Supplementary Information for

Misleading political advertising fuels incivility online: A social network analysis of 2020 U.S. presidential election campaign video comments on YouTube

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1. The Validation of Dictionary Results

Step 1: A human coder conducted a manual inspection of 200 comments and replies that are randomly sampled from the full data. The coder followed a coding scheme as shown below. The coding scheme is from Muddiman et al., (2018).

Please code 1 if the comment or reply includes the following words, and code 0 if the comment or reply does not include the following words.

1. Swear Words: Comment includes a swear word from the following list: fuck, shit, hell, damn, goddamn, Jesus Christ, ass, oh my god, bitch, and sucks, as well as less offensive versions of those words (e.g., crap, ass), or other generally agreed upon swear words.
    - This includes abbreviations for words or phrases that would typically count as swear words (e.g., WTF, BS).
    - Only count words if they are used as profanities. For instance, discussing "hell" as a potential religious location would not count as a swear word while saying "go to hell" would count as a swear word.
2. Uncivil Words: Comment includes discussion of any one of the following types of incivility. In particular, look for words or phrases that fall into one or more of the following categories, rather than judging the entire comment as uncivil or civil:
    - Note: This also includes comments where people are discussing any of these types of incivility but not engaging in it.
    - Name-calling: Commenter engages in name-calling/ad hominem attack OR discusses someone else who is engaging in name-calling/ad hominem attach.
    - Discrimination: Commenter discusses prejudice and discrimination, either generally (e.g., mentioning stereotypes) or specifically (e.g., explaining that a specific person is discriminatory, offensive, or bigoted).
        - Do NOT attempt to interpret a comment as being racist, sexist, etc. This code refers to calling someone else a racist, sexist, bigot, etc.

- Threats: commenter discusses a person/group/policy as threat to democracy, democratic governance, or, more generally, being a threat to another person.
  - This includes describing tyrants or traitors.
  - This includes general mentions of threats (e.g., this person is threatening me).
  - This includes mentions of democratically threatening behaviors such as overthrowing governments, insurgencies, and rioting.
  - This includes mentions of enemies and betrayals.
- Misinformation: Commenter discusses the availability or spread of misinformation, inaccurate or incorrect information, lies, dishonesty, etc.
  - This includes mentions of people being uninformed or deceptive.
- Governmental Dysfunction: Commenter discusses elements of governmental dysfunction.
  - This includes the suppression of ideas or people, infringement on rights.
  - This includes the prevalence of obstructionist actions/policies.
- General Incivility: Commenter mentions words describing something/someone as generally uncivil or inappropriate without necessarily mentioning the specifics. For example, mentioning that someone is demeaning or disrespectful, that a situation is nasty, chaotic, or a debacle, that people are yelling or deluded, or that something is inappropriate.
- Does not include formatting that suggests an uncivil or disrespectful tone. For instance, this does not include comments that use all caps or a lot of exclamation points.
- Does not include hyperbolic or slippery slope argumentation.

Step 2: Researchers calculated the agreement rate between the computer coding result and human coding result. If agreement rate was low, researchers analyzed the disagreement in the coding results and added new words to the dictionary. Then researchers conducted computer coding and human coding again, using 200 newly sampled comments and replies. The iterative process continued until the agreement rates reached 91.5%.

2. New Words in the Dictionary:

gtfo, hate, retardation, nonsense, shut up, SATAN, lye, fraud, liar, scammer, corrupt, sleepy joe, piglosi, wicked, nazis, garbage, stf up, steal, lyin, jail, dumm (dummie,dummy), sht, smell cap, authoritarian, cheetohead