien would later provide expertise for both the ICTR and the important inquiry conducted by the Belgian Senate. Second, the exhaustive study conducted by Alison Des Forges for Human Rights Watch[6] provided what is still one of the most comprehensive overviews of the genocide, and included a detailed analysis of the role of the radio in "delivering the message of hate directly and simultaneously to a wide audience."[7]

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[4] Jean-Pierre Chrétien, Jean-François Dupaquier, Marcel Kabanda, and Joseph Ngarambe, *Rwanda: Les Medias du Genocide* (Paris: Karthala, 1995).
[5] Chrétien, Dupaquier, Kabanda, and Ngarambe, *Rwanda*, 191.
[6] Alison Des Forges, *"Leave None to Tell the Story:" Genocide in Rwanda* (New York: Human Rights Watch, 1999)
[7] Des Forges, *"Leave None to Tell"*, 67.

In between these two cornerstone volumes, Michael Chege's 1994 article explicitly highlighted the impact of the radio on the dynamics of the genocide and stressed the "key role played by intellectuals," the "elite group," running RTLM and the Kangura magazine.[8] Shortly before the publication of Des Forges' opus, Christine Kellow and Leslie Steeves offered the first direct examination of the content of radio broadcasts.[9] Acknowledging that their work was "preliminary" and constituted "early steps,"[10] they conducted a qualitative analysis of 74 RTLM and Radio Rwanda tapes received from the NGO Reporters Sans Frontières, which was supporting Chrétien's volume. These tapes, initially translated into French, were further translated to English to allow for Kellow and Steeves' work and thus textual content was a translation of a translation.

Following this first wave of studies, the 2000s witnessed the publication of a second series of studies, probably prompted by the "Media Case" which started in 2000 and ended in 2003. In 2004, Lee Ann Fuji argued that RTLM's main role was to diffuse a "genocidal norm" across society,[11] yet this contribution did not rest on a detailed empirical examination of radio transcripts. The same year, Darryl Li claimed that RTLM created a "dynamic relationship with and among listeners,"[12] and built on pre-existing ideological discourses to encourage listeners to take part in the genocide. His qualitative approach, which focused on RTLM, did not explain which transcripts had been considered to reach that conclusion, nor how the text had been analysed. Allan Thompson's essential edited volume on *The Media and the Rwanda Genocide*[13] contained a series of contributions examining various aspects of Hutu génocidaires' propaganda. Among these, Mary Kimani's chapter,[14] which showed the importance of RTLM on-air personalities in disseminating inflammatory statements, constituted what we believe to be the first attempt to systematically quantitatively categorize the tapes and their linguistic content across a series of dimensions. She explained that she gathered 99 broadcast tapes from the International Monitor Group in addition to 100 other tapes from a CD-ROM database shared by the ICTR prosecutor – this therefore constitutes the first use of ICTR transcripts, opening up an important area of research. However, Kimani only analysed the 72 transcripts written in English and French. Other contributions in Thompson's volume, like Des Forges',[15] provided useful background information and put forward excellent insights but did not systematically examine radio transcripts.

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[8] Michael Chege, "Africa's Murderous Professors," *National Interest* 46 (1996): 32.
[9] Christine Kellow and Leslie Steeves, "The Role of Radio in the Rwandan Genocide," *Journal of Communication* 48, no. 3 (1998): 107-128.
[10] Kellow and Steeves, "The Role of Radio," 111.
[11] Lee Ann Fuji, "Transforming the Moral Landscape: The Diffusion of a Genocidal Norm in Rwanda," *Journal of Genocide Research* 6, no. 1 (2004): 99-114.
[12] Darryl Li, "Echoes of Violence: Considerations on Radio and Genocide in Rwanda," *Journal of Genocide Research* 6, no. 1 (2004): 10.
[13] Allan Thompson (ed.), *The Media and the Rwanda Genocide* (London: Pluto Press, 2007).
[14] Mary Kimani, "RTLM: The Medium that Became a Tool for Mass Murder," in *The Media and the Rwanda Genocide*, ed. Allan Thompson (London: Pluto Press, 2007), 110-124.
[15] Alison Des Forges, "Call to Genocide: Radio in Rwanda, 1994," in *The Media and the Rwanda Genocide*, ed. Allan Thompson (London: Pluto Press, 2007), 41-54.

It is in this context that efforts to more rigorously engage with the question of the radio's impact emerged. Scott Straus (2007) first sought to overcome what he identified as two common methodological weaknesses of existing studies: their use of what he calls "nonsystematic content analysis," and their absence of consideration for "questions of exposure and reception."[16] His push for a more systematic, theory-based analysis using more reliable and rigorous techniques for content analysis was a much-needed step. To some extent, however, Straus himself fell short of his own standards: while his multi-methods approach was highly original and certainly represented an evolution from past approaches, his content analysis of radio broadcast only considered 34 translated transcripts and rest on insufficiently justified inclusion criteria. A further advance in the area of research design happened with Omar Shahabudin McDoom's multi-methods investigation of the interlocking dynamics of fear, intergroup polarization, and material opportunities.[17] Alongside interviews and surveys, McDoom used a series of transcripts of RTLM broadcasts coming "from the International Monitor Institute, a non-profit organization commissioned by the International Criminal Tribunal for Rwanda to translate its broadcasts."[18] Although he notes that this corpus amounts to more than 400,000 words, he does not detail which tapes were selected, and he admits that the transcripts only "covered 55 days, or 15.3 percent of RTLM's 361 days of broadcasting."[19] The study implements a straightforward search of theoretically relevant words (like "inkotanyi" or "inyenzi" – cf. below) that led to frequencies statistics.

A series of studies followed, further enhancing our understanding of the complex dynamics involved in radio propaganda during the Rwandan genocide. Studying 86 transcripts (only English translations) of Radio Rwanda and RTLM, Elizabeth Baisley offered a fine-grained, qualitative analysis of the different tactics of othering used by radio broadcasters, showing how they drew upon "multiple constructions of Hutu and Tutsi identities from many periods in Rwanda's history."[20] The same year, Brittnea Roozen and Hillary Shulman also focused on linguistic processes of othering.[21] Although they claim that there are "a total of 360 transcripts in all three languages" (Kinyarwanda, French, English), they concentrated on 59 RTLM transcripts (only English translations) provided by the Rwandan government-run Genocide Memorial Documentation Centre, and followed a straightforward word counting strategy very similar to McDoom's. Although not focusing on

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[16] Scott Straus, "What Is the Relationship between Hate Radio and Violence? Rethinking Rwanda's 'Radio Machete'," *Politics & Society* 35, no. 4 (2007): 615. This neglect of listeners' agency was already explicitly highlighted in Li's "Echoes of Violence."

[17] Omar Shahabudin McDoom, "The Psychology of Threat in Intergroup Conflict. Emotions, Rationality, and Opportunity in the Rwandan Genocide," *International Security* 37, no. 2 (2012): 119-155.

[18] McDoom, "The Psychology of Threat," 139.

[19] McDoom, "The Psychology of Threat," 139.

[20] Elizabeth Baisley, "Genocide and Constructions of Hutu and Tutsi in Radio Propaganda", *Race & Class* 55, no. 3 (2014): 39.

[21] Brittnea Roozen and Hillary Shulman, "Tuning in to the RTLM: Tracking the Evolution of Language Alongside the Rwandan Genocide Using Social Identity Theory," *Journal of Language & Social Psychology* 33, no. 2 (2014): 165-182.

broadcast content per se, David Yanagizawa-Drott's evaluation of link between radio coverage and levels of violence need to be mentioned as it sheds new light on the issue of RTLM's real impact during the genocide.[22]

Finally, a recent doctoral thesis from Olov Simonsson channelled qualitative content analysis through an NVIVO-type software (MAXQDA), with the idea to evaluate the role of religion in RTLM broadcasts.[23] Simonsson's effort was also the very first, long overdue study that considered transcripts in Kinyarwanda (and that includes Kangura magazines in the overall corpus). Highlighting the difficulty of working with Kinyarwanda texts, and explaining the problems resulting from the existence of several mismatched databases, he declared using "146 English and French documents, and 159 documents in Kinyarwanda, amounting to a total of 305."[24]

As we see, the literature on the role of radio in the Rwandan genocide has gradually enriched its methodological toolbox, following a growing awareness of its shortcomings. The following paragraphs seek to further enhance this evolution by highlighting four enduring methodological problems and offering potential solutions.

Authors, years	Number of tapes analysed	Radio station	Language of tapes analysed	Sampling rules	Quantitative / Qualitative approach	Method
Kellow & Steeves, 1998	74	RTLM and Radio Rwanda	English (translated from French translations)	Work with all transcripts available at that time	Qualitative	"Macrotextual narrative analysis"
Fuji, 2004	Not stated	RTLM	Not stated	Not stated	Qualitative	Not stated
Li, 2004	Not stated	RTLM	Not stated	Not stated	Qualitative	Not stated
Kimani, 2007	72	RTLM	English and French	Works with all the 56 RTLM tapes in English/French from the International Monitor Group database, plus 16 from the ICTR (sampling rule not stated)	Quantitative	Classification of broadcasts across 6 dimensions
Straus, 2007	34	RTLM	English	Works with "the only translated ones [tapes] made available"	Quantitative, with additional qualitative illustrations	Single word counts (occurrence frequency statistics). Part of

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[22] David Yanagizawa-Drott, "Propaganda and Conflict: Evidence from the Rwandan Genocide," *Quarterly Journal of Economics* 129, no. 4 (2014): 1947-1994.

[23] Olov Simonsson, *God Rests in Rwanda: The Role of Religion in the 1994 Genocide in Rwanda* (Uppsala: PhD thesis, 2019). Available at http://www.diva-portal.org/smash/get/diva2:1305469/FULLTEXT01.pdf (last accessed 18 June 2019).

[24] Olov Simonsson, *God Rests in Rwanda*.

						a broader multi-methods effort.
McDoom, 2012	Not stated	RTLM	Not stated	Not stated	Quantitative	Single word counts (occurrence frequency statistics). Part of a broader multi-methods effort.
Baisley, 2014	86	RTLM and Radio Rwanda	English	Works with all English translations made available on the MIGS database	Qualitative	Not stated
Roozen & Shulman, 2014	59	RTLM	English	Not stated	Quantitative	Single word counts (occurrence frequency statistics)
Simonsson, 2019	305	RTLM	English and French, Kinyarwanda (yet mostly used English translations)	No sampling: works with full corpus	Qualitative, with additional word counts	Concepts and categories coding with MAXQDA

Table 1: Empirical studies of Rwandan radio broadcasts content, with major methodological characteristics.

First Shortcoming: RTLM Bias

The first shortcoming that appears from the above review is the overrepresentation of studies analysing RTLM broadcasts relative to those from Radio Rwanda. Although some do acknowledge the part that Radio Rwanda also played in fuelling the virulent rhetoric and consequently include Radio Rwanda tapes in their corpus,[25] the station is generally presented as insignificant in comparison to the broadcasts of RTLM which are deemed "by far the most influential."[26] The role of the "more restrained"[27] Radio Rwanda is neglected and, at times, completely ignored.[28]

To a certain extent, this bias is understandable. RTLM was, after all, specifically founded in April 1993 by Hutu hard-liners in order to counter Radio Rwanda's then non-partisan line, and in reaction to the Arusha Accords, which were signed at the very same time RTLM started broadcasting.[29] RTLM was part of a deliberate strategy to polarize the Hutu population and relay government orders to local supporters – radios were even distributed for free during the months leading to the genocide to

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[25] Kellow and Steeves, "The Role of Radio"; Des Forges, *"Leave None to Tell"*; Baisley, "Genocide and Constructions of Hutu and Tutsi."
[26] Kellow and Steeves, "The Role of Radio," 117; also Chege, "Africa's Murderous Professors;" Li, "Echoes of Violence."
[27] Des Forges, *"Leave None to Tell"*, 24.
[28] As for example in Roozen and Shulman, "Tuning in to the RTLM" and Straus, "What Is the Relationship between Hate Radio and Violence?"
[29] Des Forges, *Leave None to Tell*, 79.

maximize reach.[30] The station was part of a broader propaganda network, including Kangura (from which it sometimes directly took content), and quickly became "the most popular station in the country during the genocide"[31] as it was more informal and lively[32] and as it started "using Radio Rwanda's airwaves more and more, so Radio Rwanda was broadcasting less and less."[33] The prosecution of the "Media Case" itself focused solely on RTLM, which was considered to constitute, with Kangura, the "common media front", the "media mouthpieces for the CDR's Hutu Power fusion of politics with ethnicity, of civilians with combatants."[34] In sum, the consensus holds that RTLM was the most important radio in genocidal dynamics. As Chege's early comment already put it, "the most virulent and effective incitement to hatred and violence […] was repeatedly broadcast by Radio/Television Libre des Mille Collines."[35]

However, that RTLM was the most extreme and at one point most popular does not provide a sufficient justification for ignoring Radio Rwanda in scholarly work. First, this practice amounts to a selection of the dependent variable: that is, focusing on the case that most fits the argument. Studies that ignore Radio Rwanda seem to be premised on an implicit assumption that listenership was exclusive to one station, and that RTLM was the main one. A more rigorous analysis of the role of radio in the genocide needs to incorporate the countervailing influence of more "moderate" or "official" stations and thus provide a more nuanced account of the dynamics of extremist propaganda.

Second, and more substantially, the two radios were actually closely connected in spite of their supposed split: they regularly emitted in the same frequencies, had back and forth personnel transfers, and RTLM used equipment offered by Radio Rwanda.[36] Chrétien and associates' seminal study detailed the synchronism of the two stations, noting for instance that the popular music of RTLM was broadcast at a time that did not interfere with Radio Rwanda transmissions,[37] or that as RTLM gained increasing notoriety, it was fully supported by the state media outlet.[38] Moreover, the more moderate figures working at Radio Rwanda gradually left, leading to a situation whereby when the genocide began the two radios aired similarly extremist content. While stressing the specific identities of each stations, Des Forges simultaneously highlights their joint responsibilities: authorities, she noted, "used RTLM and Radio Rwanda to spur and direct killings," "relied on both radio stations to incite and mobilize, then to give specific directions for carrying out the killings," and "used both radio stations to give instructions and orders to listeners."[39]

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[30] Des Forges, *"Leave None to Tell"*, 77.
[31] Li, "Echoes of Violence," 9.
[32] Des Forges, "Call to Genocide," 44.
[33] Kellow and Steeves, "The Role of Radio," 118.
[34] Catharine MacKinnon, "Prosecutor v. Nahimana, Barayagwiza, & Ngeze. Case No. ICTR 99-52-T," *American Journal of International Law* 98(2) (2004), 324.
[35] Chege, "Africa's Murderous Professors," 34.
[36] Des Forges, *"Leave None to Tell"*, 81.
[37] Chrétien, Dupaquier, Kabanda, and Ngarambe, *Rwanda*, 69.
[38] Chrétien, Dupaquier, Kabanda, and Ngarambe, *Rwanda*, 78.
[39] Des Forges, "Call to Genocide," 49.

The obvious solution to bias in favour of RTLM is for future research to jointly analyse RTLM and Radio Rwanda transcripts. The large number of Radio Rwanda transcripts available to researchers not only provides valuable insight into the conditions that facilitated the mass killings, but also allows for a research agenda that recognizes the dynamic relationship between Radio Rwanda and RTLM. Neglecting Radio Rwanda means missing the broader picture of broadcasting's role in the violence. Baisley's (2014) article was a first step in acknowledging this relationship, illustrating how the combination of deep-rooted ties with the past and wider transmission range render the transcripts from Radio Rwanda broadcasts equally relevant for study alongside those of RTLM. More research is needed in this area.

Second Shortcoming: Differing Databases and Inconsistent Sampling

The second issue arises from the use of problematic sampling rules; that is, the use of small or non-rigorously selected sets of tapes from the entire corpus. In most cases, sampling rules are simply not explained. To be fair, pre-ICTR studies could hardly do better than they did: no large corpus was yet available, which explains why many relied on the same set of broadcasts gathered by Reporters Sans Frontières and initially used by Chrétien and colleagues in 1995.

This state of affairs, however, no longer need be the case. Several databases exist that provide extensive corpuses of the transcripts from both radio stations: the Aegis Trust's Genocide Archive Rwanda (GAR)[40] hosted by the Kigali Genocide Memorial displays 316 transcripts, the Montreal Institute for Genocide and Human Rights Studies (MIGS)[41] hosted by the University of Concordia lists 443, and the ICTR archives[42] website itself offers 236. Compared to these numbers, the samples employed in much of the published research are quite small, even when they only include RTLM tapes. Small samples are not necessarily problematic, so long as representativeness is carefully considered and uncertainty is appropriately communicated. Yet, virtually all post-ICTR studies[43] rely on "convenience samples" – that is, non-random samples whose selected items "meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study."[44]

There are a number of reasons for the prevalence of convenience samples. First, there are several difficulties associated with analysing transcripts in Kinyarwanda (we address this thorny issue in the next section). Second, the databases mentioned above do not offer a consistent set of transcripts and a complete picture of the available data is lacking. When examining these databases' contents, we noticed an added layer of complexity: the largest database (MIGS, which is also arguably the clearest

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[40] http://genocidearchiverwanda.org.rw/index.php/Category:Audio_Transcripts.
[41] http://www.concordia.ca/research/migs/resources/rwanda-radio-transcripts.html.
[42] http://www.irmct.org/en/archives.
[43] Simonsson, *God Rests in Rwanda*, constitutes a notable exception.
[44] Ilker Etikan, Sulaiman Abubakar Musa, and Rukayya Sunusi Alkassim, "Comparison of Convenience Sampling and Purposive Sampling," *American Journal of Theoretical and Applied Statistics* 5, no. 1 (2016): 2.

and easiest to work with) does not actually provide a comprehensive collection of all the transcripts available online. Indeed, there are transcripts that appear only on the smaller GAR (n=66) and ICTR websites (n=36). Similarly, the majority of Radio Rwanda transcripts appear solely on the MIGS website. The scholar is thus left with the daunting task of comparing each transcript across the three databases, an exercise made even more onerous by the fact that a variety of different classifications have been used by the ICTR and other organizations to categorize and number the transcripts (some are done by cassette number, others have an evidence number stamped in the corner and some have a specific file name), which means that the same file could be archived several times under multiple identifications. Some translations receive different identification numbers than their original copy, and some translated transcripts do not even have an original available online. Moreover, across the different databases each transcript is categorised in a slightly different fashion. It is therefore understandable that none of the existing studies has conducted such a time-consuming task, and that Simonsson, the only scholar who attempted to navigate this labyrinth, struggled "to give a precise account of the number of transcribed broadcasts."[45] The result is that different researchers have essentially been analysing different files yet presenting them simply as *the* "transcripts" or "tapes."

The solution to this problem is simple in principle, yet complex in its implementation: it is for the scholarly community to provide a clear list of the existing transcripts that are, to date, publicly available and where to find them in ways that avoid duplication. This can only be done through a manual sift of the three databases, whereby each transcript would have been cross-referenced with its date, cassette number and language to see which were unique or duplicated (some transcripts may be unique to one database, but duplicated in the others). Scholars could then use this list to gather a much fuller sample or conduct a rigorous sampling procedure.

We have done this extensive analysis of the available data and provide the scholarly community with the full list as an online appendix accompanying the present paper.[46] The list is divided into two sections, one for the files in Kinyarwanda and one for those in French and English, and provides meta-data including the transcript IDs, cassette numbers, date of broadcast, and the online database in which the relevant transcript is available. The file also provides indicators for the intricacies that we mention below (for example linking each translated tape to its original (if available), notifying if a Kinyarwanda file has a translation, or specifying when a transcript is in fact a summary). The first section of the list provides details of the 365 transcripts in Kinyarwanda that are available across all three databases. The details of 107 English and 143 French files are also provided in the list. Although most of these files are translations, it must be noted that some are direct transcriptions of the few broadcasts made in French, whereas others, as noted previously, are simply excerpts of a much longer original broadcast. For all three languages, the notes column in the list is used to flag some recurring

[45] Simonsson, *God Rests in Rwanda*, 72.
[46] This dataset is also available on Github: https://github.com/traviscoan

issues, such as discrepancies in cassette numbers, missing pages or incorrectly labelled files. Of the total 365 Kinyarwanda files, translations for 223 of them could not be located online. A summary of this list is presented in the below **Tables 2 and 3**. We invite scholars to use but also critically engage with this list, which we see as a strong basis for a collective effort to allow for better sampling procedures in the field.

Station & Database	No. with available translation	No. without translation	Total
Joint RTLM and RR		**1**	**1**
MIGS	0	1	1
Radio Rwanda	38	**75**	**113**
Genocide Archives	0	1	1
MIGS	38	74	112
RTLM	104	**147**	**251**
Genocide Archives	34	59	93
ICTR	0	34	34
MIGS	25	30	55
MIGS; Genocide Archives	45	22	67
MIGS; Genocide Archives; ICTR	0	2	2
Grand Total	**142**	**223**	**365**

Table 2: Summary of the Kinyarwanda transcripts

Station & Database	English	English and French	French	Total
Joint RTLM and RR	**1**		**1**	**2**
MIGS; Genocide Archives; ICTR	1			1
MIGS; ICTR			1	1
Radio Rwanda	**44**	**1**	**36**	**81**
MIGS	44	1	35	80
MIGS; ICTR			1	1
RTLM	**62**	**1**	**106**	**169**
Genocide Archives	8	1	15	24
Genocide Archives; ICTR	17		29	46
ICTR	5		10	15
MIGS			4	4
MIGS; Genocide Archives	1			1
MIGS; Genocide Archives; ICTR	22		28	50
MIGS; ICTR	9		20	29
Grand Total	**107**	**2**	**143**	**252**

Table 3: Summary of the French and English transcripts

Third Shortcoming: Neglect of Kinyarwanda, Reliance on Translations

To date, only one scholar has systematically looked at original transcripts in Kinyarwanda: Simonsson.[47] As our review showed, all others have only worked on translated broadcasts, and in some cases on broadcast sections where the reporters spoke in French. In a few cases, analyses have even relied on translations of translations. While this was the only possible strategy as a first step when transcripts were not easily available, establishing a stronger research programme requires considering the files in Kinyarwanda, or at least acknowledging and addressing the issue of translation. While as explained below we are still far from offering a fully satisfying solution to this particular issue, we still identify two main reasons why it ought to be addressed.

First, and as evidenced by our list, transcripts in Kinyarwanda without an available translated counterpart constitute a substantial part of the overall corpus. There are no less than 223 such transcripts, which is far from negligible given that the number of files in all three languages online (once exact duplicates are removed) totals 617, and because these 223 untranslated transcripts span across the entire pre/mid/post genocide period. Moreover, not all the translated files are actual transcripts: it is not uncommon for the PDF to simply be a one-page scan of the key excerpts translated into English or French, at times missing long parts of the original broadcast in Kinyarwanda, or even a depiction of the tapes' content (in the form of "X says this, Y explains that, …"). This is obviously problematic for doing a nuanced discourse analysis, as these excerpts have been highlighted to be a particularly pertinent piece of extremist rhetoric whereas the rest of the transcript is neglected (in some cases, extremist passages are bolded; in others, the translator ignores passages dubbed "not important"), leading the scholar to face a particularly "condensed" extremist prose. Using the original Kinyarwanda transcripts would evidently avoid this pitfall. Only Roozen and Shulman acknowledge this issue,[48] noting the presence in their sample of "special excerpts of especially condemning broadcasts that were submitted as evidence during the ICTR trials."

Second, the translation procedure followed by the ICTR (and, indirectly, by other organizations) may also produce misleading results. Given the amount of tapes, numerous translators have been employed, which inevitably produced inconsistencies in translation across broadcasts. Of the 93 transcripts listed as in French or English in the MIGS database, no less than 18 different translators are named (28 transcripts have no names). Among them, some translated 10 tapes, others only 1. Some only translated tapes dated before the genocide actually began, while others only worked on broadcasts from the end of the genocide. As a result of this procedure, simple word-count strategies, especially those that seek to expose chronologic variations, can end up being skewed by translation inconsistency effects. To be fair, the key words consistently being targeted by scholars – "inkotanyi" and "inyenzi" – appear at first sight to be consistently used in translated tapes as translators kept their original, untranslated form (there are some minor inconsistencies, however: "inyenzi" is for example

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[47] Simonsson, *God Rests in Rwanda*.
[48] Roozen and Shulman, "Tuning in to the RTLM," 172.

translated directly as "cockroach" in at least 3 of the English transcripts). However, the vast majority of the other words are subject to variation. Translation is always a work of interpretation, especially when some words can have multiple meanings, can be used as metaphors, or act as "codes" – a well-known dimension of genocidal language.[49] Additionally, several words can be used to refer to a single concept, and some terms, including the two keywords mentioned above, saw their meaning change across time from the pre- to the end of genocide, which could have led to translation variations. All these reasons why translations inevitably differ had already been highlighted in Rwigamba, Nkusi and Ruzindana's 1998 detailed sociolinguistic report on the uses of the Kinyarwanda language in génocidaires' media (written for the Office of the Prosecutor at the ICTR),[50] but have not yet been taken seriously. They observed, for instance, that the Hutus are regularly labelled "rubanda nyamwinshi" (the majority people) or "mwene sebahinzi" (the son of farmer), in addition to the more explicit "Hutu" / "Bahutu" labels, and that a word like "gukora," which literally means "to work," was sometimes but not always used to mean "to kill."

Because of these two families of problems, we suggest that further research on the content of RTLM and Radio Rwanda broadcasts ought to incorporate the Kinyarwanda transcripts and rest on an explicit strategy as to which documents are included or ruled out in the corpus (for instance, occurrence statistics cannot be calculated from a corpus that includes full translations alongside partial translations and/or translator's summaries). Working with Kinyarwanda, however, raises complex technical issues that are among those considered below, as well as a series of ethical issues which unfortunately cannot be unpacked here but are nonetheless significant (potential for re-traumatization, enduring political sensitivity of the topic, etc.). As a result, we do not claim to offer a clear and definitive solution to this specific shortcoming, but rather more modestly identify the contours of the problem, while we hope paves the way forward.

Fourth Shortcoming: Limited Methodological Diversity and Insufficient Attention to Issues of Validity and Reliability

Finally, only two content analysis methods are used by the studies reviewed above: quantitative word counts (with occurrence or frequency statistics) or qualitative analysis. We argue that the field would gain from implementing a wider range of research designs, which would not only bring new insights on this important empirical case but would also allow scholars to correct the current inattention to crucial questions on the validity and reliability of a chosen study design, some dimensions of what have been highlighted above.

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[49] For example Lynne Tirrell, "Genocidal Language Games," in *Speech and Harm: Controversies Over Free Speech*, ed. Shani Maitra and Mary Kate McGowan (Oxford: Oxford University Press, 2012), 174-221; Ben Mitchell, "Of Euphemisms and Euthanasia: The Language Games of the Nazi Doctors and Some Implications for the Modern Euthanasia Movement," *OMEGA - Journal of Death and Dying* 40, no. 1 (2000): 255-265.

[50] Balinda Rwigamba, Laurent Nkusi, and Mathias Ruzindana, "The Kinyarwanda Language: Its Use and Impact in the Various Media During the Period 1990-1994," *Report to the Media Team in the Office of the ICTR Prosecutor* (1998).

The most common form of content analysis on Rwandan radio broadcast is qualitative (see Table 1). Despite a number of strengths associated these rich, qualitative descriptions, Straus raised a number of concerns regarding seminal content analyses of radio broadcasts during (and prior to) the Rwandan genocide and called for a move away from what he refers to as "nonsystematic content analysis."[51] We share several of Straus' concerns. Specifically, research using qualitative approaches tend to describe transcripts with little explanation on the interpretation of categories and reading techniques, thereby making it difficult – if not impossible – to determine the replicability of published scholarship (see Simonsson's thesis for a recent exception). And while there is disagreement in the literature on what specific criteria ought to be used to assess the quality of qualitative content analyses, the overarching goals of validity and reliability (or replicability) are intimately linked to the broader of criteria of "trustworthiness" described in the qualitative literature.[52] Future scholarship employing qualitative content analysis should include details about the interpretation of categories, reading techniques chosen by the scholars, and pay close attention to the validity and replicability of reported findings.

Turning to quantitative designs, the most common approach tests hypotheses based on term frequency statistics.[53] This simple approach consists of choosing a word (e.g., "vigilant," or "kill") or a set of words commonly referred to as a "dictionary" (e.g., "kill" + "work" + "eradicate"), thought to capture some underlying construct (e.g. "inflammatory language"). Although dictionary-based approaches are highly reliable, Grimmer and Stewart suggest that they should be used with "substantial caution:" "scholars must validate their results. But measures from dictionaries are rarely validated. Rather, standard practice in using dictionaries is to assume the measures created from a dictionary are correct and then apply them to the problem."[54] As it stands, there is little (if any) discussion in the extant quantitative literature on the validity of using term frequencies to measure salient theoretical constructs, the limitations of using such measures (e.g., polysemy, content-dependent interpretation of words, etc.), the robustness of frequency-based measures to alternative sets of words, or the measurement error introduced by relying on frequency statistics. We suggest that scholars studying the radio tapes ought to take the steps needed to validate their dictionary-based approaches and to make these steps transparent to the reader.

But more than strengthening the two methods already used, we also suggest that scholars consider moving beyond qualitative readings and simple word counts or dictionary ratios to 1) employ well-established practices in quantitative content analysis – clearly articulated categories, multiple coders,

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[51] Straus, "What Is the Relationship between Hate Radio and Violence?," 615.

[52] Satu Elo, Maria Kääriäinen, Outi Kanste, Tarja Pölkki, Kati Utriainen, and Helvi Kyngäs, "Qualitative Content Analysis: A Focus on Trustworthiness," *SAGE Open* (2014).

[53] For example Straus, "What Is the Relationship between Hate Radio and Violence?;" Roozen and Shulman, "Tuning in to the RTLM."

[54] Justin Grimmer and Brandon Stewart, "Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts," *Political Analysis* 21, no. 3 (2013): 275.

and the reporting of suitable reliability statistics – and 2) explore the use of recent advances in computer-assisted approaches to content analysis in an effort to potentially improve validity without sacrificing reliability.[55] For instance, in terms of the latter point, one could employ a dynamic topic models to not only have a better sense of the context associated with a particular keyword, but also to understand how the words used to describe a particular of theme has (or has not) changed over time.[56] Overall, various unsupervised, supervised, and semi-supervised machine learning methods have been successfully adapted to the field of political communication and the literature on Rwandan radio coverage could benefit from fully exploring these alternative approaches.[57] One could also use linguistic/semantic network analysis to find and visualize prominent themes and significant patterns of words co-occurrence.

Yet, if we follow our previous recommendation to study transcripts in Kinyarwanda, implementing some of these techniques (such as linguistic/semantic networks, but also to a lesser extent simple occurrence statistics) can prove quite challenging, to say the least. While text-analysis software suites or packages for R or Python can now be geared to texts written in a range of different languages, Kinyarwanda is never one of them. The language's morphology rests on a logic of word construction and pluralization from rigid root stems with added prefixes, meaning that stemmers could be designed to allow for the techniques mentioned above. However, while the list of prefixes is limited, the stemmer would have to account for exceptions and the fact that some of them morph to accommodate the stem if it begins with a vowel or specific consonants (e.g. ku → gu or kw; tu → du). With more performant computational tools already available for complex stem-based languages such as Arabic, there is no major obstacle, in theory, for the development of such tools for Kinyarwanda, even though the demand that drives this kind of development might unfortunately not be sufficient. The groundwork has already been established by Muhirwe,[58] and comprehensive compendiums of Kinyarwanda grammar are available.[59]

Conclusions

Over the past 25 years, a fascinating and crucial research agenda has developed, focusing on the role of the media during the Rwandan genocide. Important studies have gradually refined our understanding of the key features of radio broadcasts and their importance in the dynamics of extreme violence that unfolded in 1994 in the tail of regional conflict and escalating local tensions. This body of literature, in spite of its many qualities, suffers from four recurring methodological shortcomings

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[55] Michael Alvarez, *Computational Social Science: Discovery and Prediction* (Cambridge: Cambridge University Press, 2016).

[56] Derek Greene and James Cross, "Exploring the Political Agenda of the European Parliament Using a Dynamic Topic Modeling Approach," *Political Analysis* 25, no. 1 (2017): 77-94.

[57] For an overview see Grimmer and Stewart, "Text as Data;" also Alvarez, *Computational Social Science*.

[58] Jackson Muhirwe, "Computational Analysis of Kinyarwanda Morphology: The Morphological Alternations," *International Journal of Computing and ICT Research* 1, no. 1 (2007): 85-92.

[59] Alexandre Kimenyi, *A Relational Grammar of Kinyarwanda* (Berkeley: University of California Press, 1978).

that this paper aimed to identify: a bias in favour of RTLM, inconsistent/convenient sampling from mismatched databases, a reliance on translations, and the absence of sophisticated text analysis techniques. In line with our discussion of these problems, we put forward a series of guidelines for future research and offer a list of all available tapes, with the hope that these will enable the production of 25 more years of solid studies on the topic. Even though we abstain here from claiming that addressing the four methodological problems would significantly alter existing results, it nonetheless permeates from our exposé that following our guidelines could potentially add considerable nuance to the existing doxa, which is based on limited samples of the most extreme broadcast transcriptions. A more complex, multi-layered rhetoric – in terms of threat construction, in-/out-grouping, events presentation, or involvement of foreign actors – is likely to emerge, casting new light on the dynamics linking propagandist language and violence.

As argued above, such a renewed research programme could also provide a model for other similar endeavours, starting with the ISIS case, which in spite of an abundant literature seems to suffer from some of the same limitations (bias towards prominent magazines such as Dabiq or Rumiyah [away from lesser known outlets], focalization on English-speaking documents or translations at the detriment of Arabic propaganda, imperfect or opaque sampling, reliance on simple content analysis tools). Incidentally, it would also pave the way for a much needed comparative study of violent political actors' propaganda efforts.