1   **Disentangling the Climate Divide with Emotional Patterns: a Network-Based Mindset**

2   **Reconstruction Approach**

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13   **Abstract:**

14   Extreme political populism has been fiercely spreading climate disinformation for years,

15   contributing to a social divide about climate change. In order to profile how both sides of the

16   climate divide communicate climate change, we collected dissemination materials and

17   analysed the mindset of key actors reaching global audiences. Here we show that applying

18   network science to textual content and analysing the emerging reconstructed mindset can

19   support the identification of emotional patterns linked to a quick and pervasive spread of

20   falsehoods — i.e. an infodemic — such as hypercritical scepticism masking falsehoods under

21   a trustful promotion of change. Climate represents a fearsome threat linked to inconsistent

22   science in climate change infodemics. Change represents a reassuring pattern characterized

23   by trust in climate infodemics, low anticipation without risk awareness, except for some fear

24   about policy changes. For climate activism change is linked to high levels of negative

25   emotions like anger, disgust and fear, related to a perception of existential threats.

26   Furthermore, children are an angering concern in climate infodemics, while climate change

27   activism perceives children with trust and joy, but sadness for their anticipated future.

28   **Keywords:**

29   Fridays for future, social movements, infodemics, climate change, revolution.

30   **Main text:**

31   **1. Introduction.**

32   The Intergovernmental Panel on Climate Change (IPCC) affirms that continued climate

33   change is directly impacting human lives, and that risks of injury, disease, and death increase

34   with heat waves, floods, droughts, and fires (Smith et al., 2014). However, contrasting

35   messages from extreme political populism have been fiercely spreading climate

36   disinformation through social and news media for years (Demelle, 2016; Horton, 2020; Watts

37   et al., 2019).

38   Climate denying political leaders across world regions —USA, Brazil, Australia, the

39   Netherlands — are just visible elements of an evolving list of hundreds of influential players

40   and think tanks (Desmog, 2021). These think tanks repeatedly appear linked to events where

41   influencers take climate denying positions (Youtube, 2019), often these events run in parallel

42   to the Conferences of Parties (COPs) of the United Nations Climate Change Framework

43   Convention (UNFCCC). These annual COPs are the most important climate policy event

44   worldwide. When searching information about these UNFCCC COP events, content intended

45   to trigger a quick and pervasive spread of falsehoods — i.e. an infodemic — from events

46   organized in parallel by climate disinformation think tanks shows up in multiple media

47   channels, including in prominent video-sharing platforms (see Methods section).

48   These actors and think tanks have been polarizing the worldwide public opinion for decades,

49   amplifying the climate divide (Hoffman, 2011, Horton 2020). On one side of the climate

50   divide, climate change infodemics actively impedes "social consensus" about climate change.

51   Climate change infodemics actors (hereafter *climate infodemics*) disseminate misleading

52   information and downplay scientific evidence with the support of politically entrenched think

53   tanks (Demelle, 2016; Desmog, 2021; Horton, 2020).

54   On the other side of the climate divide, science-based climate change activism (hereafter

55   *climate activism*) outside the strict scientific domain demand action from policy makers while

56   stressing the importance of climate science in society (Hoffman, 2011; Marris, 2019). While

57   environmental and climate activists are not a novelty, and while cohorts of teenagers and

58   students have been involved in the decarbonization of UK and US universities at least since

59   2010 (Healy & Debski, 2017), recently the *#FridaysForFuture* movement gained

60   unprecedented prominence demanding climate action from political leaders. The

61   *#FridaysForFuture* movement adheres to scientific consensus on climate change and

62   gathered remarkable media attention since 2019.

63   Social movements like #FridaysForFuture have been pointed out as instrumental for crossing

64   a tipping point toward major changes of social norms and values that could contribute to

65   stabilize Earth's climate (Otto et al., 2020). Information flows and the feedbacks they might

66   activate are amongst the most important interventions to stabilize Earth's climate (Otto et al.,

67   2020). The fear of Information flows and their related feedbacks activating social tipping

68   dynamics towards decarbonization by certain think tanks provide a possible explanation for

69   their interest on a climate infodemic polarization agenda.

70   The variety of actors involved in the climate divide is immense, and it is fully unclear what

71   underlying patterns could characterize the messages in both sides of this divide. In this

72   context, we structure our investigation as a comparison between key representatives in their

73   ranks, i.e. individuals with outstanding character that managed to exhibit leadership in a

74   history of world-spanning events reaching millions of individuals.

75   To elaborate overarching strategies and understand the validity of proposals for tools dealing

76   with the climate divide, it is fundamental to explore the emotions inflaming this battle of

77   ideas, and to uncover weaknesses in the mindset embedded in the communication strategy of

78   those involved (Hoffman, 2011). The communication materials of individuals involved in the

79   climate divide can be expected to hold patterns leading to the identification of inflammatory

80   media content. Semantic patterns can be used to unveil emotionally distorted content linked

81   to polarization (Stella et al. 2018, Stella 2020).

82   In this article we aim to explore the emotional dimension of climate communication linked

83   the climate divide. Departing from this aim, we have specified the following objectives: First,

84   to explore how the mindset of key representatives of *#FridaysForFuture* and of climate

85   denying think tanks differ when communicating about climate. Second, to unveil emotionally

86   distorted content linked to polarisation in key climate disinformation communication events.

87   And third, to provide a scientific basis for unveiling infodemic content linked to the climate

88   emergency.

89   **2. Methods.**

90   Mindset reconstruction exposes the emotional backbone of language (Stella, 2020; Stella et

91   al., 2018). In order to profile how both sides of the divide communicate "climate change", we

92   collected communication materials related to climate change, and analysed the mindset of

93   selected actors who have been able to reach global audiences. The methodology is divided in

94   three consecutive steps: (i) identification of global key influencing figures of the climate

95   divide, (ii) data collection, (iii) application of network science methods for mindset

96   reconstruction and visual representation of the results.

2.1. Identification of key figures.

98   The identification of key figures is based on criteria of leadership and of a history of

99   contribution to global events in the respective networks of *#FridaysForFuture* and of climate

100   denying think tanks.

101   Greta Thunberg can be traced as the originator of the *#FridaysForFuture*. After her

102   innovative way of demonstrating gained prominence, her initially single-student protest

103   gained scale and lead to a global school strike movement. Afterwards, she gave speeches in

104   many global centres of power and meet with multiple global leaders. At the moment of

105   writing this article she is perhaps the only globally mediatic figure of this movement.

106   Christopher Monckton was ranked a top ten climate denier by Demelle (2016), and Desmog

107   (2021) mentions him in the context of multiple climate-related events and actions spanning

108   across world regions for more than a decade.

2.2. Data collection.

110   Data originates from to key public speeches directly or incidentally linked to international

111   bodies, national institutions, and diplomacy hubs. For example, a COP of the UNFCCC, the

112   UN, the World Economic Forum at Davos, the UK parliament, or climate infodemics

113   conferences.

114   The selected key public speeches reached broad audiences beyond the auditorium and have

115   been disseminated by multiple media channels, including television, newspapers, and video-

116   sharing platforms like Youtube (Youtube, 2019). In particular, we selected 11 public

117   speeches by Greta Thunberg from 2018 to 2020, and three much larger speeches in 2019 by

118   Christopher Monckton in events organised in Madrid in parallel to UNFCCC's COP 25, and

119   in a climate infodemics conference in Washington.

120   By using text from public speeches, we overcome the difficulties of preserving the privacy of

121   under-age citizens that are a known part of the *#FridaysForFuture* movement (Marris, 2019).

122   **2.3. From words to mindset reconstruction with *forma mentis* networks.**

123   The mental lexicon is an idealised system that acquires, stores, processes and produces

124   language (Vitevitch, 2019). The mental lexicon represents the structure of conceptual

125   associations in language as used by each individual. As a purely cognitive system, the mental

126   structure of conceptual associations in the lexicon can be extracted and analysed from

127   communication materials under the assumption of the individual's authorship.

128   Communication materials like texts are an open view to the mindset of the authors, which is a

129   proxy for the structure of language and its associations in the human mind (Teixeira et al.,

130   2021).

131   *Forma mentis* networks are a representation of the emotional content of the mental lexicon

132   and the relations between the meanings involved. We use *forma mentis* networks to show

133   how an individual person conceptually and emotionally structure their mindset about climate

134   change. Mindset reconstruction with *forma mentis* networks exposes the emotional backbone

135   of language, and such exposure highlights the attitudes towards "climate change" fuelling the

136   climate divide (Figure 1, Text Box 1).

137   To build the *forma mentis* networks, syntactic networks are used as a proxy of the mental

138   lexicon. Relations between words come from syntactic and semantic dependencies in

139   speeches and written text (see the explanation of Equation 1 below), and neighbourhoods are

140   interpreted as semantic frames (cf. Stella 2020). Network neighbourhoods contain all words

141   syntactically and semantically related to a given target concept. According to frame

142   semantics in cognitive science (Fillmore & Baker, 2001), these associations contain key

143   insights about the meanings and emotions framing a given target concept in a specific way in

144   text. In this way, network neighbourhood encode contextual knowledge that indicates how

145   the same concept, e.g. "failure", can be framed in different ways within various narratives

146   (e.g. "failure is a disappointing experience" vs. "failure is a learning opportunity").

147   Then, emotional relations are computed on the basis of the NRC Emotion Lexicon, which is

148   the largest lexicon mapping emotions, going far beyond simple sentiment patterns

149   (Mohammad & Turney, 2013). The words in the *forma mentis* networks also identify their

150   key concepts in the analysed speeches with the size of the words (see Figure 1), larger words

151   were represented as possessing a higher closeness centrality in the speeches (see Formula 1).

152   Closeness centrality is defined as the inverse average distance between a word and all its

153   neighbours (Metcalf & Casey, 2016). A previous study (Stella, 2020) showed that closeness

154   centrality is able to identify prominent concepts of short texts, i.e. the main concepts

155   providing grounding to a short narrative. This motivates our choice to use closeness centrality

156   as an estimator for concept prominence in texts. Eq. (1) is used for calculating the closeness

157   centrality (Metcalf & Casey, 2016) of each concept:

$$C(v) = \sum_{w \in G} \frac{N-1}{d(v,w)} \qquad (1)$$

159   Where:

160   C is the closeness centrality for each node in the graph G, in this case a network made of

161   words from speeches and written text, where links indicate syntactic (e.g. "pen" – "table" in

162   the sentence "the pen is on the table") and synonym relationships (e.g. "nice" and "good"

163   overlap in meaning in the sentence "you are nice and good").

164   G is the whole network, which includes words (nodes) and semantic and syntactic links as

165   extracted from all sentences in a speech/text.

166   *v* is the node in the graph G, which in our case is a word in a speech or written text; the

167   closeness centrality is computed for this *v* node.

168   *w* represents any other node in the graph G.

169   N is the number of nodes in the graph G.

170   *d* is the shortest path network distance, i.e. the smallest number of links between nodes

171   (words) *v* and *w* in the graph G.

172   **3. Results.**

173   As detailed in the Methodology above, mindset reconstruction exposes the emotional

174   backbone of language (Stella et al. 2018, Stella 2020). Such exposure importantly allows to

175   highlight the attitudes towards "climate change" that fuel the climate divide. In order to

176   profile how both sides of the divide perceive "climate change", we illustrate their emotional

177   and semantic patterns in Figures 1-4 and Text Box 1, accompanied in Appendix A by Figures

178   A1-A12. Overall, here we show that speeches in climate activism rely mostly of trust and

179   hope with links to anger, while climate infodemics shows clear patterns of hypercritical

180   misinformation masked under trust-inspiring content.

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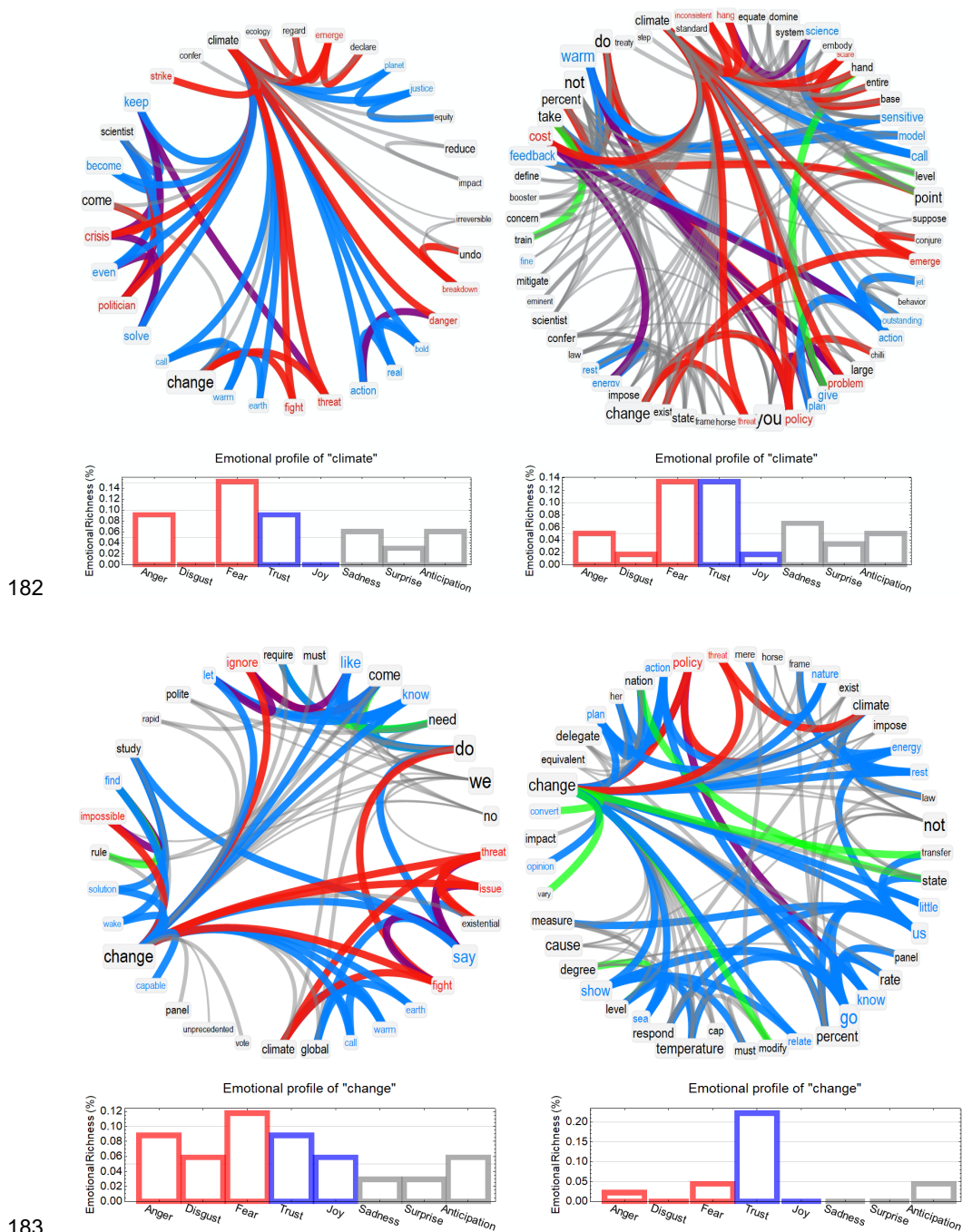


Figure 1. Speakers' mindset reconstruction around "climate" (**top**) and "change" (**bottom**) in

the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). Links indicate

186   syntactic and semantic relationships between words in speeches. Links are coloured if linking

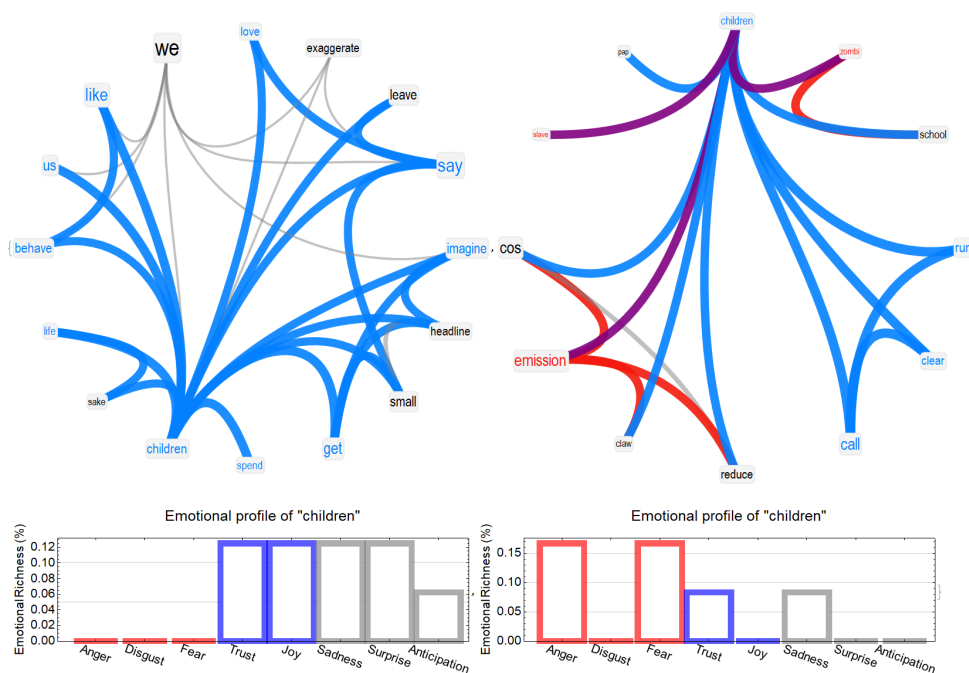
187   at least a positive/negative/neutral/synonyms (blue/red/grey/green) word. Blue/red/black

188   (positive/negative/neutral) coloured words indicate how they are perceived in language

189   according to the NRC Emotion Lexicon (see Methods). Font size expresses the relative

190   importance of the words reflecting their centrality in the speeches. Emotions are self-

191   explanatory except for anticipation, which is a projection into future expectations (cf. Stella

192   2020). We refer the reader to Text Box 1 for an interpretation of the figure.

193

194   **Figure 2.** Speakers' mindset reconstruction around "Children" in the speeches of Greta

195   Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a

196   detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

197

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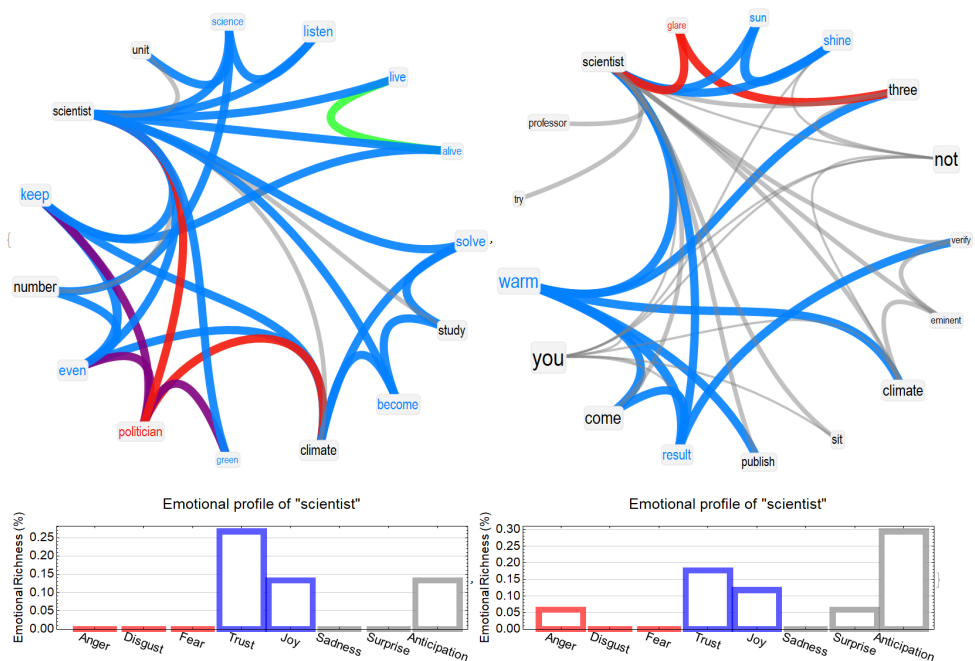
199

200   **Figure 3.** Speakers' mindset reconstruction around "Scientist" in the speeches of Greta

201   Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a

202   detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.
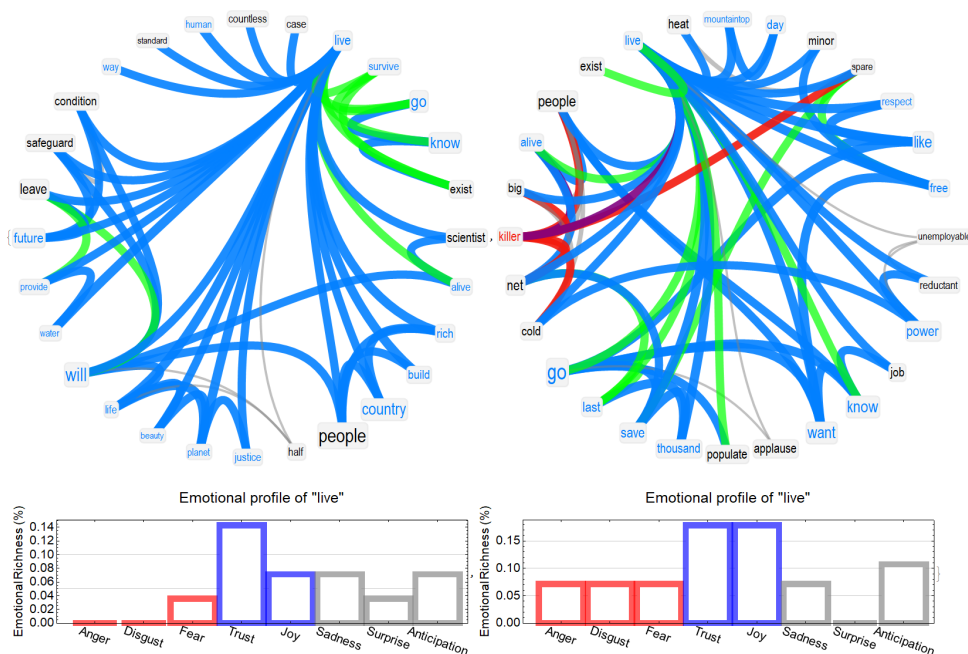
Figure 4. Speakers' mindset reconstruction around "live" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

Text Box 1: A lexicon of the climate divide, with the associated emotions in both sides.

Action: for climate activism it means hope for a better future, much wanted and needed, propositional toward the elicitation of a revolution-like call to action, while for climate infodemics it is just a sad bureaucratic cost, still something positive but that does not lead to any practical safeguarding initiative (Figures A5 and A10, see Appendix A).

Believe: climate infodemics angrily believes there is scarce contradictory evidence, while climate activism' beliefs are strongly propositional about setting goals to avoid the danger of inaction (Figure A6, see Appendix A).

Change: for climate infodemics there is a pattern characterized by trust, low anticipation without risk awareness, overall a perception of "change" that is reassuring, there is no sense of threat, no problem at all, except for some fear about policy changes. For climate activism change is linked to high levels of negative emotions like anger, disgust and fear, related to a perception of existential threats (Figure 1).

Children: an angering concern for climate infodemics. Climate activism perceived children with trust and joy, but sadness for their anticipated future (Figure 2).

Climate: a fearsome threat, linked to inconsistent science for climate infodemics or to scary tipping points for climate activism (Figure 1).

Future: relatively absent in climate disinformation, it inspires trust linked to future awareness in climate activism (Figure A8, see Appendix A).

Ignore: a large and central concept for climate activism, counterfactually associated to trust on that people will come to let change happen. Ignore is only peripheral for climate disinformation and linked to trust on the potential profits of global warming (Figure A7, see Appendix A).

Leader: someone to trust and follow in climate disinformation, but who triggers anger linked to "politicians" and "emissions" in climate activism, and still inspires trust (Figure A9, see Appendix A).

Live: climate activism uses this term carefully, associating "live" to trust to conditions of human survival and planetary justice, while climate disinformation does not display a coherent pattern (Figure 4).

Number: climate activism stays positive and lacks objections to numbers coming from current science, while climate disinformation displays an opposite pattern of strong anxiety projecting

238   into the future a sense of exaggerated imbalance on the issues at hand (Figure A11, see

239   Appendix A).

240   *Science*: inspiring mostly negative emotions of anger, disgust and fear to climate

241   disinformation, it is a matter of trust associated to listening and numbers for climate activists

242   (Figure A1, see Appendix A).

243   *Scientist*: isolated prophets that provide facts for narratives of climate disinformation around

244   changes in solar radiation and that are a source of anticipation. Instead, for climate activism

245   they are people that politicians need to listen to, experts that solve problems (Figure 3).

246

247   In their promoted mindsets, climate infodemics resorts to a wide variety of trust-related

248   semantic associates reducing scientists to isolated prophets that provide alternative facts,

249   which they relate to infodemic attempts to convince the public with alternative scientific

250   evidence on global warming. Despite presenting alternative facts, negative emotional

251   associations with "climate" such as "hysteria" and "catastrophe" are only present in the

252   climate infodemics side, while climate activism gives more relevance to "breakdown",

253   "danger" and "threat" (Figure A3, see Appendix A).

254   Anticipation, a projection into the future of both anxiety and excitement, is a stronger

255   emotion for climate activism around concepts of "leadership", "listen" (Figure A2, see

256   Appendix A), "children" and "threat". Climate infodemics concentrates anticipation toward

257   "studies" and "numbers", due to the anxiety that scientific facts create to the climate

258   infodemics community. The emotion of surprise is linked to "children" and "future" (Figure

259   A8, see Appendix A) for climate activism, while climate infodemics associates it to the

260   "numbers" behind climate science. Sadness is very strong in the climate activism arena for

261 concepts like "children", "action", or "believe", and appears also linked to "future",

262 "climate", "leader", and "live".

263 Climate infodemics displays high levels of sadness only around the term "believe". Joy is

264 counterfactually high for terms like "children" and "action" in climate activism, which can be

265 explained by the emotions of hope and sense of belonging to a growing group (Lerner, 2015).

266 Trust, an emotion strongly used by outstanding visionary leaders (Mumford, 2006), is

267 consistently high for climate activists, with very high values associated to its science-based

268 grounds. Instead, climate infodemics projects trust toward future-centered terms like

269 "change", "live", and "study" (Figure A12, see Appendix A), linked to reports with

270 alternative facts from their own dissemination activities.

271 Fear is higher for terms like "climate change", "threat", "issue" (Figure A4, see Appendix A),

272 and "believe" in climate activism, while for climate infodemics appears very intense against

273 "children". Anger again is linked to "children", and also "believe", in climate infodemics,

274 while for climate activism anger is associated to "climate change" and "leader". Last but not

275 least, disgust appears linked to how much both sides "ignore" each other.

276 Figure 1 (top left) illustrates that climate activism perceived "climate" as overwhelmed by the

277 threat of climate breakdown, whereas climate infodemics associated "climate" with neutral

278 concepts expressing 'inconsistent science' (top right). Such dichotomy reverberates in the

279 mental construct of "change", a neutral concept by itself in common language. In climate

280 activism, "change" was associated to concepts strongly eliciting anger and fear but also trust,

281 an emotion identifying outstanding visionary leaders (Mumford, 2006). Climate activism

282 gave relevance to "breakdown", "danger" and "threat", concepts characterising charismatic

283 value-based mindsets (Mumford, 2006) and revolutionary speeches (Jasper 2011; Kramer et

284 al. 2014). Stunningly, in climate infodemics such threatened perception was completely

285   absent (Fig. 1, bottom left) and left space to a wide variety of trust-evoking associates about

286   attempts to convince the public with alternative facts on global warming.

287   Climate activism combines anger (towards inaction), fear (of an approaching threat) and trust

288   (in solving this crisis), and perceives "climate change" as an indispensable "call-to-action"

289   fight. This "call-to-action" is urgently motivated by a combination of emotions: anger against

290   political leaders, fear for the dangers of inaction and against existential climate threats,

291   disgust about a stolen future, and an overall ambition to act over climate change. This "call-

292   to-action" makes climate activism's mindset entwined to revolutionary emotions. In fact,

293   emotions like anger, hope and despair are well known to accelerate the social tipping

294   dynamics of large-scale social protests and revolutions (Jasper, 2011).

295   Furthermore, it is known that outstanding future-focused leaders, often promoters of such

296   revolutions, rely on emotional styles revolving around trust, joy and anticipation (Mumford,

297   2006), so that detecting these emotions in a future-oriented topic like climate change can

298   provide insights on how charismatic #FridaysForFuture can be. Cognitive and semantic

299   contagion require conscious information processing, e.g. interpretation and acceptance,

300   whereas emotional contagion can lead to a faster transfer of moods among people, involving

301   both implicit and explicit mechanisms. Positive emotions like trust and joy have been

302   reported to cause a "ripple effect", i.e., a "pandemic" or "tsunami" of massive contagion of

303   positive sentiment driving the social behaviour of the whole collective in synchrony

304   (Barsade, 2002). In other words, the emotions and perceptions linked to climate activism

305   have been described as rippling better through society, and thus reaching larger social

306   audiences (Jasper, 2011; Mumford, 2006), in comparison to the emotional profile adopted by

307   climate infodemics.

308   In fact, conceptual associations and emotions indicate that climate infodemics promotes

309   hypercritical skepticism, hiding under a generally trustful promotion of change and including:

310   (i) discussing numbers in terms of imbalanced exaggerations, (ii) referring to scientists in a

311   stereotypical way, i.e. isolated individuals that attempt to provide abstract, theoretical

312   evidence to climate infodemics, (iii) displaying negative emotions against children, and (iv)

313   showing fear against public policy interventions.

314   As reported in the semantic-emotional analysis around other concepts (see the lexicon

315   reconstructed in Text Box 1), climate infodemics displays high levels of sadness only around

316   the term "believe". Joy is counterfactually high for terms like "children" and "action" (Figure

317   A5, see Appendix A) in climate activism, which can be explained by the emotions of hope

318   and sense of belonging to a growing group (Lerner, 2015).

319   These hypercritical attitudes disrupt public awareness on the climate emergency and

320   compromise public consensus to stabilize Earth's climate (Bloodhart, 2019). They prevent

321   policy-makers from acting over the risks posed by climate change (Hoffman, 2011; Watts et

322   al. 2020). Thus, they obstruct the Paris Agreement and the formation of foreseen social

323   tipping dynamics towards decarbonization (Otto et al. 2020).

324   **4. Discussion and Conclusion.**

325   We have shown that applying network science to textual content and analysing the emerging

326   mindset can support research about infodemics, i.e. the quick and pervasive spread of

327   falsehoods. We have identified infodemic emotional patterns, such as hypercritical scepticism

328   masked under a trustful promotion of change. The reconstructed mindsets and the emotional

329   patterns identified provide new pointers on climate infodemics.

330   Climate infodemics sustain a chain reaction triggering a major divide at the global scale,

331   which threats sustainability, human health and ultimately the global economy (Hoffman,

332   2011). Infodemics strongly depend on their emotional and perceptual content, much alike

333   viruses spreading across populations according to their genetic information. Recent studies

334   highlighted how contagions of distorted perceptions and misinformation greatly influence

335   human responses to the climate threat (Bloodhart, 2019).

336   Emotions and their contagion, much alike a pathogen spreading over societies (Kramer et al.

337   2014), have been instrumental in large-scale societal changes like revolutions from Maoist

338   China to Nicaragua and Czechoslovakia (Jasper, 2011), and are instrumental in the process of

339   emergence of charismatic social and political leaders (Mumford, 2006). Nevertheless, the

340   parallelism in the emotional patterns of a revolution could be just anecdotal. As a matter of

341   fact, the call to action by #FridaysForFuture is limited to policy-making. And objectively, the

342   movement often finds a "glass ceiling" about how they could trigger change beyond their

343   demonstrations and judicial actions (Neubauer, 2019).

344   Tracing this emotional parallelism with massive social movements is important because

345   recent calls to civil disobedience by leading climate diplomats (Figueres and Rivett-Carnac,

346   2020) could create game-changing developments if related to large-scale emotional

347   contagions, but could be hindered by infodemics. These interactions between propelling and

348   hindering factors points us towards future work on the opinion dynamics of the climate

349   divide, within and between sides.

350   We conclude that mindset reconstruction could be an important tool to deal with infodemic

351   communication materials facilitating the climate divide. Mindset reconstruction of textual

352   content provides a scientific basis for detecting climate-related hypercritical attitudes and

353   fuelling discourses. Hence, mindset reconstruction could help to design strategies narrowing

354   the climate divide by countering infodemics in climate-related communication. The

355   innovative techniques we have shown — at the fringe of AI and cognitive science — could

356   support climate policy, e.g. by being applied to flag online communication materials with

357   infodemic content. Further work includes the automated training of cognitive tools for in-

358   vivo flagging online infodemic content in several languages, and the study of their influence

359   on the opinion dynamics of pro-active climate debates.

360   **Acknowledgments:**

361   The authors thank the organisers of the Winter Workshop on Complex Systems, editions

362   2019 and 2020, and gratefully acknowledge the feedback received at the Conference on

363   Complex Systems 2020.

364   **Author contributions:**

365   R.C. and M.S. envisioned the study. M.S. and R.C. collected the data and analysed it. R.C.

366   and M.S. drafted the manuscript.

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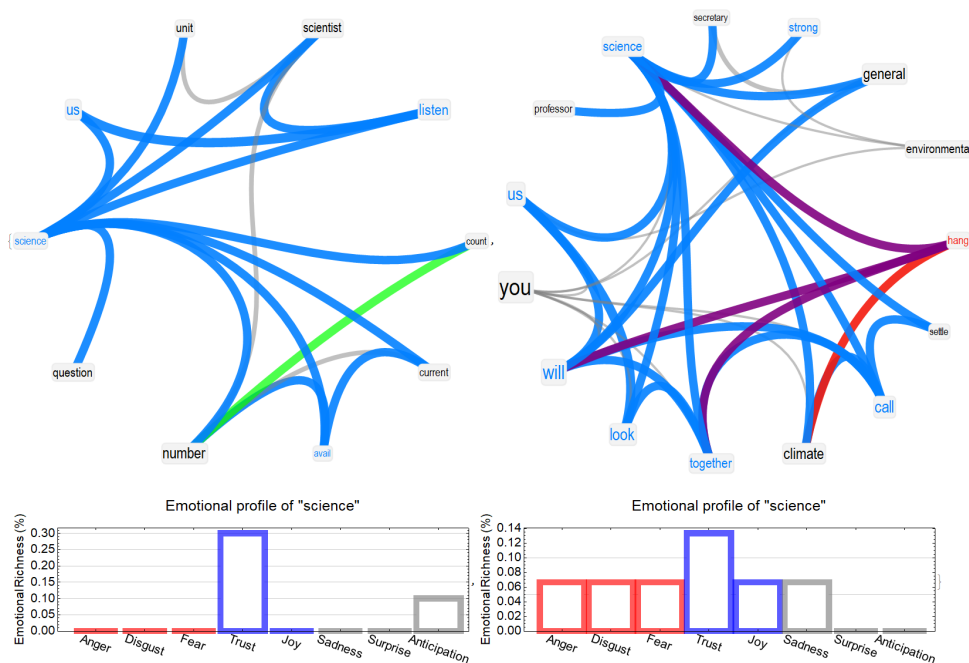
434   **Appendix A.**

435

436   **Figure A1.** Speakers' mindset reconstruction around "Science" in the speeches of Greta

437   Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a

438   detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

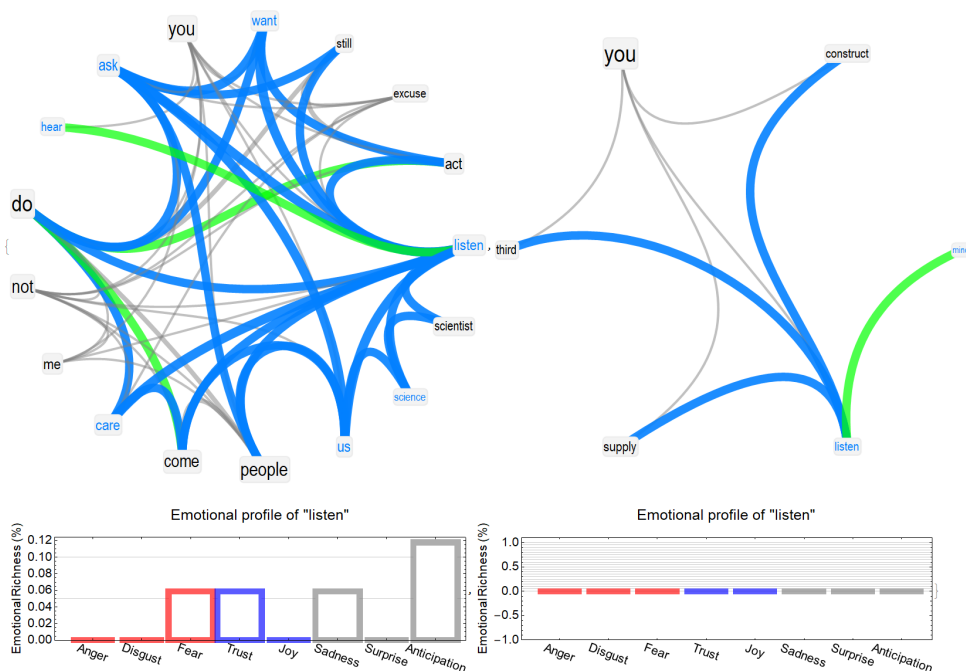



Figure A2. Speakers' mindset reconstruction around "listen" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

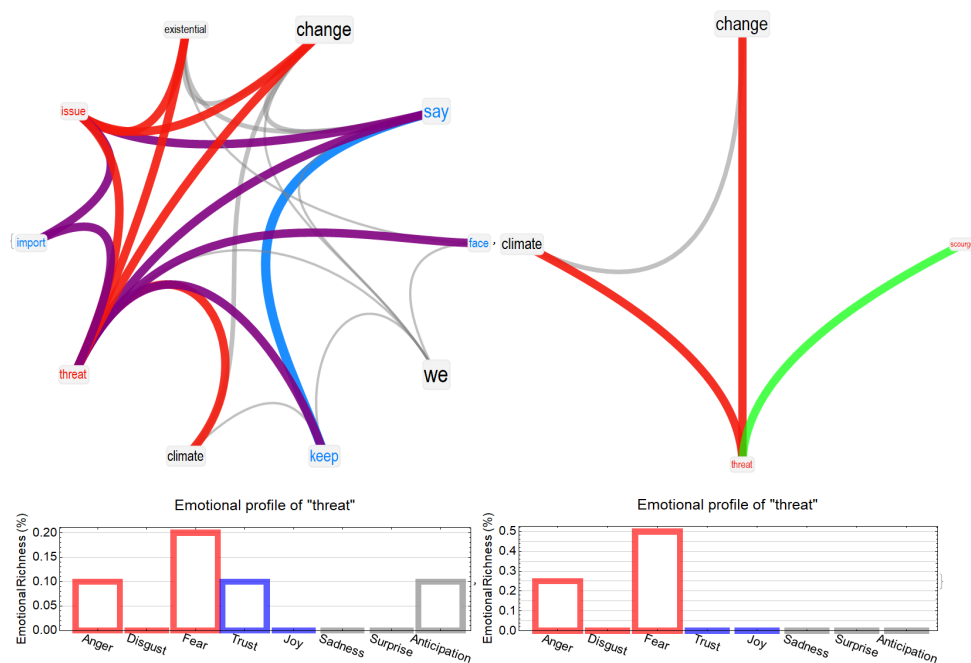



Figure A3. Speakers' mindset reconstruction around "threat" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

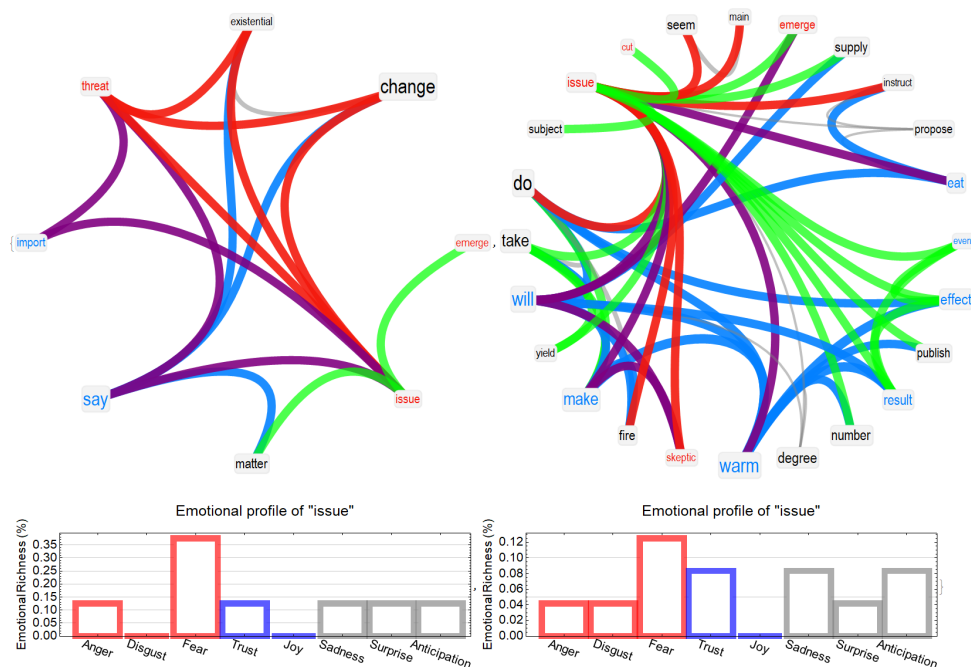



Figure A4. Speakers' mindset reconstruction around "issue" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

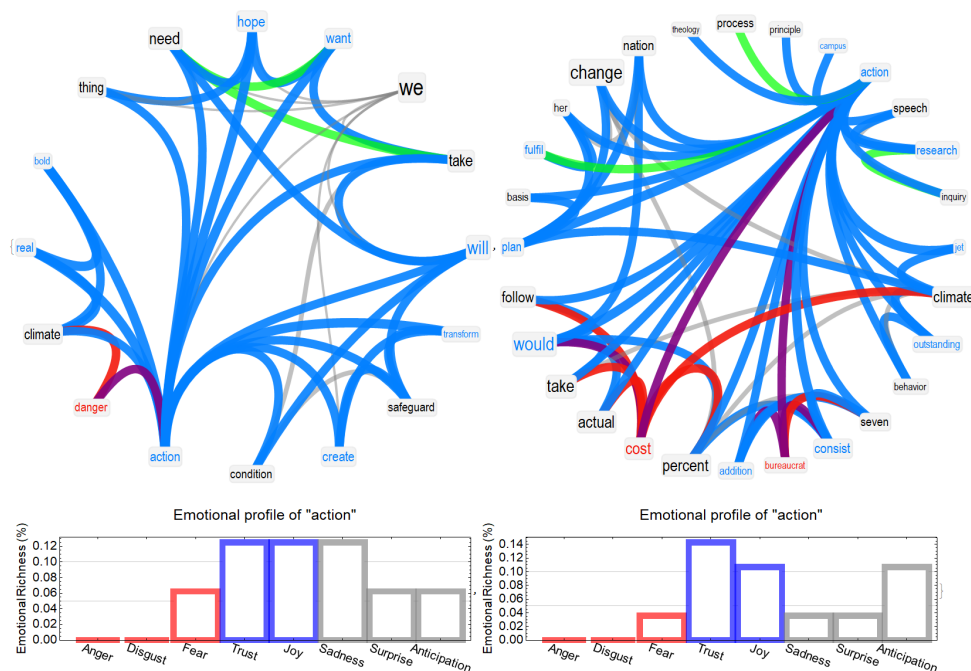



Figure A5. Speakers' mindset reconstruction around "action" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

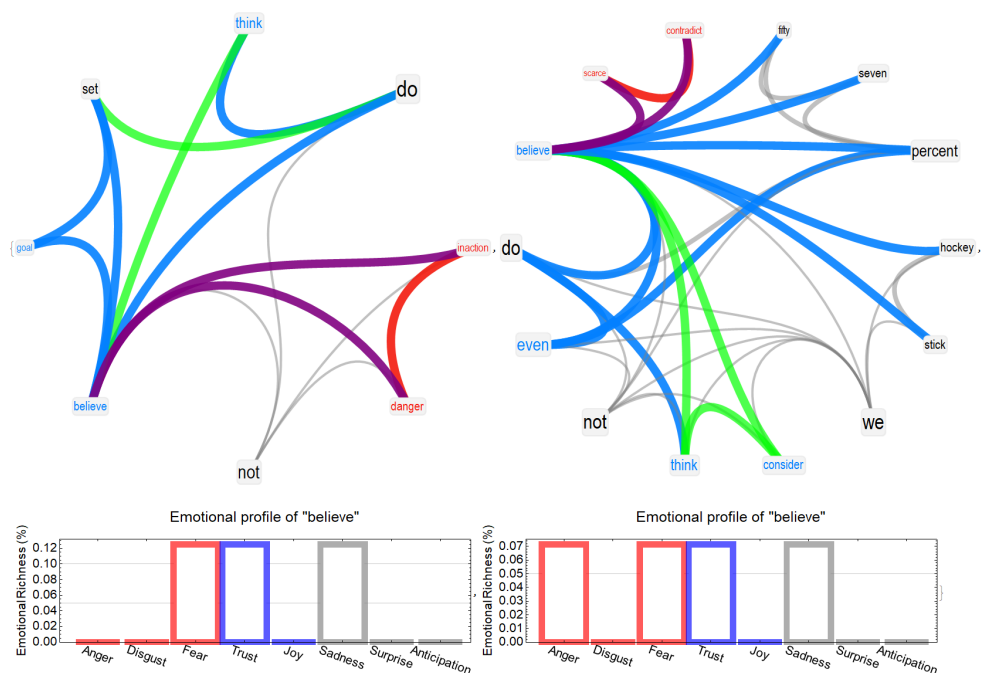



Figure A6. Speakers' mindset reconstruction around "believe" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

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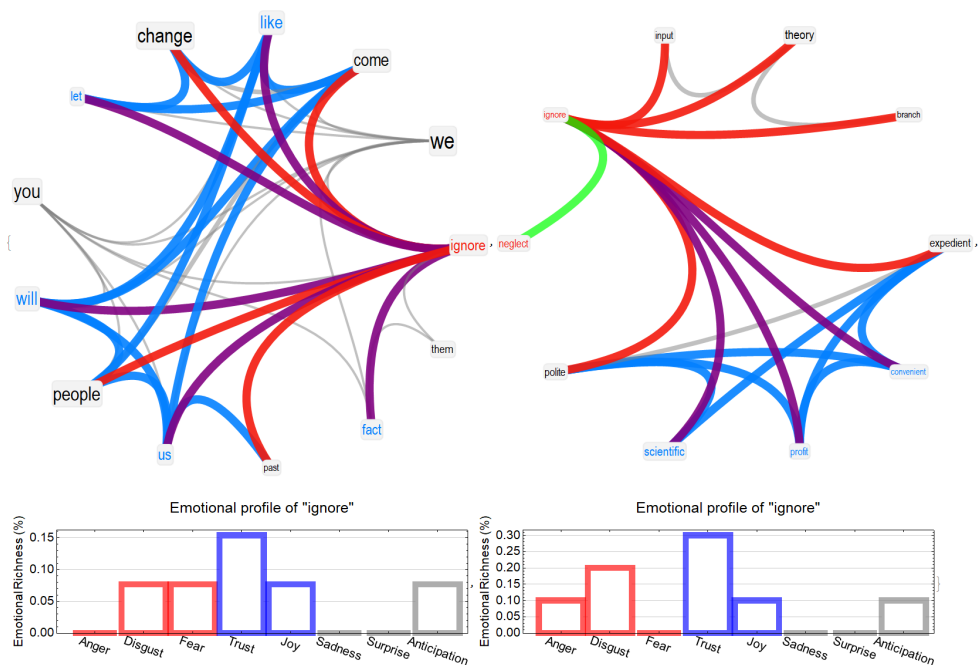
Figure A7. Speakers' mindset reconstruction around "ignore" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

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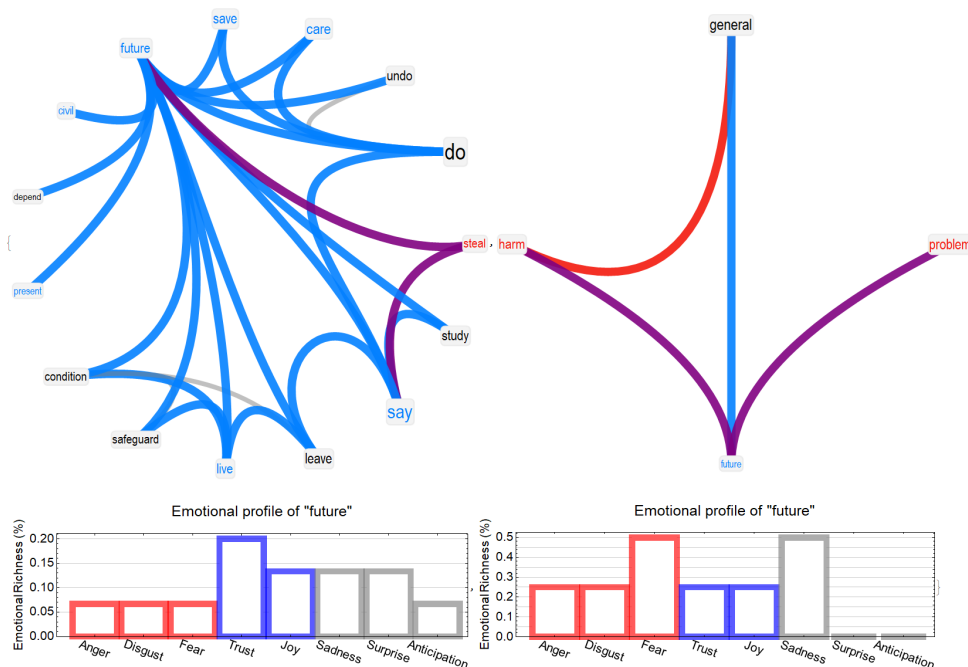
Figure A8. Speakers' mindset reconstruction around "future" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

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Figure A9. Speakers' mindset reconstruction around "leader" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.
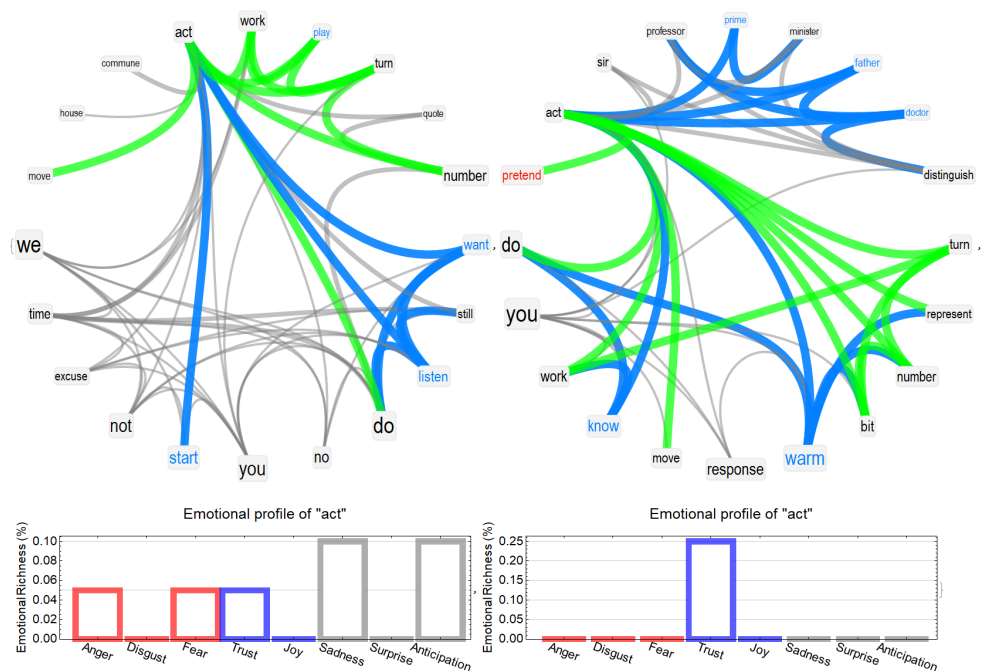
Figure A10. Speakers' mindset reconstruction around "act" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.

Figure A11. Speakers' mindset reconstruction around "number" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.
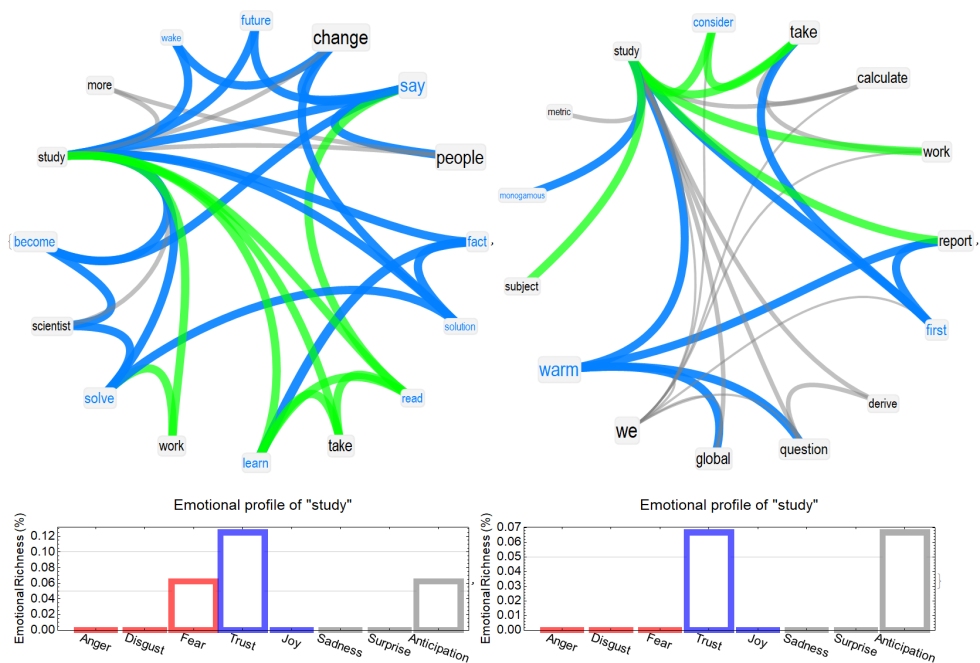
Figure A12. Speakers' mindset reconstruction around "study" in the speeches of Greta Thunberg (**left**) and Christopher Monckton (**right**). We refer the reader to Figure 1 for a detailed explanation of the colour code, and to Text Box 1 for an interpretation of the figure.