

Rwanda: Who lit the fuse 30 years ago?

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7 April marked the 30th commemoration of the Genocide against the Tutsi in Rwanda.¹ Between April and July 1994, 75 % of the Tutsi minority in Rwanda was exterminated by extremists of the Hutu majority.² After three decades of investigations, most facts are well established, but dissidents and some academics still dispute the cause of the Genocide.

Attack against the Presidential aircraft

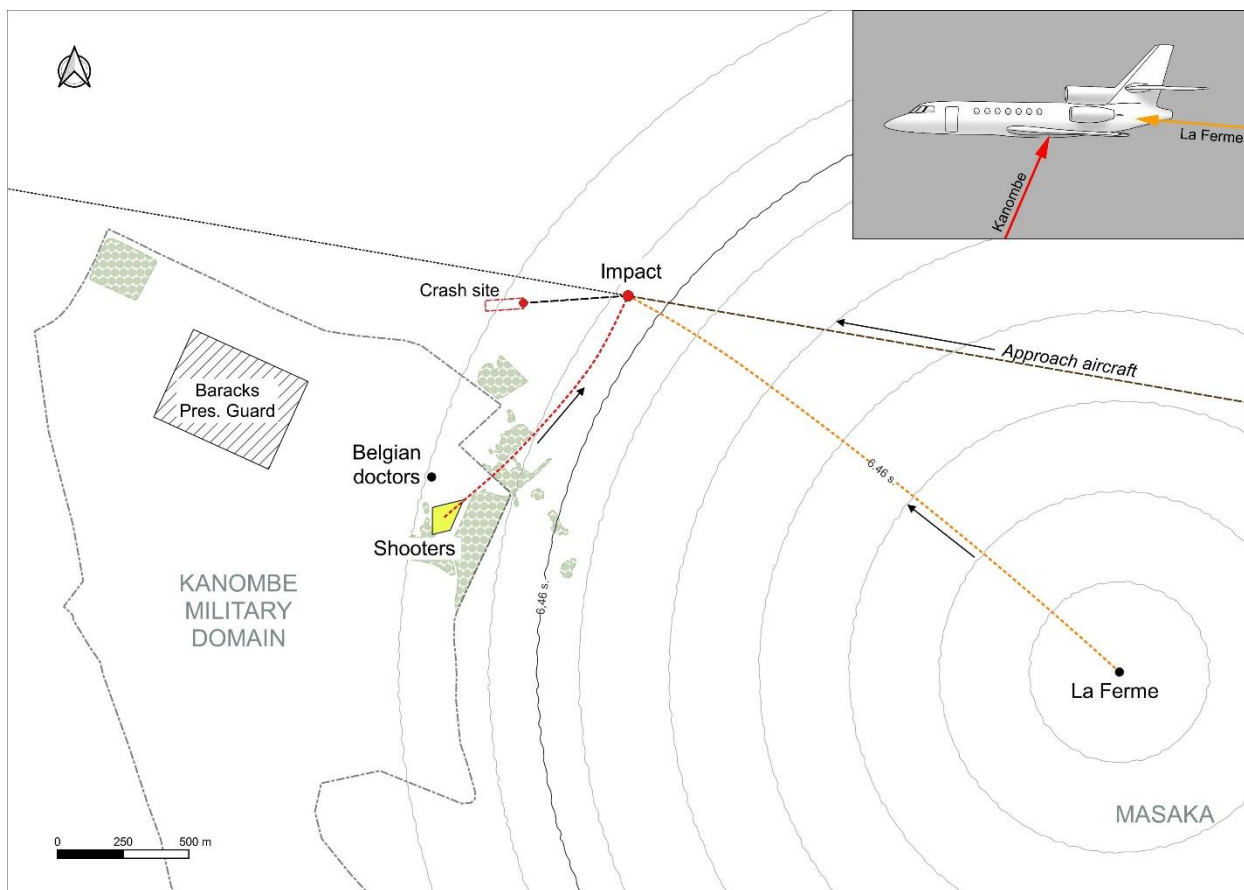
The most fiercely debated issue is the assassination of Juvénal Habyarimana, the late president who died on 6 April 1994 when his private jet was shot down over Kigali.³ The Genocide began shortly afterwards, indicating a link between these events. Some scholars suspect the assassins were Hutu extremists while others believe the Rwandan Patriotic Front (RPF) of current president Kagame was responsible.⁴ However, because the shooters were never identified, the question of culpability remains to some extent a matter of conjecture.

Over the years, several investigations were carried out, by magistrates from Belgium and France,⁵ parliamentary inquiries in those countries,⁶ and the Rwandan government.⁷ These efforts accumulated many witness statements that contradicted each other on essential points. A major obstacle in assessing the value of those investigations was the absence of proper forensic research.

Technical report

In 2010, the French judiciary decided to change this situation. Two investigating judges, Marc Trévidic and Nathalie Poux, brought together a group of specialised scientists attached to several French courts. In September 2010, they travelled to Kigali on a fact-finding mission.⁸ The elaboration of the data they collected was presented in January 2012 in a 338-page technical report,⁹ plus supplements containing sub-studies, pictures of visited locations and the plane wreckage, and technical drawings. In May 2013, additional research was published that determined whether the pilots had tried to avoid the missile.¹⁰ This proved not to be the case. Evasive manoeuvres would have caused the plane to crash at a different location.¹¹

The main result of the exhaustive investigations was the exclusion of "La Ferme", an abandoned farm at the foot of Masaka Hill, mentioned as the shooters' location in most witness statements.¹² La Ferme and the crash site were too far apart.¹³ When the plane was targeted, it had already passed Masaka, and the angle of a missile trajectory from that direction did not match the part of the plane that was hit: the underside of the left wing.¹⁴ A missile from that area, guided by its infrared sensor,¹⁵ would have hit one of the jet engines attached to the tail.¹⁶ The inspection of the wreckage showed no missile damage to the engines.¹⁷



This situation map by the author is based on data from Oosterlinck et al. (2012 and 2013), and Serre (2012). According to the experts, the shooters' most likely position was inside the yellow area. The circles represent the sound wave (m/s) produced by a hypothetical missile shot at La Ferme near Masaka Hill.

Because the engines on this type of aircraft are higher than the wings, a missile from the vicinity of Masaka could not have hit the wing from below.¹⁸ That was possible only if it was fired from Kanombe Hill, diagonally in front of the plane.¹⁹ The most likely position of the shooters, according to the experts, was a clearing inside the Kanombe military domain between a woodlot on the edge of the hill and a residential area where French

officers and employees of the military hospital resided.²⁰ The designated area was a ten minute walk from the barracks where the Presidential Guard was stationed,²¹ but according to the scholarly consensus, not a realistic option for the RPF.²² Based on these findings, the rational conclusion would be to seek the assassins among Habyarimana's elite troops.

Sound velocity

This observation led to fierce criticism from a group of academics and journalists who firmly believed the witnesses who claimed to have been present at La Ferme when the rockets were fired.²³ The discrepancy leaves two possibilities: The French judges and scientists did a poor job, or the "Masaka" witnesses were unreliable.

To answer this question, I asked a specialist in plane crashes, Joris Melkert of Delft Technical University, to review the expert reports. He agreed and drew the following conclusion:

What I take from it is that a solid investigation was carried out, both in the initial report and the supplementary report. I think the conclusions drawn by the authors also established the most likely cause. As with any research, assumptions have been made. As far as I can tell, these are reasonable assumptions.²⁴

The critics thought otherwise. Four days after the forensic report was presented in Paris, historian Bernard Lugan published an article on his website denouncing the work of Jean-Pascal Serre, the acoustics expert of the French scientists.²⁵ Serre had measured the sound intensity of missile shots to determine what the various witnesses could have heard at their positions. The tests were conducted at a special test site in France.²⁶ Lugan, not an expert in this field, called Serre's approach "amateurish" because the terrain in France was different from Kigali and no SA-16s, the type of missile that downed the plane, were used.²⁷

I contacted Serre who told me that in 2011, when he conducted the test, SA-16s were no longer available.²⁸ It made little difference because the theoretical sound levels were established for both the SA-16 and the tested missiles.²⁹ Serre's objective was to measure the difference between theoretical and realistic values. This could only be done under controlled conditions and not along a public road in Kigali as Lugan suggested. The test determined a calculation factor, useful to estimate the realistic value of an SA-16.³⁰ The terrain conditions were only a marginal influence, according to Serre, not significantly

affecting the result.³¹ Moreover, four other experts were present to observe the test procedure. Their names and functions are listed in the acoustics supplement.³²

Ironically, the test result did not lead to the exclusion of La Ferme.³³ Under normal circumstances, all relevant witnesses could have heard the shots. Lugan had aimed his arrows at the wrong part of the acoustic research. The decibels were not the problem, but the speed of the sound. The most reliable witnesses, a group of Belgian military doctors and a French officer in Kanombe,³⁴ heard the missile shots before the plane was hit. If the missiles had been fired from La Ferme or another location in the Masaka area, that would have been impossible.

Anyone with a high school education will remember that the propagation of a sound wave depends on the weather conditions, temperature and air pressure. The meteorological data from Kigali on 6 April 1994 were on record, making the speed of the wave easy to calculate (343 m/s).³⁵ The distance between La Ferme and the witnesses was over 2.7 km.³⁶ Simple arithmetic shows that the sound of a shot from La Ferme would travel almost eight seconds before reaching the witnesses' ears.³⁷ This is a second and a half longer than a missile would take to hit the plane (6.46 s.).³⁸ In that scenario, the witnesses could not hear the shots before seeing the explosion. Combining the witness statements with the acoustic data, the shooters' position was inside the Kanombe military domain, a few hundred metres from the witnesses.³⁹

From hypothesis to conspiracy theory

Despite Lugan's error, his suggestion of sloppy science appealed to the imagination. A few weeks later, Belgian scholar Filip Reyntjens repeated it in *Le Monde*.⁴⁰ Barrie Collins followed,⁴¹ then Pierre Péan, Paul Rusesabagina, Judi Rever,⁴² and many others.⁴³ In 2020, eight years after the initial report was presented, Reyntjens still repeated Lugan's mistake in a working paper dedicated to the Habyarimana assassination which included dozens of similar errors.⁴⁴ However, while the scientific reports were available only in French, most critics published their opinions in English. Their misinformation got the upper hand, inspiring conspiracy theories about 'a diplomatic deal between France and Rwanda' to cover up what 'really' happened.⁴⁵

Fascinated by these developments, I wondered about the origins of the "Masaka" hoax. Like much of the other misinformation about Rwanda and the Genocide against the Tutsi, it could be traced back to a broadcast of the notorious hate radio station Radio Télévision Libre des Mille Collines (RTLM). On 13 April 1994, a day after Belgian peacekeepers in

Kigali told the media that the missiles had come from Kanombe,⁴⁶ RTLM propagandist Georges Ruggiu countered with the claim that "after close examination, it appears that this plane was shot down from an unofficial position: the Masaka position of Belgian UNAMIR soldiers".⁴⁷

Masaka, like Kanombe, was controlled by the FAR, the government army at the time, but Ruggiu's suggestion of a Belgian military position created the impression that the area was easily accessible to the RPF. Rumours of a conspiracy between Belgium and the RPF were repeatedly broadcast during the Genocide. Afterwards, the story took on a life of its own, stripped of the "Belgian soldiers" and fuelled by other diversions such as the "accidental" discovery of SA-16 launch tubes at La Ferme.^{48 49} Unsurprisingly, those tubes disappeared without a trace before an independent authority could investigate them.⁵⁰

The Masaka hoax sticks

In the Netherlands, meanwhile, journalists and academics do their best to keep the Masaka hoax afloat. In 2018, for example, the Amsterdam University Press (AUP) published a translation of Judi Rever's book "In Praise of Blood", titled "The Truth About Rwanda".⁵¹ In her chapter about the plane shooting, the author devotes just 239 words to the French investigation (3.2%), repeating Lugan's mistake and the erroneous assumption that the experts had not excluded Masaka. In 2021, Dutch professor Uğur Ümit Üngör published a book by René Lemarchand,⁵² a veteran of genocide research, that completely glosses over the French reports. The website of the Africa Study Centre at Leiden University still promotes the controversial BBC documentary "Rwanda's Untold Story" that, like Lemarchand, discusses outdated studies but forgets to mention the forensic research of 2010-2013.⁵³

Things are no better in the media. Years after the French investigation, journalist Anneke Verbraeken, who likes to present herself as a Rwanda expert, still claimed there are 'strong indications that it was precisely Kagame who ordered the presidential plane to be shot from the sky'.⁵⁴ Other journalists write that the circumstances have never been clarified or they interview a well-known personality such as former Belgian ambassador Johan Swinnen who believes that an international investigation has not taken place.⁵⁵ In recent years, British author Michela Wrong appeared in our media because of her book *Do Not Disturb*, which enjoys great popularity among journalists of the former quality media in the Netherlands. Wrong reserves one sentence for the scientific investigation in her chapter about the attack. The remaining 99.6% is for the Masaka witnesses and the suggestion that the French research was a diplomatic endeavor.

References:

- ¹ "UN pays tribute to victims and survivors of the 1994 Genocide against the Tutsi in Rwanda," *United Nations*, 12 April 2024.
- ² Philip Verwimp, "Death and survival during the 1994 genocide in Rwanda," *Population Studies* 58.2 (2010), p. 233; Marijke Verpoorten, "How Many Died in Rwanda?" *Journal of Genocide Research* 22.1, 1 January 2020, 94-103. Online version: p. 9. <https://doi.org/10.1080/14623528.2019.1703253>; Omar McDoom, *The Path to Genocide in Rwanda*, Cambridge University Press 2021, p. 294. Verwimp mentions 75 %, Verpoorten uses a range of 70-80%. McDoom's estimate is slightly lower ($\pm 2/3$) assuming a higher survival rate than other researchers.
- ³ "Presidents Killed in Attack on Plane", *The Guardian*, 7 April 1994; "Presidenten Rwanda en Burundi omgekomen", *NRC*, 7 April 1994.
- ⁴ Academics who proclaim the RPF guilty usually belong to the older generation of Rwanda scholars, such as René Lemarchand, Filip Reyntjens, and André Guichaoua.
- ⁵ From 13 April 1994 onward, a week after the assault, investigators of the Belgian Military Court and Magistrate Damien Vandermeersch collected many witness statements. After 1998, French judge Jean-Louis Bruguière heard different witnesses resulting in arrest warrants against nine RPF officers. The case was dismissed in 2018 for lack of evidence. See Jean-Louis Bruguière, *Delivrance de Mandats d'Arret Internationaux: Ordonnance de Soit-Communique*, Cour d'Appel de Paris, Tribunal de Grande Instance de Paris, 17 November 2006 ; Marc Herbaut en Nathalie Poux, *Ordonnance de Non-Lieu*, N° du Parquet: 9729523030. N° Instruction: 272/00/13 & 1341. Cour d'Appel de Paris, Tribunal de Grande Instance de Paris, Section Anti-Terroriste, 21 December 2018.
- ⁶ In Belgium: Philippe Mahoux and Guy Verhofstadt, *Commission d'Enquête Parlementaire Concernant les Événements du Rwanda*, Sénat de Belgique, 1997; In France: Paul Quilés, *Rapport d'Information Sur les Opérations Militaires Menées Par la France, d'Autres Pays et L'ONU au Rwanda Entre 1990 et 1994*, Assemblée Nationale, 1998.
- ⁷ Jean Mutsinzi et al, *Report of the Investigation into the Causes and Circumstances of and Responsibility for the Attack of 06/04/1994 Against the Falcon 50 Rwandan Presidential Aeroplane*, Registration Number 9XR-NN, Independent Commission of Experts, Kigali 2009.
- ⁸ "Le juge Trévidic en Septembre à Kigali", *Jeune Afrique*, 1 July 2010; "French judges launch week-long Rwanda probe," *Radio France Internationale*, 13 September 2010.
- ⁹ Claudine Oosterlinck et al, *Rapport d'Expertise: Destruction en Vol du Falcon 50 Kigali (Rwanda)*, N° du Parquet: 9729523030. N° Instruction: 272/00/13 & 1341. Cour d'Appel de Paris, Tribunal de Grande Instance de Paris, 5 January 2012.
- ¹⁰ Claudine Oosterlinck et al, *Rapport d'Expertise: Complément De Mission (Manoeuvre d'évitement)*. Cour d'Appel de Paris, Tribunal de Grande Instance de Paris, 10 May 2013.
- ¹¹ Oosterlinck et al 2013, 82.
- ¹² Oosterlinck et al 2012, 57, 314.

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- ¹³ The crash site should have been closer to La Ferme to explain the damage to the aircraft (on the side of Rusororo Hill, north of Masaka Hill, according to my calculations).
- ¹⁴ Oosterlinck et al 2012, 301.
- ¹⁵ Oosterlinck et al 2012, 196, 235-236.
- ¹⁶ Oosterlinck et al 2012, 312.
- ¹⁷ Oosterlinck et al 2012, 92-95, 100-101.
- ¹⁸ Oosterlinck et al 2012, 312.
- ¹⁹ Oosterlinck et al 2012, 313.
- ²⁰ Oosterlinck et al 2012, 313.
- ²¹ The headquarters of Kanombe Military camp were \pm 800 meters from the shooter's location. The RPF battalion was fifteen kilometres away, guarded by UN peacekeepers and watched by government soldiers. See Romeo Dallaire, *Shake Hands with the Devil*, Random House Canada 2003, pp. 157, 165, 193. On the evening of the assault, Dallaire's assistant Henry Anyidoho, and Philippe Gaillard of the ICRC were visitors at the RPF location.
- ²² Filip Reyntjens, *The RPF Did It*, Working Paper, Universiteit van Antwerpen 2020, p. 3. According to Reyntjens, "it is unlikely that the RPF would have carried out the attack from the military domain or its immediate surroundings, but it could have accessed the area of Masaka." Despite his suggestion, Reyntjens does not clarify how the RPF would have accessed the Masaka area.
- ²³ Tom Lansford, *Political Handbook of the World 2015*, Sage publications 2015, p. 5139; Erin Jessee, "Rwandan Women No More," in *Conflict and Society 1* (2015): 60-80, online version: p. 34. Some scholars continue to bury their heads in the sand. René Lemarchand, for example, ignores the investigation in his book *Remembering Genocides in Central Africa*, Routledge 2021. The consequence of focusing solely on the RPF is that other, more likely suspects were not seriously considered.
- ²⁴ Email Joris Melkert of 11 April 2024.
- ²⁵ Bernard Lugan, "Rwanda: Réponse de Bernard Lugan à l'Association Enquête Citoyenne Rwanda", *L'Afrique Réelle*, 14 January 2012.
<https://bernardlugan.blogspot.com/2012/01/rwanda-reponse-de-bernard-lugan.html>
- ²⁶ Jean-Pascal Serre, *Rapport Complémentaire En Acoustique*, Cour d'Appel de Paris, Tribunal de Grande Instance de Paris, 4 January 2012.
- ²⁷ Oosterlinck et al 2012, 174.
- ²⁸ Email Serre of 17 February 2022.
- ²⁹ 170 dB(A). See Serre 2012, p. 16, table 10.
- ³⁰ Email Serre 2022; Serre 2012, 16. The calculation factor was determined at 0.94, which reduced the sound intensity of the shot to $170 \times 0,94 = 160$ dB(A); Serre 2012, 18, 26: By the time the sound wave reached the witnesses, that level would have dropped to 102 dB(A), still loud enough to be heard in Kanombe.
- ³¹ The terrain influence could not be accurately determined anyway (Serre 2012, 26). Information about possible obstacles in 1994 was missing and the buildings and

vegetation had changed. However, that information would not significantly have altered the result, according to Serre.

³² Serre 2012, 8.

³³ Oosterlinck et al 2012, 257: Every witness in the eastern part of the military domain could, in theory, hear the sound.

³⁴ The Belgian doctors were in Rwanda as part of the peace treaty. They worked at the Kanombe military hospital and occupied a row of villas on the outskirts of the domain. On the evening of the attack, Massimo Pasuch and his wife Brigitte Delneuve, Daniel Daubresse and Denise van Deenen were gathered at Pasuch and Delneuve's house. The French officer, Lt. Colonel Grégoire de Saint Quentin, was at home, about 100 metres behind them.

³⁵ Serre 2012, 18-19.

³⁶ Oosterlinck et al 2012, 249.

³⁷ Oosterlinck et al 2012, 250; Serre 2012, 19.

³⁸ Oosterlinck et al 2012, 249; Serre 2012, 22.

³⁹ Email Serre.

⁴⁰ Filip Reyntjens, "Attentat de Kigali: 'la vérité a gagné'?" *Le Monde*, 31 January 2012. https://www.lemonde.fr/idees/article/2012/01/31/attentat-de-kigali-la-verite-a-gagne_1636326_3232.html

⁴¹ Barrie Collins, "Shooting Down the Official 'Truth' About Rwanda," *Spiked*, 15 March 2012. <https://www.spiked-online.com/2012/04/16/shooting-down-the-official-truth-about-rwanda/>

⁴² Judi Rever, *De Waarheid Over Rwanda*, Amsterdam University Press 2018, p. 129. NB: The fact that the AUP published it might lead readers astray. Rever is not an academic, neither is the responsible staff member, Katrien de Vreese. The AUP did not consult the University of Amsterdam or the Netherlands Institute of War Documentation (NIOD). De Vreese was persuaded by Peter Verlinden, a Belgian journalist she knew from her previous job at Davidsfonds Publishers.

⁴³ E.g.: Masako Yonekawa, Omar McDoom, Michel Robardey, Alain de Brouwer, and so on.

⁴⁴ Reyntjens 2020. Many errors deny, distort or conceal the facts of the French investigation. Reyntjens also cites as relevant information previously debunked controversies such as Michael Hourigan's famous memo (1997). Like other authors such as Judi Rever, René Lemarchand and Michela Wrong, Reyntjens conceals what is stated in the last paragraph of that memo: that Kagame planned the attack, but government soldiers carried it out. According to Hourigan, two FAR soldiers fired the rockets from Gasogi and Masaka Hills. Mission control was Camp Kanombe. If true, the RPF and the Presidential Guard were in cahoots. Moreover, Gasogi Hill was on the plane's right, whereas the missiles came from its left. ICTR prosecutor Louise Arbour became sceptical after she read the memo and shut down his investigation, enough for Hourigan to believe she was covering up the 'truth'.

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- ⁴⁵ E.g.: Michela Wrong, "Priti Patel is Playing Into Paul Kagame's Hands," *The Spectator*, 23 April 2022. <https://www.spectator.co.uk/article/hotel-rwanda-why-does-kagame-want-to-take-in-britains-asylum-seekers/>
- ⁴⁶ Mark Huband, "Belgians Say Rebels Could Not Have Killed President," *The Guardian*, 12 April 1994; Scott Peterson, "Violence Lurks round Every Corner," *The Daily Telegraph*, 12 April 1994.
- ⁴⁷ Georges Ruggiu: "Après une enquête minutieuse tout porte à croire que cet avion a été descendu au départ d'une position non officielle. Position Masaka des soldats Belges de la MINUAR." Broadcast on *RTL* radio, 13 April 1994. Cassette A/910, Exhibit P103/064 in Case N°. ICTR-99-52-T: The Prosecutor vs Nahimana et al, Internationaal Strafhof voor Rwanda (ICTR). NB: UNAMIR was de United Nations Assistance Mission for Rwanda – the UN peacekeeping force.
- ⁴⁸ Letter from lawyer Luc de Temmerman to investigating judge Damien Van Der Meersch, subject: 'Bagosora/Tribunal International,' Overijse (B), 10 July 1995. Attached to the letter was a faxed copy of a handwritten note sent to De Temmerman by his client Colonel Théoneste Bagosora. The note listed the serial numbers of two SA-16s that, according to Bagosora, were 'used in the assault on the head of state on 6 April 1994.'
- ⁴⁹ The launch tubes were reportedly found near La Ferme on 25 April 1994, see Filip Reyntjens, *Rwanda: Trois Jours Qui On Fait Basculer L'histoire*, Institut africain-CEDAF 1995, 44-46.
- ⁵⁰ According to the French Court, the note had been in the possession of the French military intelligence agency DRM as early as May 1994, but despite extensive research, the tubes were never found. Pictures of a launch tube from May 1994 could not make clear whether it had been used. See Herbaut and Poux, 2018, 25-26.
- ⁵¹ Judi Rever 2018. For a critical review of the English version see Jos van Oijen, "Review: 'In Praise of Blood': Sensational, But Does it Fit with Reality?" *ZAM Magazine*, 18 December 2018. <https://www.zammagazine.com/arts/1056-in-praise-of-blood>
- ⁵² Lemarchand 2021, published in the series *Mass Violence in Modern History*, ed. Uğur Ümit Üngör and Alexander Korb. None of them were willing to comment.
- ⁵³ <https://www.ascleiden.nl/content/library-weekly/assassination-juvenal-habyarimana-and-cyprien-ntaryamira>
- ⁵⁴ Anneke Verbraeken, "Ik een moordenaar? Integendeel", *Vrij Nederland*, 26 May 2015.
- ⁵⁵ Coen Verbraeek, "Hoe kón dit in godsnaam in Rwanda gebeuren?," *NRC*, 21 October 2016.