

**Whose Fingerprint Does the News Show? Developing Machine Learning
Classifiers for Automatically Identifying Russian State-Funded News in
Serbia**

OGNJAN DENKOVSKI

University of Amsterdam, The Netherlands

DAMIAN TRILLING

University of Amsterdam, The Netherlands

Online Appendix

Appendix A

News categories associated with each outlet

Sputnik ($N = 2157$)

- World [Свет]
 - Europe [Европа]
 - Region [Регион]
 - Russia [Русија]
- Politics [Политика]
- Economy [Економија]
- Culture [Култура]
- Armaments [Наоржање]

We use world, politics, economy, culture, and uniquely to Sputnik armaments.

Vostok ($N = 2404$)

- Russia [Русија]
- Politics [Политика]
- Security [Безбедност]
- Economy [Економија]
- Society [Друштво]
- Region [Регион]
- Analysis [Анализе]
- Culture [Култура]

VOA distribution ($N=779$)

- Current news [Актуелно]
- Balkans [Балкан]
- America [Америка]
- Society [Друштво]
- Global topic [Глобалне теме]
- Culture [Култура]
- Economy and finance [Економија и финансије]

RFE ($N = 1695$)

- Current news [Актуелно]
- Balkans [Балкан]
- America [Америка]
- Society [Друштво]

- Global topic [Глобалне теме]
- Culture [Култура]
- Economy and finance [Економија и финансије]

N1 ($N=3765$)

- News [Вести]
- World [Свет]
- Region [Регион]
- Culture [Култура]

Appendix B

Codebook progression, three versions

VERSION I

STUDY OVERVIEW

This study examines the structural features of U.S. and Russian state backed news operating online in Serbia. For the purpose of this study, Russian state backed news is understood as an example of Russian disinformation operations abroad, while U.S. state backed news is considered as representative of traditional and reputable journalism. In response to a lack of comprehensive research examining the characteristics of Russian disinformation content, this paper examines whether, and if so how, content produced by Russian websites like *Sputnik* is structurally distinct from that of mainstream Western outlets. Your input is used for the development and evaluation of a supervised machine learning classifier that can recognize these distinctions with a high degree of accuracy.

CODING MATERIAL AND STEPS

You are asked to complete all articles from the Training and Reliability documents (N=60), while a minimum of 150 articles is required from the Machine file with your name.

Each article in the word files is assigned with a unique item identifier. You are also assigned with a unique coder identifier.

Unique coder ID (CODER NAMES BLINDED FOR PEER REVIEW)

DD – CODER NAME

MR – CODER NAME

OD – Ognjan Denkovski

SD – CODER NAME

TD – CODER NAME

Coding basics

An article and its title are referred to as an **item** and together they form the unit of analysis in the study. A *frame* can be present in the title, in the article body or in both and we do not distinguish between the location(s) of the frame. The definitions and indicators for each frame are elaborated below, along with example statements which are meant to help you with your interpretation of the codebook. The frames we are examining are: A) Human Interest, B) Conflict, C) Morality, D) Serbian Victimhood, E) Anti-Western, F) pro-Russian, and G) Russian might.¹

Important coding notes

- An item can contain none of the frames, some of the frames or all of the frames. The presence or absence of frames is determined through answers to indicator

¹ For the initial version of the study, coders were instructed to also code the presence of the Human Interest, Conflict and Morality frames. These frames were dropped at a later stage of the analysis and are not accounted for in the study findings presented in the paper.

questions. Indicator questions are answered through statements which make up the item or through the item as a whole.

- **A frame is considered present if the answer to at least one of the indicator questions is YES.**
- Some statements indicate the presence of two or more frames.
- Some statements are clearer than others – please consult the example “clear” and “borderline” statements provided for each frame when making decisions.

Using Qualtrics

The link (Qualtrics) which you received in the e-mail takes you to the questions for the study. The survey flow is the same each time and consists of 10 input fields.

Q1. Insert your unique coder ID, found in this document.

Q2. Insert the article ID, found in the relevant word document.

Q3. Indicate the word document to which the article belongs.

Q's A-G. Answer 'YES' or 'NO', depending on the presence or absence of a frame.

Note field. Input any notes which you consider relevant for the frame interpretation or concerning issues with the data. This field is **not** required.

Always close and open the Qualtrics link again after completing an article to start coding the next article.

Contact information

If you have any questions please feel free to contact me on PERSONAL EMAIL REMOVED or on WhatsApp on PERSONAL NUMBER REMOVED.

Thank you and good luck with coding!

CODEBOOK

A. Human Interest frame

Definition: This frame brings a human face or an emotional angle to the presentation of an event, issue, or problem. This frame refers to an effort to personalize the news, dramatize or “emotionalize” the news, in order to capture and retain audience interest.

Note:

A quote from a politician or official does not mean that a human interest frame is present. A human interest frame should also not be indicated when an entire news story is developed around a specific person (e.g. Khashoggi murder). See the example clear statement for further clarification.

Answer with YES if at least one below is yes.

Indicators

1. Does the item provide a human example or a human face to the issue?

2. Does the item employ adjectives or personal vignettes that generate feelings of outrage empathy or caring?

Example clear statement:

- Student Filozofskog fakulteta Miloš Dekić govori za Glas Amerike o tome kako je pozvan da da izjavu, pa izveden pred sudiju i kako je brzo završio u zatvoru, a još brže "iz njega izbačen".

Example borderline statement:

- **Visokoobrazovana osoba iz centra Beograda, koja ima posao i stara je 35 do 40 godina - ovako bi, na osnovu danas predstavljenog istraživanja organizacije "Secons" mogao da izgleda foto robot prosečnog učesnika protesta "Jedan od pet miliona" u Beogradu.**

☐ *Even though no individual is directly referenced, this statement does use a human example and does indicate the presence of a human interest frame.*

B. Conflict frame

Definition: This frame emphasizes conflict between individuals, groups, or institutions, often as a means of capturing audience interest.

Answer with YES if at least one below is yes.

Indicators

1. Does the item reflect disagreement or conflict between parties, individuals, groups or countries?
2. Does the item refer to two sides or more than two sides of a problem?

Example clear statements:

- SAD: Rusija preti NATO savezu na celom istočnom boku, preduzeće se paket mera
- Vučić: Nasilje neće proći, država će sa siledžijama uspeti da se izbori
- Netanjahu je izveštaj označio "klevetom", a njegov glavni rival Beni Ganc ga je optužio za "pokušaj krađe izbora".

Example borderline statements:

- Tviter blokirao lažne pro-Netanjahu naloge u Izraelu
- ☐ *No explicit conflict is noted here, but depending on the context this statement may indicate the presence of the conflict frame.*

C. Morality frame

Definition: This frame puts the event, problem, or issue in the context of religious tenets or moral prescriptions. Because of the professional norm of objectivity, journalists often make reference to moral frames indirectly—through quotation or inference, for instance—by having someone else raise the question.

Answer with YES if at least one below is yes.

Indicators

1. Does the item contain any moral message?

2. Does the item make references to morality, God or other religious tenets?

Example clear statement:

- Stav Srpske pravoslavne crkve i Srbije o ukrajinskom crkvenom pitanju je ispravan i nadamo se da će tim putem krenuti i druge pravoslavne pomesne crkve, rekao je prekjuče u Beogradu mitropolit volokolamski Ilarion.
- Mitropolit crnogorsko-primorski Amfilohije osudio je namjeru crnogorskih vlasti da ruše krstionicu na Miholjskoj prevlaci, uz ocenu da „obezbožena država“ želi da otima hramove od Srpske pravoslavne crkve.

Example borderline statement:

- Skandalozni napad Britanaca na „Balkansku među”
☐ *This title does not necessarily indicate the morality frame on its own, but it is possible within the context of the item.*

D. Serbian Victimhood frame

Definition: This frame presents Serbia as a victim or as oppressed in global politics and history. Most frequently this frame is developed through references to the NATO bombing or the “loss” of Kosovo. This frame also applies to discussions about ethnic Serbs in Kosovo or Republika Srpska.

Answer with YES if at least one below is yes.

Indicators

1. Does the item make reference to the NATO bombing of Serbia?
2. Does the item make reference to Kosovo as illegitimate or as a threat to Serbs and Serbia?
3. Does the item make reference to oppression of Serbs by other groups in the region?

Example clear statement:

- Prištini uručeno novo „oružje” za etničko čišćenje Srba
- Stradanje Srbije se ne sme zaboraviti: Predstavljeni novi rezultati o posledicama NATO agresije

Example borderline statements:

- Koliko je zaista Albanaca na Kosovu
☐ *While not making a direct reference to Serbian victimhood, this title may belong to an article which indirectly questions the legitimacy of Kosovo.*

E. Anti-Western frame

Definition: This frame focuses on the activity by Western actors (represented by the EU, NATO or the USA) in a mocking manner or alternatively through depicting actions of these actors as aggressive or dangerous. This frame can also be present in items where Serbia is not discussed.

Answer with YES if at least one below is yes.

Indicators

1. Does the item negatively or mockingly evaluate a statement or action from the EU, NATO or the USA?
2. Does the item make reference to NATO, the EU or the USA as detrimental or as a threat to Serbian or global issues?

Example statements:

- Uporedo sa neposrednom vojnom agresijom, političkim pritiskom i ekonomskom blokadom, važnim elementom NATO agresije, javlja se i specijalni informacioni rat koji su sprovodile zemlje Zapada protiv srpskog naroda.
- Agresiju na svetski poredak NATO je uigravao u Jugoslaviji
 - ☐ *Almost all statements from this frame can also be included in the Serbian victimhood frame, especially if mentioning NATO.*

Example borderline statements:

- Nije 'Tajms' imao takve komentare kad su kosovski Šiptari tri dana sprovodili krvavi pir, ubijali ljude, rušili pravoslavne crkve
 - ☐ *Considered as indicative of the anti-Western frame as the main intention of this statement is a criticism of reporting by Western outlets.*

F. Pro-Russian frame

Definition: This frame emphasizes the tangible relationship between Serbia and Russia, while encouraging pro-Russian attitudes and emphasizing a shared Slavic identity, often in contrast with Western values.

Answer with YES if at least one below is yes.

Indicators

1. Does the item make reference to the positive business, economic, military or political relationship between Russia and Serbia?
2. Does the item make reference to Russia's commitment to protect Serbia and Serbian identity?
3. Does the item make reference to a shared Slavic identity?

Example clear statements:

- Međunarodna civilna vežba, u organizaciji Ministarstva unutrašnjih poslova Republike Srbije i Ministarstva za civilnu zaštitu, vanredne situacije i otklanjanje posledica elementarnih nepogoda Ruske Federacije, biće održana u junu u Nišu.
- Hvala Rusima i Rusiji za sve ono, što do sada, za nas Srbe učiniše. A pogotovo im hvala na pruženoj pomoći, da mi, kao narod, sa Srbskom državom opstanemo i do današnjih dana

G. Russian might frame

Definition: This frame focuses on the "might" and relevance of the Russian state in global geo-politics, economy and international relations. The frame also consists of positive evaluations of past or current Russian politicians.

Answer with YES if at least one below is yes.

Indicators

1. Does the item glorify the Russian state, economy (including gas pipeline projects), culture or military?
2. Does the item positively evaluate the actions from Russian politicians or business?
3. Does the item positively contrast Russia to the West?

Example clear statements:

- “On[Putin] to radi iscrpno, obraćajući se direktno narodu, razgovarajući sa predstavnicima različitih profesija i socijalnih krugova, korišćenjem medija”, zaključio je Peskov
- Prototip protivvazdušnog raketnog kompleksa malog dometa „tor“ napravljen je u Rusiji i prošao niz testiranja, dokazavši svoju **efikasnost**, saopštio je u intervjuu Sputnjiku generalni direktor vojne kompanije „Kupol“

Example borderline statements:

- Miler je optužio grupu ruskih državljana za mešanje u američke izbore 2016. godine. Pritom se naglašava da ni Tramp ni njegov tim nisu bili u dosluhu sa Rusijom. Kremlj je optužbe na račun Moskve nazvao neodrživim i neosnovanim.

Even though no direct reference is made to any of the indicators, the Kremlin is presented as “above” Western accusations for which reason this statement should be considered indicative of the frame.

- Visoki zvaničnik dalje tvrdi da će Rusija pokušati da potkopa NATO kao savez i da će predstavljati izazov za Sjedinjene Američke Države u svim regionima sveta, uključujući i Arktik.

This statement indirectly references Russian might in global politics.

VERSION II

STUDY OVERVIEW

This study examines the structural features of U.S. and Russian state backed news operating online in Serbia. For the purpose of this study, Russian state backed news is understood as an example of Russian disinformation operations abroad, while U.S. state backed news is considered as representative of traditional and reputable journalism. In response to a lack of comprehensive research examining the characteristics of Russian disinformation content, this paper examines whether, and if so how, content produced by Russian websites like *Sputnik* is structurally distinct from that of mainstream Western outlets. Your input is used for the development and evaluation of a supervised machine learning classifier that can recognize these distinctions with a high degree of accuracy.

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Important coding notes

- An item can contain none of the frames, some of the frames or all of the frames. The presence or absence of frames is determined through answers to indicator questions. The answers to indicator questions are obtained through parts of an item (sentences or paragraphs) or through the item as a whole.
- **A frame is considered present if the answer to at least one of the indicator questions is YES.**
- Some statements indicate the presence of two or more frames.
- Some statements are clearer than others – please consult the example “clear” and “borderline” statements provided for each frame when making decisions.

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CODEBOOK

B. Human Interest frame

Definition: This frame brings a human face or an emotional angle to the presentation of an event, issue, or problem. This frame refers to an effort to personalize the news, dramatize or “emotionalize” the news, in order to capture and retain audience interest.

Note:

A quote from a politician or official does not mean that a human interest frame is present. **If the personal life of a politician is discussed (affairs, family), then it is a human interest frame.** A human interest frame should also not be indicated when an entire news story is developed around a specific person (e.g. Khashoggi murder). See the example clear statement for further clarification.

Answer with YES if at least one below is yes.

Indicators

3. Does the item provide a human example or a human face to the issue?
4. Does the item employ adjectives or personal vignettes that generate feelings of outrage empathy or caring?
5. **Does the story emphasize how individuals and groups are affected by the issue/problem?**

Example clear statement:

- Student Filozofskog fakulteta Miloš Dekić govori za Glas Amerike o tome kako je pozvan da da izjavu, pa izveden pred sudiju i kako je brzo završio u zatvoru, a još brže "iz njega izbačen".

Example borderline statement:

- **Visokoobrazovana osoba iz centra Beograda, koja ima posao i stara je 35 do 40 godina - ovako bi, na osnovu danas predstavljenog istraživanja organizacije "Secons" mogao da izgleda foto robot prosečnog učesnika protesta "Jedan od pet miliona" u Beogradu.**
 - ☐ *Even though no individual is directly referenced, this statement does use a human example and does indicate the presence of the human interest frame.*

Clear example presence:

- ☐ **Unique ID2 (Russian spy)**
- ☐ **Unique ID 8 (Banja Luka festivities incident)**

B. Conflict frame

Definition: This frame emphasizes conflict between individuals, groups, or institutions, often as a means of capturing audience interest.

Answer with YES if at least one below is yes.

Indicators

3. Does the item reflect disagreement or conflict between parties, individuals, groups or countries?
4. Does the item refer to two sides or more than two sides of a problem?

Example clear statements:

- SAD: Rusija preti NATO savezu na celom istočnom boku, preduzeće se paket mera
- Vučić: Nasilje neće proći, država će sa siledžijama uspeti da se izbori
- Netanjahu je izveštaj označio "klevetom", a njegov glavni rival Beni Ganc ga je optužio za "pokušaj krađe izbora".

Example borderline statements:

- Tviter blokirao lažne pro-Netanjahu naloge u Izraelu
 - o *No explicit conflict is noted here, but depending on the context this statement may indicate the presence of the conflict frame.*

Clear example article:

UniqueID6

Borderline example article:

Unique ID3

Unique ID 18

C. Morality frame

Definition: This frame puts the event, problem, or issue in the context of religious tenets or moral prescriptions. Because of the professional norm of objectivity, journalists often make reference to moral frames indirectly—through quotation or inference, for instance—by having someone else raise the question.

Answer with YES if at least one below is yes.

Indicators

3. Does the item contain any moral message?
4. Does the item make references to morality, God or other religious tenets?
5. **Does the item offer specific social prescriptions about how to behave?**

Example clear statement:

- Stav Srpske pravoslavne crkve i Srbije o ukrajinskom crkvenom pitanju je ispravan i nadamo se da će tim putem krenuti i druge pravoslavne pomesne crkve, rekao je prekjuče u Beogradu mitropolit volokolamski Ilarion.
- Mitropolit crnogorsko-primorski Amfilohije osudio je namjeru crnogorskih vlasti da ruše krstionicu na Miholjskoj prevlaci, uz ocenu da „obezbožena država“ želi da otima hramove od Srpske pravoslavne crkve.

Example borderline statement:

- **Skandalozni** napad Britanaca na „Balkansku među“
 - o *This title does not necessarily indicate the morality frame on its own, but it is possible within the context of the item. Often it is worth examining the specific terminology used.*

Clear example article:

Unique ID 17

Unique ID 12

Borderline example articles

☐ Unique ID 0

☐ Unique ID 1

☐ Unique ID 11 – all three of these examples could be coded as morality due to the quotes from politicians. From the three, UniqueID 11 comes closest to morality due to choice of language for criticizing Iran and would be coded as YES.

D. Serbian Victimhood frame

Definition: This frame presents Serbia as a victim or as oppressed in global politics and history. Most frequently this frame is developed through references to the NATO bombing or the “loss” of Kosovo. This frame also applies to discussions about ethnic Serbs in Kosovo or Republika Srpska.

Answer with YES if at least one below is yes.

Indicators

4. Does the item make reference to the NATO bombing of Serbia?
5. Does the item make reference to Kosovo as illegitimate or as a threat to Serbs and Serbia?
6. Does the item make reference to oppression of Serbs by other groups in the region?

Example clear statement:

- Prištini uručeno novo „oružje“ za etničko čišćenje Srba[☐]
- Stradanje Srbije se ne sme zaboraviti: Predstavljeni novi rezultati o posledicama NATO agresije

Example borderline statements:

- Koliko je zaista Albanaca na Kosovu
☐ *While not making a direct reference to Serbian victimhood, this title may belong to an article which indirectly questions the legitimacy of Kosovo.*

E. Anti-Western frame

Definition: This frame focuses on the activity by Western actors (represented by the EU, NATO or the USA) in a mocking manner or alternatively through depicting actions of these actors as aggressive or dangerous. This frame can also be present in items where Serbia is not discussed.

Answer with YES if at least one below is yes.

Indicators

3. Does the item negatively or mockingly evaluate a statement or action from the EU, NATO or the USA?
4. Does the item make reference to NATO, the EU or the USA as detrimental or as a threat to Serbian or global issues?

Example statements:

- Uparedo sa neposrednom vojnom agresijom, političkim pritiskom i ekonomskom blokadom, važnim elementom NATO agresije, javlja se i specijalni informacioni rat koji su sprovodile zemlje Zapada protiv srpskog naroda.

- Agresiju na svetski poredak NATO je uigravao u Jugoslaviji
 - ☐ *Almost all statements from this frame can also be included in the Serbian victimhood frame, especially if mentioning NATO.*

Example borderline statements:

- Nije 'Tajms' imao takve komentare kad su kosovski Šiptari tri dana sprovodili krvavi pir, ubijali ljude, rušili pravoslavne crkve
 - ☐ *Considered as indicative of the anti-Western frame as the main intention of this statement is a criticism of the reporting by Western outlets.*

Clear example article:

- ☐ Unique ID 12
- ☐ Unique ID 18

Borderline example:

- ☐ Unique ID 6 – This is confusing because the article ends with a statement about how a political party believes that the U.S. means harm to Venezuela. Arguably this is just reporting of a view. From the context of the article we cannot infer an anti-Western frame here.
- ☐ Unique ID 3 – this is interesting, because the anti-West frame is too subtle to code (flags). But without knowing who wrote this, we shouldn't call it anti-West.

F. Pro-Russian frame

Definition: This frame emphasizes the relationship between Serbia and Russia, while encouraging pro-Russian attitudes and a shared Slavic identity, often in contrast with Western values.

Note:

Serbia has to be mentioned for this frame.

Answer with YES if at least one below is yes.

Indicators

4. Does the item make reference to the positive business, economic, military or political relationship between Russia and Serbia?
5. Does the item make reference to Russia's commitment to protect Serbia and Serbian identity?
6. Does the item make reference to a shared Slavic/Orthodox identity?

Example clear statements:

- Međunarodna civilna vežba, u organizaciji Ministarstva unutrašnjih poslova Republike Srbije i Ministarstva za civilnu zaštitu, vanredne situacije i otklanjanje posledica elementarnih nepogoda Ruske Federacije, biće održana u junu u Nišu.
- Hvala Rusima i Rusiji za sve ono, što do sada, za nas Srbe učiniše. A pogotovo im hvala na pruženoj pomoći, da mi, kao narod, sa Srbskom državom opstanemo i do današnjih dana.

Clear example article:

- ☐ Unique ID 19
- ☐ Unique ID 12

G. Russian might frame

Definition: This frame focuses on the “might” and relevance of the Russian state in global geo-politics, economy and international relations. The frame also consists of positive evaluations of past or current Russian politicians.

Answer with YES if at least one below is yes.

Indicators

4. Does the item glorify the Russian state, economy (e.g. gas pipeline projects), culture or military?
5. Does the item positively evaluate the actions from Russian politicians or business?
6. Does the item (positively) contrast Russia to the West?

Example clear statements:

- “On[Putin] to radi iscrpno, obracajući se direktno narodu, razgovarajući sa predstavnicima različitih profesija i socijalnih krugova, korišćenjem medija”, zaključio je Peskov
- Prototip protivvazdušnog raketnog kompleksa malog dometa „tor“ napravljen je u Rusiji i prošao niz testiranja, dokazavši svoju **efikasnost**, saopštio je u intervjuu Sputnjiku generalni direktor vojne kompanije „Kupol“

Example borderline statements:

- Miler je optužio grupu ruskih državljana za mešanje u američke izbore 2016. godine. Pritom se naglašava da ni Tramp ni njegov tim nisu bili u dosluhu sa Rusijom. Kremlj je optužbe na račun Moskve nazvao neodrživim i neosnovanim.
 - *Even though no direct reference is made to any of the indicators, the Kremlin is presented as “above” Western accusations for which reason this statement should be considered indicative of the frame.*
- Visoki zvaničnik dalje tvrdi da će Rusija pokušati da potkopa NATO kao savez i da će predstavljati izazov za Sjedinjene Američke Države u svim regionima sveta, uključujući i Arktik.
 - *This statement indirectly references Russian might in global politics.*

Clear example article:

□ Unique ID 15

Borderline example articles:

□ Unique ID 15

□ Unique ID 4

VERSION III

STUDY OVERVIEW

This study examines the structural features of U.S. and Russian state backed news operating online in Serbia. For the purpose of this study, Russian state backed news is understood as

an example of Russian disinformation operations abroad, while U.S. state backed news is considered as representative of traditional and reputable journalism. In response to a lack of comprehensive research examining the characteristics of Russian disinformation content, this paper examines whether, and if so how, content produced by Russian websites like *Sputnik* is structurally distinct from that of mainstream Western outlets. Your input is used for the development and evaluation of a supervised machine learning classifier that can recognize these distinctions with a high degree of accuracy.

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TD – CODER NAME

Coding basics

An article and its title are referred to as an **item** and together they form the unit of analysis in the study. A *frame* can be present in the title, in the article body or in both and we do not distinguish between the location(s) of the frame. The definitions and indicators for each frame are elaborated below, along with example statements which are meant to help you with your interpretation of the codebook. The frames we are examining are: A) Human Interest, B) Conflict, C) Morality, D) Serbian Victimhood, E) Anti-Western, F) pro-Russian, and G) Russian might.³

Important coding notes

- An item can contain none of the frames, some of the frames or all of the frames. The presence or absence of frames is determined through answers to indicator questions. The answers to indicator questions are obtained through parts of an item (sentences or paragraphs) or through the item as a whole.
- **A frame is considered present if the answer to at least one of the indicator questions is YES.**
- Some statements indicate the presence of two or more frames.
- Some statements are clearer than others – please consult the example “clear” and “borderline” statements provided for each frame when making decisions.

Using Qualtrics

³ For the initial version of the study, coders were instructed to also code the presence of the Human Interest, Conflict and Morality frames. These frames were dropped at a later stage of the analysis and are not accounted for in the study findings presented in the paper.

The link (Qualtrics) which you received in the e-mail takes you to the questions for the study. The survey flow is the same each time and consists of 10 input fields.

Q1. Insert your unique coder ID, found in this document.

Q2. Insert the article ID, found in the relevant word document.

Q3. Indicate the word document to which the article belongs.

Q's A-G. Answer 'YES' or 'NO', depending on the presence or absence of a frame.

Note field. Input any notes which you consider relevant for the frame interpretation or concerning issues with the data. This field is **not** required.

Always close and open the Qualtrics link again after completing an article to start coding the next article.

Contact information

If you have any questions please feel free to contact me on (MAIL BLINDED FOR PEER REVIEW) or on WhatsApp on (NUMBER BLINDED FOR PEER REVIEW).

Thank you and good luck with coding!

CODEBOOK

C. Human Interest frame

Definition: This frame brings a human face or an emotional angle to the presentation of an event, issue, or problem. This frame refers to an effort to personalize the news, dramatize or “emotionalize” the news, in order to capture and retain audience interest. A quote from a politician or official does not indicate the presence of HI.

Notes:

- Is the personal life of a politician discussed? **YES**
- Is the item depicting political issues by using specific politicians as examples or “faces” of the issue? **YES** (e.g. HDZ member in B&H or Kosovo government as jumping board for Serb government)
- Is the group affected by the issue discussed in detail or represented through interviews with members of the group who are not government officials? **YES**
- Pure reporting about number of victims in bombings or accidents with no individuals affected interviewed or discussed? **NO**

Answer with YES if at least one below is yes.

Indicators

6. Does the item provide a human example or a human face to the issue?
7. Does the item employ adjectives or personal vignettes that generate feelings of outrage empathy or caring?
8. Does the story emphasize how individuals and groups are affected by the issue/problem?

Example clear statement:

- Student Filozofskog fakulteta Miloš Dekić govori za Glas Amerike o tome kako je pozvan da da izjavu, pa izveden pred sudiju i kako je brzo završio u zatvoru, a još brže "iz njega izbačen".
- **Meštanin Gradimir Dinić** dodaje da se svake godine pišu prioriteti sela i da je na prvom mestu uvek taj neobezbeđeni prelaz. **On kaže da svi samo obećavaju ali ništa ne preduzimaju.**
- **Stojanović** od januara meseca prošle godine obavlja dužnost državnog sekretara u ministarstvu privrede Srbije. Prethodno je bio jedan od eksponiranih članova liste Srpska sve do kosovskih parlamentarnih izbora 2017, **nakon čega nije više bio toliko vidljiv u javnosti**
- Crnogorska vlada oglasila se nakon što su mediji objavili da je Uprava policije donela rešenje kojim se srpskim intelektualcima, među kojima je i **književnik Matija Bećković**, zabranjuje ulazak u Crnu Goru

Example borderline statement:

- **Visokoobrazovana osoba iz centra Beograda, koja ima posao i stara je 35 do 40 godina - ovako bi, na osnovu danas predstavljenog istraživanja organizacije "Secons" mogao da izgleda foto robot prosečnog učesnika protesta "Jedan od pet miliona" u Beogradu.**
☐ *Even though no individual is directly referenced, this statement does use a human example and does indicate the presence of the human interest frame.*

Clear example presence:

- ☒ Item 2 (Russian spy)
- ☒ Item 8 (Banja Luka festivities incident)

B. Conflict frame

Definition: This frame emphasizes conflict between individuals, groups, or institutions, often as a means of capturing audience interest. **A conflict is any type of disagreement between two or more parties.** This frame is broader than military or political conflicts and is one of the most prevalent frames across news items. This is the most commonly present frame in news items.

Notes:

- Was a spy arrested? **YES**
- Is there disagreement about how many whales Icelandic fisherman are allowed to kill? **YES**
- Is a court case discussed? **YES**
- Did Montenegro ban someone from entering the country? **YES**
- Is there any semblance of disagreement between two or more public or private parties? **YES**

Answer with YES if at least one below is yes.

Indicators

5. Does the item reflect disagreement or conflict between parties, individuals, groups or countries?
6. Does the item refer to two sides or more than two sides of a problem?

Example clear statements:

- SAD: Rusija preti NATO savezu na celom istočnom boku, preduzeće se paket mera
- Netanjahu je izveštaj označio "klevetom", a njegov glavni rival Beni Ganc ga je optužio za "pokušaj krađe izbora".
- u susjednoj Mađarskoj čijeg premijera Viktora Orbana, sa kojim kritičari često porede Vučića, međunarodne organizacije optužuju za gušenje medijskih sloboda
- već se jedino i isključivo odnosi na sprečavanje stranih državljana da u Crnoj Gori izazivaju ili podstiču netrpeljivost, vređaju ugled ili slave nasilni nestanak Crne Gore“, poručeno je iz Vlade

Example borderline statements:

- Twitter blokirao lažne pro-Netanjahu naloge u Izraelu
 - o *No explicit conflict is noted here, but depending on the context this statement may indicate the presence of the conflict frame.*

Clear example article:

Item 6 (Humanitarian aid Venezuela)

Borderline example article:

Item 3 (Kfor Kosovo)

Item 18 (Russian comments on Macedonia-NATO)

C. Morality frame

Definition: This frame puts the event, problem, or issue in the context of religious tenets or moral prescriptions. Because of the professional norm of objectivity, journalists often make reference to moral frames indirectly—through quotation or inference, for instance—by having someone else raise the question. The morality frame can most often be determined through quotes from officials/individuals or normative evaluations by the article author/references to religion.

Notes:

- Not all references to religion should be coded as morality, e.g. bureaucratic religious affairs like who is the new Pope do not indicate the morality frame.
- US/EU/USA/Russian officials make moral statements about how Serbia/the region should progress in the future? YES
- Maduro compares the US govt. to the KKK? YES

Answer with YES if at least one below is yes.

Indicators

6. Does the item contain any moral message?
7. Does the item make references to morality, God or other religious tenets?
8. Does the item offer specific social prescriptions about how to behave?

Example clear statement:

- Organizacija Freedom House je rekla da je "netransparentnost ove transakcije zabrinjavajuća i ne ulijeva povjerenje da vlade Srbije želi da poštuje slobodu medija."
- Ukazujemo da je naša ustavna i moralna obaveza da od nedobronamernih pojedinaca štitimo stabilnost i bezbednost zemlje, ali i spokoj svih njenih građana
- Le Penova i Benon odbacili „pakt sa đavolom“

- Mitropolit crnogorsko-primorski Amfilohije osudio je namjeru crnogorskih vlasti da ruše krstionicu na Miholjskoj prevlaci, uz ocenu da „obezbožena država“ želi da otima hramove od Srpske pravoslavne crkve.

Clear example article:

Item 17 (Borim se za Srbiju kao lav item)

Item 12 (Yellow House Kosovo)

Borderline example articles:

Item 0 (OEBS Donbas)

Item 1 (Nuclear five concern)

Item 11 (Iran nuclear deal)

- all three of these examples could be coded as morality due to the quotes from politicians. Item 11 comes closest to morality due to choice of language for criticizing Iran

D. Serbian Victimhood frame

Definition: This frame presents Serbia as a victim or as oppressed in global politics and history. Most frequently this frame is developed through references to the NATO bombing, the “loss” of Kosovo or actions by other ethnic groups in the region which can be considered anti-Serbian. This frame also applies to discussions about ethnic Serbs in Kosovo or Republika Srpska and their rights.

Note:

- To see this frame, you often need to think from the perspective of an ultranationalist Serb. ☺
- The “loss” of Kosovo reference is often made indirectly and subtly. See the updated clear examples list.
- Serbian victimhood will almost never be present in statements about Kosovo from U.S. or Kosovo officials as none of these officials publicly regard Kosovo as illegitimate.
- Statements by Serbian or Russian officials about Kosovo almost always have this frame as very few of these officials publicly argue that Kosovo is legitimate.
- Serbian victimhood is broader than issues about Kosovo. See the updated clear examples list.

Answer with YES if at least one below is yes.

Indicators

7. Does the item make reference to the NATO bombing of Serbia?
8. Does the item make reference to Kosovo as illegitimate or as a threat to Serbs and Serbia? This can be very subtle, so interpret the term “threat” loosely.
9. Does the item make reference to oppression of Serbs by other groups in the region? This can be very subtle, so interpret the term “oppression” loosely.

Example clear statement:

- Prištini uručeno novo „oružje“ za etničko čišćenje Srba
- Stradanje Srbije se ne sme zaboraviti: Predstavljeni novi rezultati o posledicama NATO agresije

- Mesto jednog od četiri pripadnika **srpskog naroda** je zauzeo Goran Opsenica iz HDZ BiH, iako trenutno u Vladi Hercegovačko-neretvanskog kantona obavlja funkciju ministra kao **Hrvat**
- Ministar unutrašnjih poslova Srbije Nebojša Stefanović proglasio je pobjedu na glasanju za članstvo **samoproglashene države** Kosovo u Interpolu.

Example borderline statements:

- Koliko je zaista Albanaca na Kosovu
 - *While not making a direct reference to Serbian victimhood, this title may belong to an article which indirectly questions the legitimacy of Kosovo.*

E. Anti-Western frame

Definition: This frame focuses on the activity by Western actors (represented by the EU, NATO or the USA) in a mocking manner or alternatively through depicting actions of these actors as aggressive or dangerous. This frame can also be present in items where Serbia is not discussed. This frame is not present in cases of internal divisions in the “West” between “right” and “left” actors.

Notes:

- Le Pen is criticizing Macron for his approach to Serbia? **NO**. This is an internal division in the “West”.
- Le Pen and Bannon criticize the UN? **NO**. This is an internal division in the “West”.

Answer with YES if at least one below is yes.

Indicators

- Does the item negatively or mockingly evaluate a statement or action from the EU, NATO or the USA?
- Does the item make reference to NATO, the EU or the USA as detrimental or as a threat to Serbia?
- Does the item make reference to NATO, the EU or the USA as detrimental or as a threat to global peace and stability?

Example clear statements:

- Usporedo sa neposrednom vojnom agresijom, političkim pritiskom i ekonomskom blokadom, važnim elementom NATO agresije, javlja se i specijalni informacioni rat koji su sprovodile zemlje Zapada protiv srpskog naroda.
- Maduro: Ekstremistička vlada Kju kluka klana koju predvodi Tramp želi rat zbog nafte i ne samo nje
- On [Dacic] je rekao da je laž da Sjedinjene Američke Države ne vrše pritisak na Prištinu

Example borderline statements:

- Nije ‘Tajms’ imao takve komentare kad su kosovski Šiptari tri dana sprovodili krvavi pir, ubijali ljude, rušili pravoslavne crkve
 - *Considered as indicative of the anti-Western frame as the main intention of this statement is a criticism of the reporting by Western outlets.*

Clear example article:

? Item 12 (Yellow House – Kosovo)

? Item 18 (Russia NATO)

Borderline example:

? Item 6 (Venezuela humanitarian crisis) - This is confusing because the article ends with a statement about how a political party believes that the U.S. means harm to Venezuela. Arguably this is just reporting of a view. From the context of the article we cannot infer an anti-Western frame here.

? Item 3 (KFOR Kosovo)

F. Pro-Russian frame

Definition: This frame emphasizes the relationship between Serbia/**the region** and Russia, while encouraging pro-Russian attitudes and a shared Slavic identity, often in contrast with Western values.

Note:

Serbia or the region must be mentioned for this frame.

Answer with YES if at least one below is yes.

Indicators

7. Does the item make reference to the positive business, economic, military or political relationship between Russia and Serbia/**the region**?
8. Does the item make reference to Russia's commitment to protect Serbia and Serbian identity?
9. Does the item make reference to a shared Slavic/Orthodox identity?

Example clear statements:

- Međunarodna civilna vežba, u organizaciji Ministarstva unutrašnjih poslova Republike Srbije i Ministarstva za civilnu zaštitu, vanredne situacije i otklanjanje posledica elementarnih nepogoda Ruske Federacije, biće održana u junu u Nišu.
- Hvala Rusima i Rusiji za sve ono, što do sada, za nas Srbe učiniše. A pogotovo im hvala na pruženoj pomoći, da mi, kao narod, sa Srbskom državom opstanemo i do današnjih dana.

Clear example article:

? Item 19 (Russian universities, Serbian business bonds)

? Item 12 (Yellow House Kosovo)

G. Russian might frame

Definition: This frame focuses on the "might" and relevance of the Russian state in global geo-politics, economy and international relations. The frame also consists of positive evaluations of past or current Russian politicians.

Notes:

- Ignore WW2/WW1/Soviet Union references unless directly tied to current affairs.
- New Russian gas pipeline projects/relevance of Russian gas pipe lines? YES

Answer with YES if at least one below is yes.

Indicators

7. Does the item positively represent the Russian state, economy (e.g. gas pipeline projects/Gazprom projects), culture or military?
8. Does the item positively evaluate actions from Russian politicians or business?
9. Does the item (positively) contrast Russia to the West?

Example clear statements:

- “On[Putin] to radi iscrpno, obraćajući se direktno narodu, razgovarajući sa predstavnicima različitih profesija i socijalnih krugova, korišćenjem medija”, zaključio je Peskov
- Prototip protivvazdušnog raketnog kompleksa malog dometa „tor“ napravljen je u Rusiji i prošao niz testiranja, dokazavši svoju **efikasnost**, saopštio je u intervjuu Sputnjiku generalni direktor vojne kompanije „Kupol“
- To je pokazatelj da Rusija prati šta se dešava i sigurno neće biti nemi posmatrač.

Example borderline statements:

- Miler je optužio grupu ruskih državljana za mešanje u američke izbore 2016. godine. Pritom se naglašava da ni Tramp ni njegov tim nisu bili u dosluhu sa Rusijom. Kremlj je optužbe na račun Moskve nazvao neodrživim i neosnovanim.

Even though no direct reference is made to any of the indicators, the Kremlin is presented as “above” Western accusations for which reason this statement should be considered indicative of the frame.

- Visoki zvaničnik dalje tvrdi da će Rusija pokušati da potkopa NATO kao savez i da će predstavljati izazov za Sjedinjene Američke Države u svim regionima sveta, uključujući i Arktik.

This statement indirectly references Russian might in global politics.

Clear example article:

Item 15 (Russian port in the North)

Borderline example articles:

Item 4 (Syrians want U.S. coalition to leave)

Appendix C

Model and hyperparameters used for classifier evaluation for frame prediction and country source prediction

Frame prediction models and hyperparameters, cross validation = 5, n_jobs = 2

- 'RandomForestClassifier': { 'n_estimators': [16, 1000] },
- 'AdaBoostClassifier': { 'n_estimators': [16, 600] },
- 'GradientBoostingClassifier': { 'n_estimators': [5, 16], 'learning_rate': [0.8, 1.0] },
- 'SVC' : [{ 'kernel': ['linear'], 'C': [1, 10, 100] } { 'kernel': ['rbf'], 'C': [1, 10, 100], 'gamma': [0.001, 0.0001] },
- LogisticRegression
- MultinomialNB
- GaussianNB

Text vectorizing for frame prediction

```
features = [[1000, 1500, 2500, 4000, 5000, 8000, 10000, 12000, 15000, 20000], [1, 5, 10, 50, 100, 200], [50, 100, 150, 250, 300, 450, 500, 1000]]
```

```
combinations = list(itertools.product(*features))
```

```
vectorizers = [CountVectorizer, TfidfVectorizer]
```

for both vectorizers:

```
Text vectorizer = vectorize(max_features = e[0], min_df = e[1], max_df = e[2])
```

Country source prediction models and hyperparameters, cross validation = 5, n_jobs = 2

- 'SGD' : { 'alpha': [0.01, 0.001, 0.0001] },
- 'KNeighborsClassifier': { 'n_neighbors': [16, 300, 500, 1000], 'leaf_size': [30, 50, 100, 200] },
- 'RandomForestClassifier': { 'n_estimators': [16, 300, 500, 1000], 'max_depth': [10, 50, 100, 1000] },
- 'AdaBoostClassifier': { 'n_estimators': [16, 300, 600], 'learning_rate': [0.6, 1.0] },
- 'GradientBoostingClassifier': { 'n_estimators': [16, 300, 500], 'learning_rate': [0.6, 0.8, 1.0] },
- 'SVC': { 'kernel': ['linear'], 'C': [1, 10, 100] }, { 'kernel': ['rbf'], 'C': [1, 10, 100], 'gamma': [0.01, 0.001, 0.001] },
- LogisticRegression
- MultinomialNB
- GaussianNB

Appendix D

Classification reports for frame prediction with manual data

Issue-specific frame 0 – Serbian Victimhood

model = Random Forest Classifier (n_estimators = 16)

vectorizer = CountVectorizer(max_features = 10000, min_df = 5, max_df = 150)

	precision	recall	f1-score	support
0	0.93	0.96	0.94	193
1	0.67	0.48	0.56	29
accuracy			0.90	222
macro avg	0.80	0.72	0.75	222
weighted avg	0.89	0.90	0.89	222

Issue-specific frame 1 – Anti-West

model = Random Forest Classifier (n_estimators = 16)

vectorizer = TfidfVectorizer(max_features = 1500, min_df = 1, max_df = 150)

	precision	recall	f1-score	support
0	0.94	0.99	0.96	204
1	0.67	0.22	0.33	18
accuracy			0.93	222
macro avg	0.80	0.61	0.65	222
weighted avg	0.91	0.93	0.91	222

Issue-specific frame 2 – Pro-Russian

model = LogisticRegression()

vectorizer = CountVectorizer(max_features = 20000, min_df = 1, max_df = 50)

	precision	recall	f1-score	support
0	0.99	0.99	0.99	211
1	0.73	0.73	0.73	11
accuracy			0.97	222
macro avg	0.86	0.86	0.86	222
weighted avg	0.97	0.97	0.97	222

Issue-specific frame 3 – Russian might

model = Random Forest Classifier (n_estimators = 1000)

vectorizer = CountVectorizer(max_features = 1000, min_df = 1, max_df = 50)

	precision	recall	f1-score	support
0	0.95	0.98	0.97	206
1	0.60	0.38	0.46	16
accuracy			0.94	222
macro avg	0.78	0.68	0.71	222
weighted avg	0.93	0.94	0.93	222

Appendix E

Top 15 named entities per country source

Russia

[('sad', 1108)[usa], ('srbije', 1061)[serbia], ('rusije', 869)[russia], ('rusija', 607)[russia], ('kosova', 594)[kosovo], ('srbija', 576)[serbia], ('eu', 523)[eu], ('srbiji', 503)[serbia], ('aleksandar', 456)[aleksandar(president)], ('ukrajina', 427)[ukraine], ('kosovo', 427)[kosovo], ('kosovu', 377)[kosovo], ('beogradu', 360)[Belgrade], ('un', 355)[un], ('prištine', 351)[pristine]]

USA

[('srbije', 1698)[serbia], ('sad', 1241)[sad], ('srbiji', 1017)[Serbia], ('srbija', 839)[serbia], ('eu', 815)[eu], ('beogradu', 760)[belgrade], ('kosova', 737)[kosovo], ('aleksandar', 617)[aleksandar(president)], ('vučić', 575)[vucic (president)], ('rusije', 560)[russia], ('kosovo', 544)[kosovo], ('tramp', 507)[kosovo], ('srbiju', 483)[Serbia], ('kosovu', 462)[kosovo], ('rusija', 457)[russia]]

Appendix F

Classification matrix reports for all feature sets

Classification matrices reported from best to worst performing feature set

Issue-specific frames

Classifier = Random Forest Classifier (n_estimators = 1000, max_depth=50)

	precision	recall	f1-score	support
RU	0.23	0.58	0.33	338
USA	0.88	0.62	0.73	1689
accuracy			0.61	2027
macro avg	0.56	0.60	0.53	2027
weighted avg	0.77	0.61	0.66	2027

Univariate feature reduction

classifier = Gradient Boost Classifier (learning_rate = 1, n_estimators = 500)

	precision	recall	f1-score	support
RU	0.44	0.67	0.54	551
USA	0.85	0.69	0.76	1476
accuracy			0.68	2027
macro avg	0.65	0.68	0.65	2027
weighted avg	0.74	0.68	0.70	2027

Random Tree Feature Reduction

classifier = Ada Boost Classifier (learning_rate = 1, n_estimators = 600)

	precision	recall	f1-score	support
RU	0.66	0.50	0.57	841
USA	0.70	0.82	0.75	1186
accuracy			0.68	2027
macro avg	0.68	0.66	0.66	2027

weighted avg	0.68	0.68	0.67	2027
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Variance Feature Reduction

classifier = Gradient Boost Classifier (learning_rate = 1, n_estimators = 16)

	precision	recall	f1-score	support
RU	0.54	0.69	0.60	654
USA	0.83	0.72	0.77	1373
accuracy			0.71	2027
macro avg	0.68	0.70	0.69	2027
weighted avg	0.73	0.71	0.72	2027

Recursive Feature Reduction

classifier = Gradient Boost Classifier (learning_rate = 0.8, n_estimators = 16)

	precision	recall	f1-score	support
RU	0.53	0.70	0.60	630
USA	0.84	0.72	0.77	1397
accuracy			0.71	2027
macro avg	0.68	0.71	0.69	2027
weighted avg	0.74	0.71	0.72	2027

Linguistic features

classifier = RandomForestClassifier(max_depth = 100, n_estimators = 1000)

USA	0.76	0.82	0.79	1186
RUS.	0.72	0.64	0.68	841
accuracy			0.75	2027
macro avg	0.74	0.73	0.73	2027
weighted avg	0.74	0.75	0.74	2027

All features

classifier = Gradient Boost Classifier (learning_rate= 0.8, n_estimators = 16)

	precision	recall	f1-score	support
RU	0.62	0.73	0.67	705
USA	0.84	0.76	0.80	1322
accuracy			0.75	2027
macro avg	0.73	0.75	0.74	2027
weighted avg	0.77	0.75	0.75	2027