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2 **‘Dominant counter-frames in influential climate contrarian European**
3 **Think Tanks’ *Climatic Change* 10.1007/s10584-020-02820-4**

4 **Abstract**

5 Numerous studies to date have interrogated United States (US) think tanks – and their networks
6 – involved in climate change countermovement (CCM). Comparatively in Europe (EU),
7 research has been lacking. This investigation therefore attends to that gap. We conducted a
8 frame analysis on eight most prominent contrarian think tanks in six countries and four
9 languages in Europe over twenty-four years (1994-2018). We found that there has been
10 consistent contrarian framing through think tanks in the EU regarding climate change. Yet, we
11 found a proliferation of contrarian outputs particularly in recent years. This uptick in quantity
12 correlates with increases in CCM activities in the US. Our content analyses showed that well-
13 worn climate change counter-frames spread by US CCM organizations were consistently
14 circulated by European organizations as well. Moreover, we found that, as in the US, neoliberal
15 ideological stances stood out as the most frequently taken up by contrarian think tanks in
16 Europe. As such, we documented that CCM tropes and activities have flowed strongly between
17 US and EU countries.

18 **Keywords:** climate change denial, contrarian counter-movement, Europe, think tanks, counter-
19 frames

20 **1. Introduction**

21 The role of think tank networks involved in climate change contrarianism in the United States
22 (US) has been examined by a varied number of scholars and organizations and, because of its
23 relevance and magnitude, described as a much influential lobby labeled the climate contrarian
24 movement (CCM) organizations (e.g. Boykoff 2016; Farrell 2016; Brulle 2020).

25
26 Analyses of the US constellation of contrarian think tanks provided by the research to date
27 demonstrates that we face a complex phenomenon in which economic sponsorship is not the
28 only factor in their capacity for influence. Cultural politics have contributed as well to this state
29 of affairs. Cultural politics are dynamic and contested spaces where various *actors* battle to
30 shape public understanding and engagement. They are arenas where formal climate science,
31 policy and politics operating at multiple scales permeate the spaces of the *everyday* (Boykoff
32 2011). Cultural politics refer to dynamic, and contested processes whereby meaning is
33 constructed and negotiated (Norgaard 2011), and involves not only the portrayals that gain
34 traction in discourses, but also those that are absent from them or silenced (Derrida 1978).

Together, political contexts supporting free-market policies over recent decades have proven to be fertile ground for the seeds of the contrarian discourse; complicit mass media as disseminators have also played significant roles (Boykoff 2011). At the center of these complexities, it is important to note the power and influence of CCM think tanks by way of their capacity and funding. These CCMs then shape policy processes and public opinion (Medvetz 2012).

The combination of carbon-based industry concentrations of power and cultural and political opposition to environmental movements in the US may explain why contrarianism has spread faster in the US than in Europe, where the climate contrarian discourse has not been as explicit and visible as in America. Accordingly, these trends paired with pre-capitalism histories in Europe (Boykoff and Rajan 2007; Hornsey et al 2018) help explain how climate contrarianism has been comparatively under researched in Europe.

The investigation presented in this paper attends to that gap by studying CCM counter-framing amongst European think tanks. To this end, we identified the most relevant think tanks in Europe and conducted a frame analysis on eight most prominent contrarian think tanks over a twenty-four-year period (1994-2018), including six countries and four languages.

This paper is organized as follows: First we provide a short overview of climate change contrarian countermovement (CCM) activities. The literature applies mostly to the US and reflects the interdisciplinarity of the core research that this paper is contributing to, by adding the European analysis. Second, a method section provides a summary of the procedure followed for the study both regarding the selection of the eight organizations and the framing analysis. Then the results are provided followed by a discussion including the policy, sociological and discourse related-aspects and the conclusions.

2. The climate change contrarian movement

In this research – through our analyses of eight CCM organizations in six EU countries – we sought to better understand how political economic and cultural factors influences across US and EU contexts may have contributed to differing CCM discourses.

Since the late 1990s, research conducted on the constellation of contrarian think tanks has provided a wealth of data in the US regarding CCM influence on US policies, media and the public opinion regarding anthropogenic climate change. CCM organizations have been defined as groups that advocate against policies that seek action to mitigate climate change, especially mandatory restrictions and penalties on greenhouse gas emissions (Brulle 2014). These

movements also advocate against substantive action to adapt to or mitigate climate change (McCright and Dunlap, 2000).

Researchers have consistently unveiled and mapped discursive alignments and material links between US think tanks and corporate economics interests (Brulle 2014; McCright & Dunlap 2000; McCright and Dunlap 2003; Rowell 2007; Union of Concerned Scientists 2007; Farrell 2016). This architecture has been referred to as a *denial machine* (Dunlap 2013). In particular, research has traced how CCM organizations are strongly linked with right-wing think tanks (Dunlap and Jacques 2013; Jacques, Dunlap, Freeman 2008). Conservative think tanks, along with a few trade associations and other advocacy organizations, have been described as “key organizational components of a well-organized climate change counter-movement that has not only played a major role in confounding public understanding of climate science, but also successfully delayed meaningful government policy actions to address the issue” (Brulle 2014: 681). Research has also pointed out that while economic sponsorship is crucial, it is not the only factor to explain the major influence of this countermovement – additional factors are favorable political contexts – e.g. a prevailing dominance of neoliberal ideas – as well as ideological affinities. Over recent decades these ingredients have contributed to fertile grounds for seeds of the contrarian discourse to grow and flourish (Plehwe 2014).

Developments over these past decades has come amid a backdrop of long histories of cultural opposition to environmental movements in the US (Boykoff 2016). The *objective* nature of scientific research traditionally allocating legitimacy and prestige to academia has been imported by contrarian think tanks with the cooperation of policy experts with academic profiles (Medvetz 2012). Previous research has also documented complicity of mass media as disseminators (Boykoff 2011). Politics, academia, and the media have effectively colluded (knowingly or unknowingly) with the economic elite interests, creating often indirect and subtle yet strong underlying dependencies between each other (Plehwe 2011). Importantly, Farrell uncovered how the organizational power within US-based contrarian networks, and the magnitude of semantic similarity, are both predicted by ties to elite corporate benefactors (2016).

In Section 3.2. of this paper we summarize (Box 1) the main arguments circulated by the US think tanks advocating against the scientific agreement on the anthropogenic causes of climate change and its severe consequences (Cook et al 2018), for its comparison with the European research conducted for this paper.

By contrast, research into these CCM activities in Europe has been much more limited regarding the role of think tanks. This has been due in part to the fact that the number and scope

of contrarian organizations and experts has been considered marginal in the region. There are however some interesting results for the European case. Beder (2001) was amongst the first authors to unveil the connection between neoliberal think tanks and the promotion of free market environmentalism in English speaking countries, including the UK. Since this ideology advocates for giving priority to the economy to solve the environmental problems, and since this priority is what has caused environmental problems in the first place, this link illuminates the core roots of climate change inaction at the policy level. Plehwe (2014), in his turn, has highlighted the links between the European and US organizations. For instance, he recalls that amongst the denialist Nongovernmental International Panel on Climate Change (NIPCC) there were a number of European authors, and that close links between European think tanks networks and US and Australian think tanks can be identified (like the Committee for a Constructive Tomorrow, CFACT, set up in the US in 1985 and extended to Europe in 2004 and the Australian Joan Niven's climate change 'skeptical handbook' translated to German by the Australian Hayek Institute). Plehwe (2017) has also studied the social networks of influence in Europe and reported on the relevant role of neoliberal circles in the market of ideas regarding European integration. Though the paper does not focus on climate change it connects neoliberal forces to climate change inaction because environmental protection has been one of the fields more integrated, and neoliberals in Europe oppose integration. This approach, connecting neoliberalism and right-wing ideologies with climate change denialism, is the current dominant line of research in Europe regarding climate change contrarianism and will be further expanded in the discussion of this paper.

3. Methods

The scope, resources and prominence of CCM think tanks in Europe is arguably more complicated to measure for researchers in Europe than it is in the US. The complexity of the multinational, multilingual Europe, alongside the existence of distinct political contexts and cultural backgrounds, have increased the challenges of tracking trends of climate change denial and contrarian narratives in this region. Yet, this study has confronted these complexities and challenges as we constructed a methodological approach to examine these dynamics.

Following a multiple-stage procedure, we first mapped the climate think tanks countermovement in Europe. Second, we systematically examined their output to identify a climate contrarian discourse: that is the dissemination of messages advocating against the evidences of human-induced global warming or casting doubt on climate change as a problem to varied degrees. The latter, conducted by means of a frame analysis.

The study focuses on think tanks alone, in spite of that there may be other sources of climate contrarian discourse in Europe. This is so because this study attempts to expand the literature on the climate contrarian movement, so far devoted in the US region to think tanks, and because this type of organizations are the ones defined as potentially more influential by the literature, compared to blogs or nonadvocacy research organizations.

3.1. Mapping contrarian think tanks in Europe

To build the sample of think tanks spreading contrarian views on anthropogenic climate change, we used five main sources: (1) academic research and media representations; (2) US climate denial conferences; (3) think tank databases (Think Tank Network Research, Think Tank Directory); (4) right-wing libertarian think tank networks (Atlas Network, former Stockholm Network); and (5) expert consultations.

Because of the language abilities of the research team, the selection of the sample consisted of think tanks publishing online in English, German, French and Spanish. By analyzing discourses in think tanks in the most prevalent languages on Europe, we were able to thus include in our sample relevant and influential organizations in the region.

From the above-mentioned five sources, we collected at a first stage 12 think tanks that included multiple- and single-issue organizations (focusing only on environment or on many other topics) for which we could identify at least one text in their websites showing a clear skeptic/denial/contrarian stance towards anthropogenic climate change.

After checking the availability and reliability of archives as well as the volume of their output, the sample was narrowed to eight organizations (by discarding think tanks who did not provide a search engine or produced less than seven texts). These eight organizations include the most relevant disseminators of contrarian climate change messages with output in English, German, French and Spanish and are located in six different European countries:

- Austria: *Austrian Economics Centre* (AEC)
- France: *Institut Économique Molinari* (IEM)
- Germany: *Europäisches Institut für Klima und Energie* (EIKE)
- Spain: *Instituto Juan de Mariana* (IJM)
- Switzerland: *Liberales Institut* (LI)
- United Kingdom: *Centre for Policy Studies* (CPS), *Institute of Economic Affairs* (IEA), *The Global Warming Policy Foundation* (GWPF)

The studied organizations included old and newly established centers. The senior think tank of our sample is the well-known Institute of Economic Affairs (IEA), created in the United Kingdom (UK) in 1955. Based in Westminster, London, this think tank describes itself as “the UK’s original free-market think-tank” and is considered as one of the most influential, corporate-funded, conservative think tanks in the UK, also playing a central role in promoting free market environmentalism in this country (Beder 2001). It has been disclosed that oil giant BP has been one of IEA funders and that the organization raises money from gambling companies and US donors that support its push for a hard Brexit and a deregulatory US-UK trade deal, while facilitating behind closed doors access to cabinet ministers to its donors (CEO 2010; Carter and Ross 2018). IEA has been strongly lobbying for a hard Brexit (Monbiot, 2018) along with the other two British think tanks of our sample, the Centre for Policy Studies (CPS) and The Global Warming Policy Foundation (GWPF). These three organizations are members of the so-called Tufton Street network, the London street where many of the UK’s leading pro-Brexit campaign groups and think tanks have offices (Farand, Hope and Collet-White 2019).

The Centre for Policy Studies (CPS), created in London in 1974, describes itself as “Britain’s leading centre-right think tank” with the mission of developing “a new generation of conservative thinking, built around promoting enterprise, ownership and prosperity”. CPS is considered one of the two most influential think tanks in the UK, alongside the IEA. Both have historical links with the British conservative party (Beder 2001).

The third British organization of the sample, The Global Warming Policy Foundation (GWPF), is a think tank that established in 2009. GWPF is fully devoted to the issue of climate change. They are also considered the UK leading voice in the media for the climate change denial (CEO 2010). GWPF was set by the former Tory chancellor Nigel Lawson and is said to be created mirroring US denial organizations –US corporations being actually an important funding source (Mandel 2016).

Outside the UK, the next oldest organization included in our analyses is Liberales Institut (LI), established in Zurich, Switzerland, in 1979. A declared follower of the Austrian School of Economics, the LI describes itself devoted to “the research and dissemination of the ideas of liberty” (Liberales Institut 2020). Details about this think tank’s funding or corporate links are undisclosed.

Next in the sample, according to its date of creation, is French Institute Économique Molinari (IEM), founded in 2003. In spite of their statement of holding offices in Paris, Brussels and Montreal, this is a very small center named after the Belgian economist Gustave de Molinari (1819-1912). Molinari is credited as an early proponent of the anarcho-capitalist ideas in Europe

that inspired US libertarians (Raico 2011). IEM promotes a “tax freedom day” in France, following the father of economic neoliberalism Milton Friedman, who relaunched the idea in the 1980s in the US (Parienté and Laurent 2014).

The Spanish think tank in the sample, Instituto Juan de Mariana (IJM), was created in 2005 in Madrid. With close links to hard core US climate change deniers, including funding from the US oil industry (CEO 2010), IJM is named after the Spanish philosopher Juan de Mariana, who defended private property and encouraged limits on government (Rothbard 2010). When the IJM was launched, it began with a seminar against the Kyoto Protocol that was attended by climate change skeptic Christopher Horner from the Competitive Enterprise Institute. The center has also cosponsored several International Conferences on Climate Change organized by the Heartland Institute—the Chicago-based free market think tank at the forefront of denying the scientific evidence for man-made climate change in the US. IJM is also close to several radical free-market European think tanks.

The two remaining think tanks of our sample are both established in 2007. Austrian Economics Centre (AEC) is settled in Vienna, Austria, and Europäisches Institut für Klima und Energie (EIKE) is headquartered in Hannover, Germany. AEC publicly states that its main goal is to disseminate the ideas of the Austrian School of Economics. Accordingly, it also promotes events like the “tax freedom day”. As the majority of the other organizations of the sample, the AEC has close links with the US right-wing countermovement, including The Heritage Foundation, Cato Institute, Competitive Enterprise Institute or Americans for Tax Reform, amongst others as stated in its website. It also created the Friends of the Austrian Economics Center in the US to facilitate contributions from US donors. It is worthy to remember that some of the US organizations mentioned by AEC as “partners”, like Americans for Tax Reform, are considered to act as funding vehicles of the oil industry (Mayer 2017).

Finally, German Europäisches Institut für Klima und Energie (EIKE) is the second think tank fully devoted to climate change issues of our sample –besides the GWPF. It has been reported that EIKE works closely with the right populist Alternative for Germany (AfD) party and is very well-connected with the US climate counter-movement –including having hosted some Heartland Institute conferences in the past and being in charge of the European subsidiary of CFACT, a US lobby organization who has received large sums of money from ExxonMobil (Deleja-Hotko, Müller and Traufetter 2019).

In sum, the organizations selected for our analysis were chosen because they visibly produced climate change denial output –the extent and content of which was precisely the goal of our research. Moreover, the organizations in our map share further singular traits. First the majority

of them maintain relevant links with the US denial countermovement –including US funding related to it. Second, they all seem to hold a similar ideological bias –close to neoliberal and right-wing stances. In fact, all the organizations gathered for our analysis, except EIKE and GWPF, are members of the Atlas Network, the US-based network of pro free-market, libertarian think tanks from all over the world. Third, in the case of the UK think tanks, the three of them count amongst the strongest lobbies for a hard Brexit.

Finally, this set of think tanks are also considered relevant organizations in Europe. With the exception of EIKE and LI, the other six organizations of our sample are all mentioned amongst the most influential think tanks in the *2018 Global Go To Think Tank Index Report* (McGann 2019). The reason why LI and EIKE are not included in the McGann report, in spite of being an old and consolidate think tank the former and the organization with the larger contrarian output the latter, may be due to the characteristics of this report.¹

In order to examine CCM discourses emanating from these organizations, we systematically collected all available documents in the think tanks' websites with mentions to climate change and global warming in English (or “Klimawandel” and “Erderwärmung”, “changement climatique” and “réchuffement”, and “cambio climático” and “calentamiento global” in German, French or Spanish respectively) at the end of 2018. After discarding texts with a non-substantive passing mention of climate change or global warming, we ended up with 1,669 (N) texts published within a time range going from 1994 to 2018.

From the sample, one particular think tank emerged prominently, German EIKE, with 73.46% of all texts gathered, and one particular country stand out with three organizations located in it, the United Kingdom. Details for the sample are shown in Table 1.

Table 1: European CCM think tanks analyzed

Think tank	Texts including climate change or global warming topics N=1,669	% of total texts	Country	Language coded	Year of founding	Time range of posts
AEC	35	2.85	Austria	English	2007	Undated
CPS	18	1.08	United Kingdom	English	1974	2007-2016
EIKE	1,226	73.46	Germany	German	2007	2008-2018
GWPF	106	6.35	United Kingdom	English	2009	2009-2018
IEA	106	6.35	United Kingdom	English	1955	1994-2017
IEM	48	2.88	France	French	2003	2004-2013
JDM	112	6.71	Spain	Spanish	2005	2001-2018
LI	18	1.08	Switzerland	German	1979	2007-2017

¹ *Global Go to Think Tank Index* is an index build upon the nominations and rankings made by a panel of experts on the basis of a large list of qualitative criteria that the experts assess according to their perception. For the *2018 Global Go to Think Tank Index*, the panel included over 1,796 peer institutions and experts from the print and electronic media, academia, public and private donor institutions, and governments around the world (McGann 2019).

Sources:

AEC (Austrian Economics Centre): <https://www.austriancenter.com/>

CPS (Centre for Policy Studies): <https://www.cps.org.uk/>

EIKE (Europäisches Institut für Klima und Energie (EIKE): <https://www.eike-klima-energie.eu/>

GWPF (The Global Warming Policy Foundation): <https://www.thegwpf.org/>

IEA (Institute of Economic Affairs): <https://iea.org.uk/>

IEM (Institut Économique Molinari): <http://www.institutmolinari.org/>

JDM (Instituto Juan de Mariana): <https://www.juandemariana.org>

LI (Liberales Institut): <https://www.libinst.ch>

We do not have an explanation for the German bias of the sample, with EIKE including almost three quarters of all the texts gathered. The research engines in their websites provided a similar time range of posts for all the organizations (around 10 years) with only two exceptions including a larger time range (IEA and JDM), but of course the think tanks may have not made available all their output through their websites. In order to address this imbalance, the data provided in the results of this study always takes the German bias into account for the general results and offers data disaggregated by think tanks.

3.2. Framing climate contrarian discourse

After the selection of the sample and the collection of all the documents meeting our criteria, we conducted a frame analysis based on the tradition first put forth by Goffman (1974), which suggested that how something is presented to the audience (the frame) influences the choices people make about how to process that information. In essence, "framing is the process by which a communication source defines and constructs a political issue or public controversy" (Nelson et al 1997: 567). We examined a priori codes along with an openness to other codes that may have emerged. This is an approach increasingly deployed and accepted in qualitative analysis (Clifford and Travis 2018; Bazely and Jackson 2013; Stemler 2001).

As for the frames tested, we built a list following the main counterarguments found in the US countermovement as identified by Cook et al (2018) – we call them counter-frames as McCright et al (2015), since they *counter* the consensus around anthropogenic climate change – by consensus we refer to the scientific agreement that earth's climate is heating up and that human activities are a significant cause (Cook et al 2016) . In addition to traditional scientific counter-frames, we added other relevant non-scientific frames to further interrogate think tanks' discursive influences. As can be seen in Box 1, we divided the counter-frames into three main blocks: counter-frames related to general scientific claims, counter-frames related to specific scientific claims, and counter-frames related to non-scientific claims. Finally, the main focus of the texts (policies/solutions, scientific approach, economic approach, ethical approach, other) was also coded.

Box 1. An overview of the counter-frames analyzed

A. General scientific claims:

A1. Contesting IPCC legitimacy (implicitly or explicitly)

A2. Contesting scientific consensus & legitimacy (not IPCC)

A3. Contesting scientific dissemination (by politicians, media and other)

Examples: directly criticizing or casting doubts on IPCC reports and working groups, on other scientists or on disseminators because they are alarmist, models used are imperfect, models' predictions have failed, they misrepresent data, they are based on poor data, they use unreliable sources).

B. Specific scientific claims:

B4. It is not happening (climate change or global warming)

B5. It is happening, but we don't know how serious it is or it is not serious

B6. It is happening, but it is good/not bad (either global warming or particular issues of it)

B7. It is happening, but it is not us or it is not only us (other issues are also causes/main causes)

B8. It is happening, but we have other major problems

B9. It is happening, but any policy will be worse than warming

Examples: It is not warming, Antarctic sea ice is increasing, it can be cyclical, temperature rise is marginal, CO2 is not bad, the Sun is the main cause, poverty and hunger are other equally major problems.

C. Non-scientific claims:

C10. Criticism of non-scientist defenders & messages & policies on a non-scientific basis

C11. The text includes a neoliberal or a neoconservative economic position (supporting economic growth as the solution, markets self-regulation, minimum government intervention, no taxation of pollution, etc.)

C12. The text includes a mention to human population as a problem

C13. The text includes a mention to animal-based diets or animal agriculture as a problem

C14. The text trust technology as a solution to climate change or its consequences

Examples of C10: Criticizing attitudes (ex: condescending, adamant, patronizing...), practices (ex: indoctrinating in schools and universities), goals (ex: profit oriented, jobs and careers-oriented or climate change defenders), consequences (ex: economic/environment/ethic consequences or climate change policies), ideology (ex: mentioning politics blamed as extremists or fanatics)

D. Focus

D15. Policies/Solutions

D16. Scientific approach

D17. Economic approach

D18. Ethical approach

D19. Other

While counter-frames related to scientific claims (general or specific) are standard in climate change counter-framing theory, it is worth commenting on our third set of counter-frames related to non-scientific claims. Here we first (C10) attempted to gather data concerning the degree of verbal abuse (for instance of ad hominem attacks), since this can unveil the belligerence of these organizations in Europe. Second (C11), we particularly wanted to examine the extent to which these organizations were linked to the neoliberal or neoconservative economic position, a link which has been identified as very relevant in the US case. And, third (C12, C13 & C14), we wanted to identify the degree of ideological denial of these organizations (Almiron 2020), that is the refusal to accept that some core ideas are systematically kept out of the discussion, including two of the leading causes as identified by Intergovernmental Panel on Climate Change (IPCC) in all their reports (for instance 2014), human overpopulation and diet

(mostly animal-based diet), as long as the technological myth which promotes that all scenarios related to climate change (either global warming is considered anthropogenic or not) rely heavily on technology rather than on modifying human habits. As these human behaviors are not problematized, it follows their role in climate inaction is denied. Accordingly, by ideological denial we do not refer to a response skepticism (Capstick and Pidgeon 2014), based on doubts about the efficacy of action taken to address climate change, rather to the anthropocentric denial underlying our failure to respond to climate change. Together, these sets of frames sought to effectively map the contours of think tanks' skeptical stance.

For the coding criteria, we coded presence of a counter-frame in each article (the appearance of an argument in one article to the next makes more of an impression than a repeat of that counter-frame within the same text); we collected examples for each criterion for each think tank; in long reports (more than 20 pages) we coded the introduction, the executive summary and the conclusion sections. Following particularly on Clifford and Travis (2018), we conducted an iterative approach that is more commonly now deployed and accepted in similar qualitative analysis (e.g. Bazely and Jackson 2013; Stemler 2001).

4. Results: Climate contrarianism in Europe

As shown in Figure 1, the dissemination of climate contrarian discourse available online by the analyzed think tanks in Europe is first dated in the 1990s (the first text found is from 1994), but denial output is not emergent until 2007. A second and very important uptick is then detected from 2015 to 2018. German EIKE, with 73.46% of all texts gathered, is the main responsible of this second pick, including the use of all frames with the exception of the climate policy criticism (B9), which keeps moderately low compared to the other frames in this last stage.

Figure 1. Output and counter-frames over time / a. Number of publications per think tank over time. b. Percentage of use of scientific and non-scientific counter-frames over time



With regard to *general scientific claims*, our results showed a relevant presence of all three counter-frames (A1, A2, A3) in all the observed organizations, with contesting scientific dissemination being the most used. This frame appeared in almost half of all texts analyzed (49.43%). Second most frequently invoked here were discourses contesting IPCC legitimacy. This counter-frame was found in 29.24% of texts. Third, discourses contesting scientific consensus and legitimacy (not IPCC) were found in 27.38% of the sample.

Amongst think tanks, from 1994 to 2018 the IEM was found to be the CCM organization contesting the most IPCC legitimacy and scientific consensus, with 41.67% and 66.67% of texts respectively including these counter-frames. Over this period, EIKE was the CCM think tank contesting scientific dissemination the most, with 58.24% of all its texts including a criticism accordingly. CPS was found to be the CCM organization with contesting the least these set of counter-frames (with 5.56% of texts contesting IPCC legitimacy and 22.22% of texts contesting scientific dissemination).

With regard to *specific scientific claims*, two frames were found in more than two thirds of the texts: the counter-frame acknowledging that climate change is happening, but humans are not the cause (or are not the single cause) (B7) (37.3%) and the one skeptical with policies (B9) (38.83%). The frame with the least presence in this set was the one acknowledging that climate change is happening but that we have other major problems to deal with (B8) (9.23%). The most remarkable finding here, however, was that 22.23% of texts in these CCM organizations claimed that climate change and global warming is not happening (B4). Also, a 10.90% of texts analyzed did accept that climate change is happening, but also argued that it is good, not bad (B6).

As per organizations, EIKE was the think tank with a larger denial of climate change as a whole (B4) with 26.35% of texts including this counter-frame – while at the other extreme we did not find any text including this argument in the case of AEC and CPS. In this set of frames, up to four organizations produced texts with the counter-frame that acknowledges climate change but denies that we know how serious it is or argues that is not serious (B6) –AEC, GWPF, IEM and IEA (with 25.71, 24.53, 22.92 and 19.81% respectively). Also remarkable was the number of texts found in IEM and EIKE (43.75 and 42.82% respectively) that acknowledged global warming but not its anthropogenic causes (B7). And even more high were the percentages of texts with mentions promoting political inaction, that is criticizing climate policies as proven worse than global warming (B9): 77.78% of LI's texts contain this argument and also 56.25% of IEM's and 41.50% of EIKE's texts.

As for the *non-scientific claims*, 63.93% of texts included a criticism of non-scientist defenders and policies on a non-scientific basis (C10). All but one think tank (IEM) included this claim in more than 30% of their texts. This was the case in more than 70% of texts of LI and EIKE. Interestingly, mentions to overpopulation (C12) and diet (C13) were almost nonexistent in the whole sample of think tanks (1.92 and 0.84% respectively) and also the claim of technology (C14) as a solution was very low (less than 7% of all texts).

The important link with neoliberal and conservative ideology was found in a relevant percentage of the whole sample (C11): 39.25%. Noteworthy, claims supporting the economic growth as a solution, to market self-regulation, to minimum government intervention or a critique to taxation of pollution, for instance, were found in all organizations (from 20% of texts in AEC to 77.78% of texts in LI).

Figure 2 reflects all counter-frames appearance and focus per think tanks.

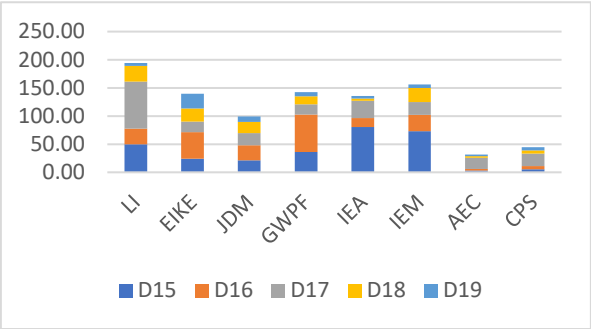
Figure 2: Counter-frames appearance (% of articles per think tank) / a. General scientific counter-frames. b. Specific scientific counter-frames. c. Criticism of advocates on a non-scientific basis. d. Ideological denial.



Finally, the main focus of the text found was the scientific approach, with 43.14% of texts including this focus as primary stance, while ethics is the least encountered approach (See

Figure 3). Also, the publication of texts gathered in the think tanks' websites, excluding the CPS case (for which posts were undated), showed that the bulk of texts were published recently, from 2014 to 2018. For instance, for the most radical claim found (B4: climate change is not happening) the 63.79% of texts using this counter-frame were published between 2015 and 2017. However, the first counter-frame in the sample was found in a 1994's text, while the set of frames here analyzed largely do not emerge until 2004.

Figure 3: Focus (% of articles per think tank)



5. Discussion: Stuck on contrarianism

Contrarian and CCM labels are imperfect. In developing these labels there is a danger of excessively focusing on individual or organizational personalities at the expense of political economic, social and cultural forces. In other words, when focused on the movements of individual contrarians or particular CCM organizations, attention could displace deeper structures and architectures that give rise to the resonance and asymmetrical effectiveness of their claims in the public arena.

The nuances and distinctions between these labels have deservedly been discussed and debated over time. For example, Howarth and Sharman have developed *categories and subcategories* of skepticism, distinguishing between *(motivated) contrarianism*, *policy-related skepticism* and *knowledge-related skepticism* (2017: 777-778). They distinguish these labels from the category then of *denier*, along with sub-categories within (Howarth and Sharman 2017). Furthermore, O'Neill and Boykoff further developed a definition of *climate contrarianism* by disaggregating claims-making to include ideological motives behind critiques of climate science, and exclude individuals who are thus far unconvinced by the science or individuals who are unconvinced by proposed solutions, as these latter two elements can be more usefully captured through different terminology (2010). Moving between climate science, politics and policy, scholars like Dunlap (2013) has pointed out differences between contrarianism derived from ideology and contrarianism derived from scientific evidence. Moreover, McCright (2007) has defined

contrarians as those who vocally challenge what they see as a false consensus of mainstream climate science through critical onslaughts on climate science and eminent climate scientists, often with substantial financial support from fossil fuels industry organizations and conservative think tanks.

Amid these nuances, many CCMs have been found to be at the core of the undermining in the US public confidence in climate science and of the reluctance, when not sheer opposition, by policymakers to the necessity of taking steps to reduce carbon emissions (Carmichael and Brulle 2017, Tesler 2018).

From our analysis, we show that US climate change counter-frames have spread across the public sphere by the European organizations as well, particularly in recent years. Moreover, as in the US, climate contrarian think tanks in Europe are also aligned with neoliberal ideologies – neoliberal here understood as a very diverse and wide ideology that still is useful to depict the intellectual network which is currently converging with far-right thought (Plehwe, Slobodian and Mirowski 2020). This resonates with the recent work of a number of authors linking the far-right political parties/followers and climate change denial in Europe. McCright, Dunlap and Marquart-Yatt (2016) first confirmed for the region that a majority of European countries (the ones not linked to a Communist past) held the same left-right ideological divide as found in the US, with citizens on the right showing less belief in climate change and less support for action to mitigate it than citizens on the left. Forchtner, Kroneder and Wezel (2018) found that many tropes in German far-right climate-change communication (from far-right and Nazi magazines and blogs) are familiar from research on conservative climate-change skepticism. Forchtner (2019) latter expanded this view by showing the same convergence between the far-right, neoliberalism and climate change denial in a number of Western, Nordic and Central European countries. Our research confirms that European contrarian think tanks are aligned with the stances found at the far-right political level in Europe.

It is remarkable also that, although the top CCM think tanks in Europe are medium sized or even small (in contrast with funding of other European think tanks) and, with the exception of EIKE, all have a modest output (in contrast with outputs of other European think tanks, particularly in the UK: Kelstrup 2016), the majority of them remain members of the club of the most influential organizations according to McGann (2019). One exception, EIKE, is precisely the think tank that is by far the brightest star in this constellation, both in terms of focus (degree of belligerence against anthropogenic climate change consensus) and output (number of publications). The absence of this think tank in McGann’s list needs further investigation but one reason may simply be language; the fact that EIKE’s output is mostly in German, while for instance the other single-focus think tank of the list, GWPF, in spite of having a much smaller

contrarian output, uses English, and thus is more accessible for the international experts contributing to the McGann's ranking. However, because of EIKE's close links to the US climate counter-movement, including the Heartland Institute, which is included in the McGann 2018 list, EIKE's absence in the *2018 Global Go To Think Tank Index Report* needs further inquiry.

The fact that the main focus of the texts remains on science over this twenty-four-year period – that is, that skeptics in Europe still openly contest science – is also noteworthy, as it is the findings showing that many of the critiques and attacks are not focused on scientists themselves but on other carriers of the information (as journalists, environmental advocates or politicians, for instance). The presence of radically outlying perspectives-as-frames, like B4 (climate change doesn't happen) and B9 (high degree of verbal belligerence) shows that European CCM organizations cannot be seen as a moderate version of the US one (e.g. Farrell 2016, Oreskes and Conway 2011, Supran and Oreskes 2017). As examples, the lack of problematization of human population and diet and the low appeal to technology as a solution confirm similar counter-framing approaches across continents.

Finally, the proliferation of CCM organizations expressing climate change or global warming counter-frames particularly in recent years was surprising. They show that, in spite of old and well-worn narratives at use (used by the US CCM since the 1990s, McCright and Dunlap 2000), European CCM efforts remain rather young and still growing.

Three issues may help to explain and illuminate these findings. First, the fact that the majority of contrarian think tanks in our sample (5 out of the 8 analyzed) were founded between 2003 and 2009 may partly explain such a late emergence of contrarianism in Europe amongst think tanks. Second, the two latest major IPCC reports (AR4 and AR5) may have prompted reactionary CCM activities. Following the publication of the three working group reports and the synthesis reports comprising AR4 by the IPCC in 2007 prompted increased output by the eight European think tanks. Of note, the frame contesting IPCC legitimacy (A1) was also prominent in Europe just after the publication of the 2014 AR5 IPCC reports. Thus, the two increases in output revealed by this research (Figure 1a) may be a reaction of the think tanks to both reports. This resonates with notions of contrarianism and denial as an anti-reflexivity force, reacting against “self-confrontation with the unintended and unanticipated consequences of modernity's industrial capitalist order” (McCright and Dunlap 2010: 103).

There is a third reason that may partly explain, at least for some European think tanks, the late emergence of the climate contrarian discourse: it is precisely the previously mentioned alignment with a right-wing populism effervescence in the European Union after the 2008-2015

great recession (Forchtner 2019) – merging with neoliberalism (Plehwe, Slovodian, and Mirowski, 2020). EIKE is clear in their mission, stating that their founding in 2007 was a counter-reaction to a “politics of fear” by the German government and media. Likewise, while the 85% output of the Spanish JDM is published during a period the Socialists were in office – 2007-2010 –, Spanish CCM organization outputs stop abruptly when the right-wing party – much more passive in terms of environmental reaction (Ecologistas en Acción 2018)– won the elections. Finally, in the UK the Brexit may also be playing a role –since a network of lobbyists, politicians and campaign groups are accused to be pushing the UK towards a hard-Brexit, “with the aim of axing environmental protection in the name of free-market ideology” (Farand, Hope and Collet-White 2019). Thus, at least for these cases, the picks of production may be reflecting an alignment with political contexts.

The question remaining would be, then, why the neoliberals and the far-right are merging with climate change denialism. A few authors have provided some explanations for both the US and Europe. Lockwood (2018) argued that hostility to climate change by right populists and conservatives may be due to the climate agenda being a too complex topic for the simple solutions right populists need to connect with their public. This is also an agenda considered “as being espoused principally by a liberal, cosmopolitan elite, counter to national interests”, a view “encompassing the idea that elites are corrupted by special interests, here represented by climate scientists and environmentalists” (Lockwood, p. 11). However, the latest research in Europe is also pointing at an ecomodern denial, so far only studied for countries like Sweden or Norway. This highlights the need for recognizing the role of identities, historical structures and emotions in climate skepticism, which may reveal that climate change skepticism is intertwined with a masculinity of industrial modernity that is on decline and which defends its values against ecomodern hegemony (Anshelm and Hultman 2014; Krange, Kaltenborn and Hultman 2019).

To summarize, we have found a number of trends and developments that provide insights going forward for further CCM studies. Among them, first we have provided new mapping of the most important contrarian think tanks in Europe and their outputs on climate change. This have produced a list of what probably are the eight most relevant organizations in Western and Central Europe regarding the dissemination of climate change contrarian messages. They are the Austrian Economics Centre (AEC), Centre for Policy Studies (CPS), Europäisches Institut für Klima und Energie (EIKE), Institut Économique Molinari (IEM), Institute of Economic Affairs (IEA), Instituto Juan de Mariana (IJM), Liberales Institut (LI), and The Global Warming Policy Foundation (GWPF).

Second, we conducted, systematic framing analysis of the contrarian discourse disseminated by this set of contrarian think tanks in Europe, including the coding of 1,669 texts published online from 1994 to 2018. This has unveiled an emergent climate contrarian counter-movement in Europe which not only shares US contrarian discourse and neoliberal stance but also its rhetoric. This revealed a proliferation of denial frames mostly in recent years, particularly from 2015 to 2018, with German Europäisches Institut für Klima und Energie (EIKE) being extremely active during this period, followed by Spanish Instituto Juan de Mariana (IJM) and British Institute of Economic Affairs (IEA) and The Global Warming Policy Foundation (GWPF).

Overall, this study has enlarged considerations of CCM organization counter-frames, discourses and influences beyond the US and English-only contexts. By mapping and analyzing climate contrarianism emanating from European think tanks over the past two and a half decades (1994-2018), ongoing considerations can more capably grasp international – and at times emergent – expressions and impacts.

Future research can draw on this contribution to further map evident and frequent counter-frames to carbon-based industry interests in Europe and in other countries, languages and regions around the globe. Future research can also further examine why certain frames (for example, links between dietary choices and climate change (C13)) are largely absent in public discourse in these six countries and potentially in other countries/regions. Further research can also extend into analyses of social media representations about climate change from these eight think tanks.

This research finds that CCM discourses track with many intertwined political economic and cultural identities for a better part of two centuries in the US and EU. Amid differentiated regulatory and societal networks and institutions that have shaped varied carbon-based industry decision-making and practices and divergent institutional arrangements designed address climate change over time (Pulver 2007, Levy and Kolk 2002), in both contexts CCM discourses tracked similarly. As such, commitments to economic growth and to carbon-based industry, and deeply entrenched technological optimism have been forces influencing discussions of climate change in the public sphere that have been found to give space for similar CCM discourses in both quantity and quality (Farrell 2016, Boykoff and Olson 2013, Carmichael and Brulle 2018). While it is easier to muddy the waters of productive discourse on the causes and consequences of climate change in the 21st century – bolstered by elite corporate benefactors (Oreskes and Conway 2011; Supran and Oreskes 2017) – this research has sought to better identify sources and constituents of discursive pollution in the public sphere.

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