

# Voice Mimicry Attacks Assisted by Automatic Speaker Verification

## Additional material

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This document contains information about the experiments and the material used in the study concerning mimicry attack of selected celebrities assisted by automatic speaker verification.

### 1. Experiments

The following table describes the experiments of this study.

Experiment	Data	Outcome
Search for target speakers using attacker ASV system	Attackers' modal voice. VoxCeleb corpus, possible target speakers in Finnish and non-Finnish set of speakers	ASV scores selection of closest, median and furthest target (Finnish and non-Finnish) for each attacker
Mimicry attack	Selected target speaker utterances with attackers' modal and mimicry voice	Performance of attacked ASV system
Perceptual and automatic system evaluation of mimicry attack	625 selected trials for Finnish target speakers and their respective attacker's modal and mimicry attempt.	Listeners' judgments of speaker similarity. Attacker's and attacked system performance evaluation of selected trials
Prosody and formant analysis	F0, speaking rate, formants from attackers and target speakers' utterances	Analysis of the target speakers' and attackers' features changes for modal voice and mimicry attack

### 2. Speech data collection materials

This section contains details of the data collection material recorded by the mimicry attackers (**A**) and the data collected from the selected celebrities (**B**).

#### A. Corpus of locally recruited mimicry attackers

Recording session for target selection

Task	Recorded speech
1 Spontaneous speech (Finnish)	1 minute of speech on the speaker chosen subject. Suggestions: vacations, last week activities, the weather, favorite TV program, hobbies.
2 Reading text: Text 1 and 2 (Finnish) Text 3 (English)	(Text 1) <ol style="list-style-type: none"><li><i>Kun auringonvalo osuu sadepisaroihin ilmassa, ne käyttäytyvät kuin prismat, ja muodostavat sateenkaaren.</i></li><li><i>Sateenkaari muodostuu valkoisen valon jakaantuessa useiksi kauniiksi väreiksi.</i></li><li><i>Nämä muodostavat kauniin pitkän kaaren horisontin yläpuolelle päättyen jonnekin sen taakse.</i></li><li><i>Legendan mukaan sateenkaaren päässä on padallinen sulaa kultaa.</i></li><li><i>Ihmiset etsivät sitä kuitenkin mitään löytämättä.</i></li><li><i>Kun joku etsii jotain mahdotonta, sanotaan hänen etsivän kultaa sateenkaaren päästä.</i></li></ol> (Text 2) <ol style="list-style-type: none"><li><i>Pohjantuuli ja aurinko väittelivät kummalla olisi enemmän voimaa, kun he samalla näkivät kulkijan, jolla oli yllään lämmin takki.</i></li><li><i>Silloin he sopivat, että se on voimakkaampi, joka nopeammin saa kulkijan riisumaan takkinsa.</i></li><li><i>Pohjantuuli alkoi puhaltaa niin että viuhui, mutta mitä kovempaa se puhalsi, sitä tarkemmin kääri mies takin ympärilleen, ja viimein tuuli luopui koko</i></li></ol>

		<p><i>hommasta.</i></p> <p>4. <i>Silloin alkoi aurinko loistaa lämpimästi, eikä aikaakaan, niin kulkija riisui manttelinsa.</i></p> <p>5. <i>Niin oli tuulen pakko myöntää, että aurinko oli kuin olikin heistä vahvempi.</i></p> <p>(Text 3)</p> <p>1. <i>She had your dark suit in greasy wash water all year.</i></p> <p>2. <i>Don't ask me to carry an oily rag like that.</i></p>
3	Reading text (English)	<p>(Text 4)</p> <p>1. <i>When the sunlight strikes raindrops in the air, they act as a prism and form a rainbow.</i></p> <p>2. <i>The rainbow is a division of white light into many beautiful colors.</i></p> <p>3. <i>These take the shape of a long, round arch, with its path high above, and its two ends apparently beyond the horizon.</i></p> <p>4. <i>There is, according to legend, a boiling pot of gold at one end.</i></p> <p>5. <i>People look, but no one ever finds it.</i></p> <p>6. <i>When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.</i></p> <p>(Text 5)</p> <p>1. <i>The North Wind and the Sun were disputing which was the stronger when a traveller came along wrapped in a warm cloak.</i></p> <p>2. <i>They agreed that the one who first succeeded in making the traveller take his cloak off should be considered stronger than the other.</i></p> <p>3. <i>Then the North Wind blew as hard as he could, but the more he blew, the more closely did the traveller fold his cloak around him; and at last the North Wind gave up the attempt.</i></p> <p>4. <i>Then the Sun shone out warmly and immediately the traveller took off his cloak.</i></p> <p>5. <i>And so the North wind was obliged to confess that the Sun was the stronger of the two.</i></p> <p>(Text 6)</p> <p>1. <i>She had your dark suit in greasy wash water all year.</i></p> <p>2. <i>Don't ask me to carry an oily rag like that.</i></p>
4	Spontaneous speech (English)	1 minute of speech on the speaker chosen subject. Suggestions: vacations, last week activities, the weather, favorite TV program, hobbies.

The locally recruited speakers, called "attackers" for the purpose of the study, are volunteer adult Finnish speakers. Six speakers were recorded for the experiment: **four male speakers** (M1, M2, M3, M4) and **two female speakers** (F1, F2). Besides the session explained above, the speakers were invited for two additional sessions. After selecting the target speakers for each attacker, the second session corresponds to recordings of the attackers' modal voice reading target speakers' utterances, and the third session for mimicry of the same utterances after listening to the target speakers' audio.

## B. Corpus of target speakers (VoxCeleb)

For each of the attackers three target speakers were selected: closest, median and furthest. This category corresponds to ASV score between target speaker and the attackers’.

The following tables contain detailed information of the target speakers per attacker, Table 1 for Finnish speaking celebrities, Table 2. Celebrities from other nationalities speaking English.

**Table 1.** Target speakers (closest, median and furthest) per attacker. Finnish celebrities (from VoxCeleb2)

Mimicry attacker	ID	Celebrity	Profession	Spoken language
M1	id07747	Samuli Edelmann	Actor, singer	Finnish, English
	id06726	Paavo Väyrynen	Politician	Finnish
	id06500	Antti Tuisku	Pop singer	Finnish
M2	id07747	Samuli Edelmann	Actor, singer	Finnish, English
	id06726	Paavo Väyrynen	Politician	Finnish
	id06097	Mika Kojonkoski	Ski jumper, politician	Finnish, English
M3	id04285	Joni Ortio	Ice hockey player	Finnish, English
	id02416	Elastinen	Rap musician	Finnish
	id06931	Perttu Kivilaakso	Musician	English
M4	id07747	Samuli Edelmann	Actor, singer	Finnish, English
	id08719	Tuomas Holopainen	Musician	Finnish, English
	id04494	Jyrki Katainen	Politician	Finnish, English
F1	id00638	Anna Puu	Pop singer	Finnish
	id04584	Karita Mattila	Opera singer	Finnish, English
	id08421	Tarja Halonen	Politician	Finnish, English
F2	id08125	Sofi Oksanen	Writer	Finnish, English
	id04527	Kaisa Mäkäräinen	Biathlete	Finnish, English
	id08421	Tarja Halonen	Politician	Finnish, English

**Table 2.** Target speakers (closest, median and furthest) per attacker. Speakers marked with \* are found from VoxCeleb1, the rest are found from VoxCeleb2.

Mimicry attacker	ID	Celebrity	Profession	Spoken language
M1	id08781	Valentin Inzko	Politician	English (Austrian)
	id02438	Elijah Cummings	Politician	American English
	id10154	Chris Colfer *	Actor	American English
M2	id10482	Jeremy Irons *	Actor	British English
	id04562	Karan Tacker	Actor	Indian English
	id11019	Ryan Ochoa *	Actor	American English
M3	id09235	Éric Boullier	F1 manager	English (French)
	id10354	Guillaume Canet *	Actor, director	English (French)
	id01043	Bill Gilman	Singer	American English
M4	id01695	Ciarán Hinds	Actor	Irish English
	id03523	Ian Kinsler	Baseball player	American English
	id06971	Phil Mickelson	Golf player	American English
F1	id10497	Jessie J *	Singer	British English
	id10123	Candace Cameron *	Actress	American English
	id10688	Lin Shaye *	Actress	American English
F2	id02746	Fay Ripley	Actress, author	American English
	id00939	Belçim Bilgin	Actress	English (Turkish)
	id10061	Anne Hathaway *	Actress	American English

Additionally,

**Table 3.** Common target matched with the attacker’s gender, in both Finnish and English.

<b>ID</b>	<b>Celebrity</b>	<b>Profession</b>	<b>Spoken language</b>
id03557	Ilkka Kanerva	Politician	Finnish,English
id05124	Leonardo DiCaprio	Actor	American English
id07087	Paivi Räsänen	Politician	Finnish,English
id03460	Hillary Clinton	Politician	American English

For each of the 36 selected target speakers, we selected at minimum 30 seconds of active speech. The speech was collected from multiple shorter utterances with the duration of VoxCeleb excerpts varying between 5 to 10 seconds. A reason to select short utterances was to simplify the task of the attackers that did not much time to rehearse the selected utterances.

Next we present the transcripts for the selected utterances per target speaker and their corresponding attackers.

## Target speakers for attacker impersonator: M1

### Closest id07747

### Samuli Edelmann, actor and singer

- mStkPBB9e6E/00015.m4a ...vuosia sitte kolkuttelee uudestaan silloin kun unelma kolkuttelee ovelle niin silloin parempi herätä ja mennä avaamaan se ovi ja...
- mStkPBB9e6E/00017.m4a ...tää luominen ja näyttöleminen, laulaminen oli pansa se on luomisprosessi niin se on siitä mitä mun tehty koko elämä...
- mStkPBB9e6E/00019.m4a ...en mä voi sanoa et enemmän et mä nyt tykkään tästä enemmän et pienimuotonenki on tosi kaunista ja ...
- u2lVys6XGc0/00027.m4a ...hengen heimolaisuus et miten maailman ja taiteen tai tekemisen kokee ja...
- u2lVys6XGc0/00024.m4a ...aa kyllähä me ollaa Veskun kans on puhuttu jo aika pitkään et ois kiva tehdä jotain yhdessä ja...
- FhIUNtIK5aA/00001.m4a ...so that's one reason why this guy only concentrates into playing piano and that's his life...

### Median id06726

### Paavo Väyrynen, Politician

- 5Y75wXzcuNs/00055.m4a ...julkistaminen elokuussa, tänä vuonna, josta tämä asia tuli sitten uudelleen julkisuuteen...
- 5Y75wXzcuNs/00030.m4a ...osapuilleen tällaisen järjestelmän se on nykyään tarpeellinen...
- 5Y75wXzcuNs/00041.m4a ...kirkon itsensä ja yliopistolaitokseen itsensä pitäisi harkita missä määrin tällasta...
- 5Y75wXzcuNs/00036.m4a ...mutta on saatu sitten lehtiseteleitä vain vasemmistolaisten lehtien tilaamiseen, ei tämäkään ole ollut oikein ja tähänkin veronmaksajat ovat välillisesti olleet vaikuttamassa koska jäsenmaksutulot joista näitä lehtiä on tuettu ovat olleet verotuksessa vähennyskelpoisia...

### Furthest id00729

### Antti Tuisku, Pop singer

- zXKQfyLUg7s/00039.m4a ...ihmisiltä jotka mua kuuntelee et siis se se tekee mut äärimmäisen ...
- 3TyLfSdxxwY/00007.m4a ...syy minkä takia mä lähin mukaan myöskin KIDSing-ohjelmaan mikä nyt huomenna starttaa..
- 3TyLfSdxxwY/00008.m4a ...siinä meil on myös mahdollisuus päästä positiivisesti vaikuttaa siihen, että lapset ja nuoret uskaltaa mennä kohti omia unelmiaan ja ja että tota...
- zXKQfyLUg7s/00036.m4a ...kaikkihan tuli ihan puskista et ei siinä oikein osannu ajatella vielä kauheesti mitään, ties vaan sen että et tää on se mitä mie haluan tehdä ja...

**Closest  
id08781**

**Valentin Inzko, Austrian politician**

- 6UZxJUw83\_s/00029.m4a In this regard, the last ten years have been a disappointment for many citizens in Bosnia-Herzegovina and for me, I...
- 6UZxJUw83\_s/00039.m4a ...several of the key objectives, laid down by peace implementation council steering board in February 2008, have been reached, though work still has to be done...
- 6UZxJUw83\_s/00042.m4a I believe in Bosnia-Herzegovina and I believe in its people's ability to overcome the tragedy of war and to once again come together to build a better future for current and future generation...

**Median  
id02438**

**Elijah Cummings, American politician**

- G\_pgh4leIXw/00115.m4a ...an honorable man, he's a good man, aaa and a man of integrity, but I think he made a mistake. aa but hopefully this...
- 4bxKauxq4dE/00013.m4a ..vet it. They have given us nothing. Now this perhaps provides us with an answer, as to why we haven't been able to get one single syllable from aaa from the White House...
- blyTFVG2sBw/00250.m4a I'm gonna do everything in my power to turn that around, aa we can not have that. I think... and the other thing, Chris, is very...

**Furthest  
id10154 (VoxCeleb1)**

**Chris Colfer, American actor**

- Ulf7-76t-D8/00003.wav ...Three Kurt is a senior, and aa he's umm very much looking forward to graduating and and moving away from Lima, Ohio, and aa he and Rachel are...
- SQZAtg69r8I/00001.wav ...You know like like one thing I was writing about is when when I do things like this, I try not to make many facial expressions. Because I know if I make a big facial expression...
- 0FhJs\_jMUPs/00001.wav err amm.. in the second book the twins were separated, one was in the fairy tale dimension, and the other was in, in our dimension. Umm. They re-reunited the third one, but I, I would be lying if I said that the ending of the third one is any...

## Target speakers for attacker impersonator: M2

### Closest id07747

### Samuli Edelmann, actor and singer

- u2lVys6XGc0/00024.m4a ...aa kyllä mulla Veskun kans on puhuttu jo aika pitkään että ois kiva tehdä jotain yhdessä ja ...
- mStkPBB9e6E/00019.m4a ... en mä voin sanoa enemmän et mun tykkään tästä enemmän pienimuotoinen on tosi kaunista ja ...
- yMC9UbJICMk/00028.m4a Länsimaisessa yhteiskunnassa niin syöpä tulee koko ajan vaan tutummaksi yleisemmäksi meille kaikille, puhuin nyt...
- e9cQ8NfqLqg/00009.m4a ... so that's one reason why this guy only concentrates into playing piano and that's his life and so his life actually...
- e9cQ8NfqLqg/00011.m4a ...Actually it was very easy to work with Vesku, Vesku is very musical...

### Median id06726

### Paavo Väyrynen, politician, speaking Finnish.

- 1f6A\_mEO9jw/00011.m4a ...saattaa pahimmillaan johtaa Suomen kehitystä pahasti harha...
- 5Y75wXzcuNs/00036.m4a ...mutta on saatu sitten lehtiseteleitä vain vasemmistolaisten lehtien tilaamiseen, ei tämäkään ole ollut oikein ja tähänkin veronmaksajat ovat välillisesti olleet vaikuttamassa koska jäsenmaksutulot joista näitä lehtiä on tuettu ovat olleet verotuksessa vähennyskelpoisia...
- hDKOWGzqMVI/00081.m4a ...syytti ja tuomitsi ja vasta jälkikäteen ruvettiin mietimään et mitähän tässä oikein olikaan mutta eihän lehdistö koskaan jälkikäteen myönnä että on erehtynyt...
- jnpUfklIU/00108.m4a Ongelma tässä on lähinnä se että meillä on investointeja jotka pitää tehdä aika monella rajanylityspaikalla...

### Furthest id06097

### Mika\_Kojonkoski, ski jumper and politician.

- o2xZUxWqQAk/00074.m4a ...rakentaminen on monia asioita mutta se on myöskin siitä että sä oot niinku tavallaan sellaises päivittäis tekemises jos sä haluat haastas itsesi, sä haluat mennä yli rajojen, sä haluat niinku tavalla voita voita omat rajat...
- o2xZUxWqQAk/00076.m4a Sano että se on hieno kokemus ja ja on on hienoa nähdä niinku minkäänlaista mittasuht niinku urheilussa menestyminen jääkiekkossa menestyminen saa ...
- W\_ggrkO715g/00051.m4a Me ei halutaan ylhäältäpäin johtamista tässäköön kohdas joku tulis kertomaan...
- VPX37nE5aAs/00045.m4a One training round and qualification yesterday morning, maybe that would have been the time to have aaa one two competing rounds aaa, friday night was good as well...

**Furthest  
id10482 (VoxCeleb1)**

**Jeremy Irons, British actor**

p1R9QVyrfho/00004.wav

...And no one's ever happy with government but but Donald has charisma and he speaks everyone's language he doesn't know nothing I think about politics but he knows what's...

Kx\_VXceIeMM/00001.wav

...It's a very interesting one that an-and I don't really have a strong feeling, but I see that the what we had in England which...

t24\_N3awD-o/00008.wav

...Well, because it opened up this, I - I had a very privileged education, and and when I'd finished, I had no idea really what I wanted to do, so they asked me to go be a social in worker in Southern- in South London where they...

p1R9QVyrfho/00003.wav

There's an element of that happening. So when you get this disaffection with politics...

t24\_N3awD-o/00009.wav

...very poor people lived and I ran the youth club on a Sunday...

**Median  
id04562**

**Karan Tacker, indian actor**

qio\_Gs7wjvY/00217.m4a

...Incomplete without you guys watching my work and enjoying it and I'm glad that you get...

INEeBqold4A/00168.m4a

...paper plates and people used to play musical chairs back in the day so all those you know little things were a lot of fun...

JekojVfnvDE/00096.m4a

... and, aaa, most importantly I think what's, what's, what's important to remember is, is you wanna do good work. You know you wanna do a good film, you don't wanna do just any film. So, aa, definitely I think if a good film comes by, you know, if there's something good that I read...

**Furthest  
id11019 (VoxCeleb1)**

**Ryan Ochoa, American actor**

\_oTjMIU15V8/00001.wav

...Their.. it turns out their mom and dad were king and queen of Kinkow, and so they come to the island 'cause now they're next in line, and aa it's just about them learning all the new customs and the superstitions about Kinkow and trying to be...

0gvoWLbW4MI/00002.wav

...It is, I mean, you know, everyone's grown up now, we have some new st- you know, we have a new king, we have new stories and we have like the best crew here who works...

0gvoWLbW4MI/00003.wav

My favorite episode probably Outland and I have said it but because it has to do with me and...



## Target speakers for attacker impersonator: M3

### Closest id04285

### Joni Ortio, Ice hockey player

- XxqqFAeZOZQ/00033.m4a ... noi noi pelit ni jatkaa vaa sitä mut sit täytyy niiku meidän täytyy olla niin paljon vaan tarkempi tarkempi kaikis pienis y-yksityiskohdis koska nihi me ollaan nyt kaaduttu ...
- IUVf9nLyU\_8/00055.m4a ... toimii aika hyvin niiku puolin ja toisin tuo meijä meijä yhteistyö ja puhe tuolla kentällä ja et auttaa varmasti niiku sitä oman pään pelaamistaki ...
- z3vE6zGEI9U/00075.m4a ... meil on tota odotukset aika korkeella silleen et meil on kuitenkin me ollaan hyvin pelattu pelattu siit huolimat et paris viime pelis ei oo voittoa ...
- pmJXSYNCgQc/00063.m4a ... they play with such a good structure, and lik yea like said they play really well tonight and it it's o it's always gonna take our best to beat them, and and I think that's what ...
- pmJXSYNCgQc/00064.m4a ... like it's not gonna come easy it's, it's they are always tough one those games against Baker.

### Median id02416

### Elastinen, Rap musician

- Gas8vbxnUY0/00022.m4a Yritetään mahdollisimman paljon ottaa haltuun sitä omaa, omaa ja niinku et vielä enemmän pääsee niiku tattiin siihe ...
- 3HiuJ-WxJHc/00001.m4a Joo aika lailla et ihan ite oon soitellu porukkaa läpi ja kyselly vähän mite...
- \_hK7xiwAfMQ/00045.m4a ... julkisuuden kanssa silleen et on aina kauheen varovainen kuitenkin siitä että ihmiset tunnistaa ja...
- HjVu1ILGcEQ/00030.m4a ... itse asiass mull on kyl vähän semmoset haukansilmät et kyl mä tostkin huomaan et kyl mä nään sieltä tutut tutut saan bongattuu ja blokattuu aika pitkällekkii miksauspyödyän taakse viel et tota ...
- 3HiuJ-WxJHc/00004.m4a ... ollaan kierretty omalla autolla ja sit vaihtoehtosesti lentokoneella jos on pistokeikkoi pohjoseen tai muuta mut et ...

### Furthest id06931

### Perttu Kivilaakso, Musician

- iOxMjjsPtW8/00013.m4a ... the different songs for the album we wanted to have this kind of literal influences outside demand ...
- 5YAM0D\_IV2o/00001.m4a ...the mentality of the both worlds like classical and heavy metal music. Therefore, I ...
- iOxMjjsPtW8/00015.m4a ... 'I'm not Jesus', we knew beforehand we met him in a Europe. And so there was ...
- kDySNZ69RSY/00018.m4a ... that was hilarious cos of course we had to kind of, we made ...
- 5YAM0D\_IV2o/00002.m4a ... interesting collaborations between a rock band and orchestra and you better not should miss it ...
- 5YAM0D\_IV2o/00004.m4a ... we have to find our own borders and go beyond them and aa ...
- nAdi0ISf4B4/00024.m4a ... code! With your personal code, only possibility to get it from ...

**Closest  
id09235**

**Éric Boullier, French motor racing F1 manager**

qtNhWEoIpck/00230.m4a

But to put McLaren Honda back to the full as a grid we have aa just need to keep the commitment we have, the dedication we have aa and the trust we have as well is in our human force which is very important. We have to work hard to make sure, you know, to make sure we will deliver on every bit the maximum ...

qtNhWEoIpck/00223.m4a

...below the expectation, so we have to be carefull, and we need to first aa test, make sure the machinery is working behind the track but on the track as well aa and then we will more or less by the end of the, let's say testing program, we will know where we are...

**Median  
id10354 (VoxCeleb1)**

**Guillaume Canet, French actor and director**

XR0sKT4Qvgk/00008.wav

Just that sometimes we needed more information to be sure that ...

XR0sKT4Qvgk/00003.wav

So that's that's that's why I really liked more this story because it was it was a little bit more original.

rXuQDi5A0kI/00002.wav

...that was one of the first time I could see myself directing something that I was not writing, you know, because I usually I like to be in the writing...

XR0sKT4Qvgk/00009.wav

You know when you are doing a film with the director you should trust him and be sure that um no matter what... no matter what ...

XR0sKT4Qvgk/00002.wav

...they can help because they started in the wrong way not in a wrong way but it started as really good friends..

**Furthest  
id01043**

**Bill Gilman, American pop singer**

9zVJF3bks0I/00051.m4a

I just can't wait to um rest knowing that I lay it all on the line, there is nothing more I could have done and to come on this show and inspire someone to be their best selves and to create a little bit more positivity in this world that we desperate need through lyrics and through songs 'cause I do believe that that transcends all our differences right now.

GA2YwIi3YAA/00061.m4a

To lend my voice to where the cause is such as special olympics in it and it is a great thing for me because I do so many nationally aa national driven you know ah charities and it is so great that this one in this specific moment is um local and stays within the Rhode Island borders so it's a it feels good to be representing...

## Target speakers for attacker impersonator: M4

### Closest id07747

### Samuli Edelmann, Actor, singer

- mStkPBB9e6E/00015.m4a ...vuosia sitte kolkuttelee uudestaan silloin kun unelma kolkuttelee ovelle niin silloin parempi herätä ja mennä avaamaan se ovi ja...
- mStkPBB9e6E/00022.m4a ..No joo itseasiassa enne kuvauksii nii kyllhä mä olin treenannu jo monta vuotta kolme vuotta ainakin tai...
- u2lVys6XGc0/00024.m4a ...aa kyllähä me ollaa Veskun kans on puhuttu jo aika pitkään et ois kiva tehdä jotain yhdessä ja...
- u2lVys6XGc0/00027.m4a ...hengen heimolaisuus et miten maailman ja taiteen tai tekemisen kokee ja...
- e9cQ8NfqLqg/00009.m4a ...so that's one reason why this guy only concentrates into playing piano and that's his life...

### Median id08719

### Tuomas Holopainen, Musician

- jym1WZTruQ/00051.m4a ...laulaa sillä tavalla että ne biisit soundaa järjettömä hyvälle hän soundaa järjettömä hyvälle kuulostamatta...
- lER9exL8ehQ/00056.m4a ...kiva ku kiinnostaa, saattaaha se olla et kukaa halua meitä haastatella ja sillois kyllä joku pahasti...
- lER9exL8ehQ/00058.m4a ...Ollakin mutta johonkin pitää vetää sitte raja, mut kukii tyylillä en mä nyt haluu...
- pPDNEIt4d7U/00064.m4a ...as like taking responsibility, and kind of like doing my job ...
- \_npFCRoEX8s/00043.m4a ...how how would you say like preaching or to going...

### Furthest id04494

### Jyrki Katainen, Politician

- JkRPoEVksyM/00147.m4a ...rakentamiseksi myös tulevilla vuosikymmenillä. Sellainen unioni on Suomen ja suomalaisten etu...
- JkRPoEVksyM/00146.m4a ... meidän pitää jatkaa aktivista ja rakentavaa työtä yhtenäisen, vahvemman ja reilumman unionin rakentamiseksi...
- 1ifK6cN\_l8U/00018.m4a ... needs at the moment it's aa transformation from science to innovations and at the heart of innovations there are always entrepreneurs. So that's why universities could be...
- 1ifK6cN\_l8U/00012.m4a It's quite natural step forward to come to the commission and concentrate purely on European issues...
- d7BrEA4tnWU/00282.m4a ... also some American companies have been interested in. I also visited in Singapore where some fund managers said that they are planning to invest more...

**Closest  
id01695**

**Ciarán Hinds, Irish actor**

- KiJFA6VC8E/00050.m4a ...it's kind of a thrill to come up and offer up, and I know it is a big fi-film festival, it has been going for over 20 years or so, but right now, it's aa...
- HrTe8bRutMA/00028.m4a The man is in denial as well, he hasn't fully face up to his own grief and history, so it's not as if he...
- 25cslnkZkac/00004.m4a Genuinely a very warm hearted man, a a a very open with everybody, but see the way he goes to work very quietly, of course that's because, I imagine, he's keeping the essence of the character and ...
- ny5ls0WuHZY/00108.m4a He will be very happy aa if you could contribute something, aa so I went and I met them and I said "ai well, I can't really be hands on because I, I never here, but I will support you, you know, I will come when I can "...

**Median  
id03523**

**Ian Kinsler, American, baseball player**

- B2kAHmVmpnw/00014.m4a ...we see guys leave every year thi- this is a little more significant this year because those guys are big part of our team but aam...
- bsNNkRF9Zi8/00058.m4a ...that you just had and try to make the adjustments that you need to make and aaa talk to people that are close to you that will be honest with you aan and you are trying to make adjustments that are necessary ...
- BKl6XE094A0/00021.m4a Named Yogi, after Yogi bear, it's kind of my dad's choice he is big Yankee fan so kind of try to keep it after baseball players...
- 6824z0jNHN4/00008.m4a Yeah we have, aa the off season has been been nice, I mean just like any other off season you get time to rest you get time to prepare...

**Furthest  
id06971**

**Phil Mickelson, American professional golfer**

- IUUM2Rtissg/00121.m4a I think about it yet but, it also brought me some of the greatest joy in my life so t-to be able to be there means a lot to me ..
- da4tmtzuAaM/00199.m4a ...before I could even walk, about playing the game of golf, I would watch my dad hit balls in the backyard dreaming of being able to stand up, so I can hit my first shots...
- TSMvlwuXqgU/00166.m4a ... you can't do that here because you don't have those birdie opportunities to offset it -offset those mistakes I didn't have that many birdie opportunities, my irons were aa...
- 0s3NiwMJmWQ/00008.m4a ...I was doing everything I could to make par, I felt like 200 par was more than enough i-it's...

## Target speakers for attacker impersonator: F1

### Closest id00638

### Anna Puu, Pop singer

aI3y29oPp48/00047.m4a	Erilasii... me tehään Umon kaa siis selkee niin ku joulukiertue, et siellä mä en esitä omaa materiaalia ollenkaan...
aI3y29oPp48/00045.m4a	Mä aina puhun aika paljon tämmösestä niin kun intuitioasioista ja tää oli yks...
Tr1BUJJoM8I/00035.m4a	...Oikeasti tärkeintä on se et löytää sen tasapainon niitten molempien välillä että...
aI3y29oPp48/00046.m4a	...päätöksentekoo ja sit sit mä kävin siellä Fridaylla, toki se on mulle tuttu studio jo ennestään ku muon kaikki levyt siellä tehny...
PfQR8rjCAbY/00029.m4a	...Globe Hope on tehny mulle vanhoista Helsinki-huiveista, tammöisen...
naTyum_XCuo/00053.m4a	...myötä tullu vähä hankalammaks et kun ei oo minkäänlaisia viikkorutiineja, et joka päivä ...

### Median id04584

### Karita Mattila, Opera singer

KG1yYINxcq4/00012.m4a	...tiettyjä oli hirveellistä ruokia mitä ei uskaltanu syödä ja kauheeta tämmösiä paineita ...
gaJrcXE_NzA/00023.m4a	...Suomen tämän hetken suurimpana modernin musiikin säveltäjänä ainakin mulle...
zsDIR9VQGHs/00033.m4a	...you need a good coach to work because aaa Czech for me ...
Tfn2okQ6RYc/00014.m4a	I had the great pleasure of aa performing on live performances in London and in Great Britain aa over many years ...
Tfn2okQ6RYc/00021.m4a	...aaa to salute you and to thank you and make a toast for long live live performances...

### Furthest id08421

### Tarja Halonen, Politician

7a-KjV2ENl8/00008.m4a	...kukin osa-aluee ihmiset kokisivat itsensä ee mukana oleviksi. Me kaikki olemme tässä tietysti mukana myöskin kuntalaiset äänestäjät...
KadSj2X5Uyk/00012.m4a	...ensimmäinen ostos on aina se ratkaiseva ostos, että nyt kun me ollaan kierrätys paikassa nii tää on se niin ...
tK2VizMRPKo/00258.m4a	...kiinnostus uusia tapoja ja kulttuureja kohtaan, auttaa rakentamaan molemminpuolista luottamusta ja arvostusta...
zMSWA-FKHRE/00291.m4a	...crossing the Finnish border, so we are no concern of that but aa but I think is that the energy issue should be important ...
evf3FBsG_ek/00132.m4a	We belong to the Schengen, that as soon as you you enter to Finland you have also the the right ...

**Closest  
id10497 (VoxCeleb1)**

**Jessie J., British pop singer**

- EsHJPBrSHlw/00006.wav ...and taken out until someone else has put in, so, it's really boring, but they have to connect the bones after almost...
- Hw5BvPZGWeU/00001.wav ...J my album Sweet Talker is out today, aam you know aaa it's my third album. Aam my first single...
- EsHJPBrSHlw/00011.wav ...be, I kind of get frustrated of campaigns and stuff 'cause for me it's not...
- OS6jfTphRl0/00009.wav ... umm, the good and the bad and I felt like this new album Sweet Talker is a great...
- IJ2n-nuFnvo/00006.wav ...kids the, you know, sometimes need more love than the kids that get bullied.. ehm.. you know.. say mean stuff, and I was very lucky that I have parents that...

**Median  
id10123 (VoxCeleb1)**

**Candace Cameron, American actress**

- zH8\_9lss\_mY/00005.wav ...Feminists that their not, that their anti-women if they are not supporting another women it's um, you know that's to me what's wrong with feminism...
- bs7ZVVqAGCU/00004.wav gifts for them too, and then we go back to our house, and with the kids and my husband and me have a little amm...
- 9kgJaduwKkY/00002.wav ...fans. I love it. I have some of the best fans ever, I mean, they have been with me for thirty-some years, so I love engaging with them, but...
- bs7ZVVqAGCU/00010.wav ...industry and I'm still back aam, after, well you know, I started working at about six years ago....

**Furthest  
id10688 (VoxCeleb1)**

**Lin Shaye, American actress**

- mLvRpEJ90Vs/00003.wav ...the writing, he loves to write, but he also loves acting. I know that's... I think that's one of his first loves. We all know he's never directed...
- mLvRpEJ90Vs/00002.wav ...story is well that Lee, Lee has been written a brilliant script I think, he's totally... mm... I think even surpassed even the first two...
- l6ZF3b7LrYo/00003.wav It was too much the same, amm for another actress it might of been fine but when Kevin asked me to do this, amm I was looking for a...
- t0FDRBbgjb0/00001.wav But all in all, the the flavor and colors that he was able to...

## Target speakers for attacker impersonator: F2

### Closest id08125

### Sofi Oksanen, writer

- p2zBS0bS170/00248.m4a ...ilmapiiri muuttui, mutta kirja ei silti julkaistu uudelleen huolimatta siitä että ...
- 0bbazrYK9pc/00001.m4a ..jokainen jako on teko, jokainen kommentti on teko, samoin reagointi johonkin asiaan. Ja jokaisella jaolla, kommentilla, reagoinnilla on merkitystä myös asioissa joita ei ehkä ensimmäiseksi tule ajatelleeksi...
- e5y4Yo\_gzTY/00188.m4a ...mä halusin kuvata jonkin verran tätä kuuskytluvun tasarvo tilannetta ...
- nOp8zr3931Q/00218.m4a who are outside Estonia, so I am not actually writing for Estonians, they know their their own history so aam..
- UAznVZkMKdU/00081.m4a ...create a new narrative for for history. And it is said, out loud, that actually the history research...

### Median id04527

### Kaisa Mäkäräinen, Biathlete

- wx\_sgSXxFKA/00117.m4a ..täällä pitkin, kaupungin katuja vähän hieronnan jälkeen verryttelemässä ...
- 5q5NP2FYiW0/00042.m4a ...sitä elämästä että et silloin kun sä olet asettanut jonkun tavoitteen oikeesti tsemptaat ites tekemään sen homman kunnolla ja ...
- MKPPkoqXpM4/00070.m4a ... että et musta on mukava tukea paikallisia työntekijöitä ja paikallisia yrityksiä ...
- GuIp2z4ODFY/00055.m4a ...standing shooting, so I was kind of prepared that it can be very...
- 8jCnTBFarWk/00047.m4a ... place where I stand ten minutes an in the stadium. I was looking around that oh I know this corner, I know that house (hah), everything is like a ...
- RgQHquIMcG4/00085.m4a ... it has looked like that only the big nations can take the medal...

### Furthest id08421

### Tarja Halonen, Politician

- 7a-KjV2ENI8/00008.m4a ...kukin osa-aluee ihmiset kokisivat itsensä ee mukana oleviksi. Me kaikki olemme tässä tietysti mukana myöskin kuntalaiset äänestäjät...
- KadSj2X5Uyk/00012.m4a ...ensimmäinen ostos on aina se ratkaiseva ostos, että nyt kun me ollaan kierrätys paikassa nii tää on se niin ...
- tK2VizMRPKo/00258.m4a ...kiinnostus uusia tapoja ja kulttuureja kohtaan, auttaa rakentamaan molemminpuolista luottamusta ja arvostusta
- zMSWA-FKHRE/00291.m4a ...crossing the Finnish border, so we are no concern of that but aa but I think is that the energy issue should be important ...
- evf3FBsG\_ek/00132.m4a We belong to the Schengen, that as soon as you you enter to Finland you have also the the right ...

**Closest  
id02746**

**Fay Ripley, American actress and author**

- UYUfAfbQ3g8/00034.m4a ...I I like them to be quite light hearted and fun but also those are the ones that I think...
- pWzpSbOOkvc/00073.m4a ...aam well, I when I look at myself I just think that I look like my dad in a dress...
- eKVRwsMJYu8/00055.m4a Leave the top of your pineapple because that makes it really retro, very 70s feel I feel...
- Tt7m7FIv2kk/00019.m4a Maybe in the sense that I love cooking. I love food and I love cooking. Now I didn't predict that I would write a cooking book but, I have been thinking about this for a long time, to be fair. It has been bubbling away, on my stove...
- Wwqjrpegy9s/00040.m4a Recently I was kicked out of a job because I was wearing too much make up and the aa and the drama teacher went "Oh yeah, you could do that"...so I went "all right then"...

**Median  
id00939**

**Belçim Bilgin, Turkish actress**

- sJaIs19Xaiw/00081.m4a ...really able to see we can feel that every moment is so poetic. Not only the poems...
- ihL6WDoO75c/00044.m4a You feel like you're on a level to speak about everything for them...
- ZqFqsN\_a1I1/00017.m4a ... and also we are always talking about the basic human, aam, conflicts and emotions and...
- ihL6WDoO75c/00030.m4a ...people love the movie and they want to speak about it and they're inspired by the movie. Yesterday we were in San Diego and the people were telling that..

**Furthest  
id10061 (VoxCeleb1)**

**Anne\_Hathaway, American actress**

- ZHngnr\_39ss/00010.wav I started off the film with a great sense of admiration for him and honestly it increased every single day and to the point where now he's, he's just one of my favorite people. I'm, I'm a big believer in Matthew McConaughey...
- ChVXy6IHQsA/00005.wav ... twenty plus times, but it - it - it was actually the fourth take that wound up into in the film. And Tom came up to me at the end of the take and said, "you know I have it."...
- ut8dzAUnDp4/00005.wav The take is being shot in its entirety from all angles so there's choices in the editing room later on. I find that let's me relax and, and let go...
- ChVXy6IHQsA/00001.wav It it is very exciting to be going through aa this moment and the films getting such...



## Common target for male attackers

**id03557**

**Ilkka Kanerva, Finnish politician.**

l7x4I6VgSZU/00022.m4a

Sen myötä keskeiseen rooliin Ukrainan ja Venäjän välisen sodan selvittämisen...

l7x4I6VgSZU/00024.m4a

Monetkin kuntien tehtävistä ovat sen kaltaisia, jotka nyt näitte SOTE-uudistusten...

lISWlnfhvpQ/00026.m4a

...tässä juuri parhaillaan näemme että maksukortin taakse siirtyy yhä useampi ja useampi urheilutapahtuma. Tavallisten perheitten, tavallisten kotitalouksien, nuorten ulottumattomiin, ja se on se on suuri haaste...

YLjGB6sccXg/00017.m4a

We know that we need very clear commitment from Russian side...

m0PXIYTVteY/00030.m4a

...and hope all the best to you. And I'm very convinced about aa our successful...

m0PXIYTVteY/00031.m4a

...mutual collaboration in the names of the civilized international community, all the best to your work and congratulations...

**id05124**

**Leonardo DiCaprio, American actor**

UW7a8v087zY/00287.m4a

...you find people like this and I have met a lot of people like this whose entire world is co-consume by wealth...

V7nj5ldewUM/00308.m4a

It involved a, you know, months of rehearsal, involved him watching a hundred different bear attacks but what you achieve...

VEwe43kSyVg/00315.m4a

Everyone knew, including the director and the crew and the cast, what we were signing up for. Specially doing a film that it is shot all in natural light, in real elements with changing weather patterns constantly..

Xcv07pkxnPM/00337.m4a

...presented in the media you have the aa you have the consensus of the greatest minds in the world, the greatest scientist, the Nobel laureates...

## Common target for female attackers

### id07087

#### Paivi Räsänen, Politician

- I3QpEPJHNbs/00004.m4a ... samaistumaan moni moni siihen raipoon. Mut oikea vastaus ei kuitenkaan oo mielestäni tuo kuoleman rangaistus...
- ogCsERk9joo/00016.m4a Silla tavalla me ajatellaan terveydenhuollossa, ihmistä ja ihmisen elämän arvoa ja myös lääketieteen...
- u05RyXinxxc/00050.m4a Varmasti erilaisia mielipiteitä tulee mutta silloin täytyisi tuoda myös niitä todellakin vaihtoehtoisia esityksiä joita ei tule muuten yhden...
- 2yZKyxQlWSo/00001.m4a ...need more immigrants and it is aa that is why that aa...
- gMHm2aEyPCs/00010.m4a ...the marriage would have the same basis also in in future...

### id03460

#### Hillary R. Clinton, American politician

- 4CnDWySwIUE/00031.m4a Due to make education work and as somebody who has spent a lot of time, in a lot of classrooms, I am thrilled that...
- fAlK6zxYknQ/00318.m4a Actually surrounded by people were talking at him, not talking back, so finally I ...
- jrv2Bw\_c8jA/00340.m4a ..deal with the string of accusations that, ah, he was putting forth...
- MjKsGhwcCIY/00144.m4a So we're making progress, I wish it would go faster, they certainly wish it would go faster but we're on the right path...
- RFLQrhgyU2Q/00171.m4a ...there would be vigorous debate, aaa, but I say in the book, I believe, aa, from both my understanding of history and my ...