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Department of Political Science

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# Toward establishing CO2-securitization's warning process and likely non-conclusion

Sören Floderus

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**Abstract**

For understanding undue politicization, Wilhelm Agrell and Gregory Treverton in their book *National Intelligence and Science* (2015) describe 'Intelligence Modes of Science' at work in also science's policy-maker-analyst interface, while analytical social epistemology points at medialization as additional background. In this paper, securitization's process is used as frame for exploring how IPCC's, the Intergovernmental Panel on Climate Change, claim at its conclusion (Brauch, 2009) fares in the area of CO2/climate, for an independent account and with an eye for Swedish processes in particular as they've been covered. Having first arrived at conditions for systematic review, including its probing narrative-meta approach selected, a look at climate communities allows to navigate a loose yet not too *inclusive* review protocol around the critical issue of medium-term solar-climatic linkage. Further recalling how Trine Villumsen Berling (2011) highlights the role of knowledge in relation to securitization's *threat-clarification* step, its absence in IPCC's 'climb' is noted, what also jeopardizes subsequent *legitimization* in that it involves convincing communication. For an attempt to sort out arguments, combatants in the wider climate war display all Hirschman's reform-historic argument patterns with both 'reactionaries' and 'progressives', however complicated by the varying mechanisms involved. Agrell's (2015, p 171) 'towering' warning processes get to illustrate how having same-side combatants escalating at both threat and defense side, building also politics of fear, carries the risk of seeing defense measures turned against the referent object, what resonates with also Huysmans (2002). Finally, stakeholders in mainstream media, with industry's quality work, insurance, and in energy policy-making are overviewed, for all such, as part of anyone's check on posture.

## 1 Introduction

### *1.1 Political appraising natural science?*

I pose as onset a hypothetical question: it seems analysts don't warn knowledge users clearly of natural science-related politicization with the CO2-or-climate issue[1] - where in this case also stakeholder areas like quality, media and energy might suffer - is it then because political science just lacks some natural-sciences vein needed? Would one not otherwise work with natural sciences enabling to best describe it, including its history with medialization, etc?

Regardless, I later realized at least such a vein is definitely there, with work on undue politicization's workings and their description - I'll soon get to these - and with recent developments in 'claims-making' *securitization* in particular. Perhaps only one such overarching question then remains: was the perceived lack of warning then attributable to political science just not engaging, for own reasons, in such 'referee'-like intervention anyway, *or* is it a matter of 'time' just not having reached there yet? -what is likely not true in detail either; I still now venture for the latter of those two.

Securitization as a mainly constructivist concept describes the act of claiming and developing a security concern for an issue. Its Copenhagen-school theory (Wæver, 1995; Buzan, 1997; Buzan *et al.*, 1998) has for >3 decades now featured the planetary CO2-threat as one of its major flagships, along the way allegedly securitized by the Intergovernmental Panel on Climate Change, the meteorology-and-UN body IPCC, as announced by itself (Brauch, 2009, cited by Copenhagen's Trine Villumsen Berling, 2011 writing on securitization's clarification step). Its process' main 'advantage', goal or price, is its elevation from politics, off its *agon* (antiquity's term for its arena full of hardships; e.g. Mouffe, 1999; Bond, 2011).

Securitization offers its processes for tracking this 'case' at hand, with in particular two of its steps apparently wanting with CO2: It has seemed scrutiny would likely describe - not only 'misuse' of the securitization term, but - misrepresentation of the CO2 science in relation to the security domain's *clarification*-knowledge step, hereunder relevant between-sectors dynamics and the threat's *legitimization* with the public.

Indeed, if misused, and as more dust settles, political science might get to spell out (to e.g. media, industry and policy-makers) how they want to grasp the significance of, say, Ascher's (2010) warning of institutional interests (in addition to private), their challenge regarding suppression, over-

[1] I will here variably refer to the issue with the terms CO2 and climate, depending on the context.

simplification and distortion - adding e.g.: you want to *read* a systematic review, not have (non-scientist) policy-makers pretend to do it *for* you (then actually misrepresent it), including to have science look inward at own special interests to not undermine its usefulness.

### *1.2 Aim and quest of study*

Thus this study's *aim*: to explore and probingly try out political science's likely available, appropriate methodology to this end, i.e., to independently verify CO2-securitization's conclusion or non-conclusion, including as needed - what involves scientists - its own balanced first take on systematic review.

And its related *question* asked: what reasoning lies behind - can its *argument* be more understandably translated? – also here I'm able to use the CO2-issue as prime example.

I personally came to delve into political science, via its intelligence-analysis field, as a means of exploring how my *background* field, physical geography, climate's 'all-source analysis' (e.g. Fingar, 2012), might be *conveyed* 'by the books', *including* the significance and nature of its slow climate 'war' simmering with society at large. I now find this present format: the accessible undergraduate term paper and its room for onward similar refinement - what will certainly be called for before anything else - the most fitting one the way it allows for *all* of the above. Furthermore, the way exactly this is not really *found* 'out there', at least very visibly, would seem to excuse this 'just sorting things out' being still far from complete etc, i.e., how probing and trying this still is.

## 2 Background

The two main approaches' history and inroads are presented, as apt to integrate:

### *2.1 Up against undue politicization*

#### 2.1.1 Workings with and in science

Security and science are compared as 'knowledge domains' by Wilhelm Agrell and Gregory Treverton (2015), what takes us along political science's natural-science vein. Their book's main theme is that security's (including intelligence communities') domain is about to adopt complexity

and uncertainty insights and practices from science's domain, summarized using Ulrich Beck's (1992) expression *risk society* and including the most current CO2 topic. In this they did *not* however use the framing offered by securitization theory in particular.

They do get around the definition of undue vs. legitimate politicization (p 158), the latter meaning just an issue's reaching of the political agenda, while the former implies pressure, biases and distortion. In security's domain intelligence-services analysts have resisted such by way of nurturing a special positivist tradition, of e.g. imagining 'speaking truth to power'. Undue politicization is described as quite commonplace in both domains however, not the least in security's (see also Jervis, 2010, and Coletta, 2017), to the extent that its undue workings in the policy-maker-analyst interface are coined *Intelligence Modes of Science* as they are spotted in also science's domain. The way policy-makers function in the interface involves self-deterrence on the part of analysts and what is termed *prima facie closures* whereby 'action' and funding get to overrule any doubt posed by e.g. uncertainty.

### 2.1.2 Sweden's processes

Further on politicization, Åsa Knaggård (2009, 2014) described the way it entered Swedish security policy's CO2-issue from a *science* perspective: how science's *genuine* uncertainty appeals to neither policy-makers nor realist scientists overall wary about offering policy advice. The uncertainty was at first correctly forwarded to policy-makers, with the World Meteorological Organization, WMO, culminating with the Brundtland report (WCED, 1987). The result was a *re-framing* of the CO2 science, achieved together with the IPCC and its forerunners, enabling to instead formulate quantitative CO2-reduction targets also aiming at *action.* IPCC's securitization claim apparently could be accomplished only after such re-framing and working out of concrete targets with policy-makers, turning uncertainty into incrementalist certainties. This it'd seem be what policy-makers, from their perspective, needed in order to feel 'ready to run' with some or any 'certainty'. So scientists' 'useless' uncertainty was abandoned, and (in my tentative view) so thereby was the *clarification* step as part of a securitization process.

Then via the Swedish Climate Committee as broker, around 2000-01, this new IPCC-narrative was absorbed by Swedish policy-makers. IPCC and policy-makers in unison arrived at the subsequent likely misinformation - any former truth-telling having been framed too inaccessibly - what was further forwarded toward audiences - for legitimization - together with mainstream media. Knaggård also describes how IPCC's change of framing involved the blurred definition of 'climate change' whereby uncertainty is turned into certainty by way of looking at short-term temperature only (IPCC,

1995). Here I'd add that such is the nature of *climate science* that it nevertheless harbors genuine uncertainty - what I'll illustrate further; with time it just wasn't the focus of policy-makers.

So the outcome in turn came to be served the public through also a medial-public climate movement as securitization's legitimization step, outright communicating even *unequivocal certainty* instead. Here CO2-securitization did not reach conclusion, in that clarification (convincingly involving the scientists) and legitimization were not prioritized, or ignored, while new sectors got involved. These external steps, being the more difficult ones, were apparently kicked forward, whereby blurring of concepts 'fit the bill'.

As a consequence, by the 2000's climate had risen to the top among Sweden's (purported) security issues. The loose science attachment makes up a gap left toward science suggesting to complete the tale of the CO2-topic's securitization process knowledge-wise.

### 2.1.3 Analytical social epistemology points at medialization

Analytical social epistemology, SE, would seem prone to suggest such politicization comes out of its history of *medialization*. Indeed, what is central in this the science domain's 'own' field of intelligence analysis, analytical SE, meaning its knowledge theory developed out of classical epistemology (out of philosophy, only later as much sociology, history and psychology) also *characterizing* science's in comparison with security's knowledge domain. This focus pertains to its positivists in particular, in its field dubbed 'veritists' and as representing analytical as opposed to critical SE, like Alvin I Goldman (1999) and Finn Collin (2011; 2013). On medialization, see Peters *et al.* (2008) and Pedersen & Collin (2015), for a brief history of SE, see Collin (2020). Here, MacKenzie's (1990) *'certainty trough'* on the other hand fits both these domains' applicability - the term describing how analysts above *and* end-users below *both* tend to display less certainty in relation to knowledge communicators and brokers at levels in between: 'the trough'.

What emerged out of medialization was a system rather unfit for science communication, at least given its historical setting in combination with this CO2-issue, with e.g. the manner its trough stands to gain from having its belief version dominate. As covered by analytical SE, considering also sociology and history as circumstances complicating otherwise independent, optimally 'truth-tracking' knowledge production and its distribution, looking at beliefs and motives, classical veritism is here (Goldman, 1999) distinguished from its opposite definition-wise, 'veriphobia', and more vaguely, *instrumentalism*, whereby the latter places itself in and occupies communicative roles relative to science (Collin, 2011; 2013).

Its history starts with medialization seen as a post-war adaptation happening in science upon media's general approach for popularizing. This enhanced science funding overall and led to policy-makers reciprocally offering also the general undertaking Public Understanding of Science *its* special program, PUS - we're then in the 1980s (Lock, 2011). Thus, Science Communication's new field (SC) came to settle in front of science and near education as near-policy and policy bodies. From here SC addressed policy-makers as science-funding broker, inviting its 'upstream engagement' (Jones, 2011; Wilsdon & Willis, 2004) and nurturing 'policy pull' with any lack of 'science push' (Bielak *et al.*, 2008). Here both SC and science's own communicative bodies, being institutional, seem prone to collegiality- and consensus-orientation not always favoring veritism.

### *2.2 Securitization as frame*

#### 2.2.1 Critical-IR beginnings and the subsequent division

As related by Villumsen and Büger, 2010 and Berling, 2013, going back to Keohane (1988), from before securitization was coined, 'reflexivity' implied Critical Security Studies' watching from the sideline, constructively aware of the 'not impartial' self as opposed to reigning policy-makers' 'problem solving'. Further relevant background related is the importance of politics of *fear* as part of threat-building (e.g. Williams, 2011), and of the process continuum: *non-political – political – securitized*.

For the subsequent treatment of environment by the then growing field of securitization, Maria Julia Trombetta (2008) offers a summary. Among concerns have been the consequences of evoking security, where she cites Huysmans (2002) writing on immigration mainly. Yet for a similar reason also the Copenhagen School's early goal was politicization, or de-securitization (Wæver, 1995), and its preference was for issues not yet securitized to remain so (Buzan *et al.,* 1998). There lies some ambiguity in that an apparent *absence of conflict,* including a lack of *the enemy* and not invoking *international relations*, IR, favored to rather settle for (legitimate) politicization, so securitizations were being called off only therefore, by the more realist founding school, while underlying existential risks nevertheless ensued presumably; failure to do so would bring in a too precarious security logic and context. Others thought differently, notably Critical Security Studies, and the two 'camps' forming, akin to IR's realists-vs.-liberals, were sought bridged.

Already Buzan *et al.* (1998) had pointed to *science* as a peculiarity of securitization's environmental 'sector', the multiplicity of actors it entails and how these are yet to be determined, unlike in

established sectors (like Life Sciences and Engineering - my remark). Here, with citing de Wilde (2008) on that underlying risk-assessment debate, Trombetta finishes discussing *it* as such. I will continue it following an own CO2 account.

### 2.2.2 Sweden's processes

Jonas Norén (2006) covered Sweden's CO2-securitization process through the 1980's and 90's, the way it entered security policy-making. He describes how it was well underway already before IPCC's Madrid-1995 moment of identification decision (Lewin, 2017); the language then 'hardened'. Meanwhile it was felt security policy overall was ripe for a post-cold-war overview, what made a CO2-widening seem feasible too as a peacetime-security theme paving way for its alternative from a critical-theoretical camp - only, such was not discussed in Sweden's process. The proposition of 1997/98 (cited in Norén, 2006) made for a breakthrough (in SOU 2000): *"The climate change threat is one of the more complex problems mankind has to solve"* (my translation) – Beckian risk language, what then called for legitimization (Buzan *et al,* 1998, p 25) in relation to 'reference-object' audiences.

Lacy (2005) had described environmental threats as below-military ones and the Swedish process repeats this initially by referring to 'low-level threats', while Dyer (2001) had warned that the all-pervasiveness of the new alternative risked undermining the traditional view (also Deudney, 1990). Clarification came with the proposition of 1998/99 where climate was *not* to be included, spelling de-securitization, or at least some concern, hesitation and delay. Dyer's warning had kicked in according to Norén with "counterproductive" effect. For legitimization climate could not be brought into *totalförsvaret,* the 'total defense'. Civil defense apparently was another matter, so the whole was nevertheless accepted as cross-sectorial, seeing to 'the whole threat spectrum/scale', thus resources were transferred from security's to other sectors. Norén summarizes the process (p 22) as simply two policy-lines struggling: 'it's not security' vs. (from the critical side): 'yes it is', yet not being about natural-science knowledge or not really. The outcome spanned both lines and remained "paradoxical" without a "central viewpoint". What had happened between 97/98 and 98/99 was the transfer of the issue from the environment to the more traditional defense ministry.

So it did not invoke CO2 science much, rather it was about the CO2-securitization process' *widening* of the security policy's scope *in itself,* i.e., it followed a mainly organizational course centered on widening technicalities, not about any science on how likely a threat was.

## 3 Method

Adhering to systematic-review methodology as follows, including its inherent selection of materials, can be said to operationalize an hypothesis suggesting that political science, given politicization insight, is well suited to handle the CO2 narrative, enabling for stakeholders to better own up to consequences of undue communication:

### *3.1 Systematic Review: exclusion and narrative meta*

Laying out Systematic Review as a field in itself, Gough *et al.* (2017) list its key activities: clarifying the question, then 'mapping' (finding and describing), synthesizing, and establishing of claims (appraising). The authors are from the social sciences, close to its agendas etc, what they're all over and thus able to also guide a reader free of.

They point out that going about research uninformed by *it* may well be *unethical* even. Not being *explicit*, rigorous and accountable then would mean e.g. the non-inclusion of studies without justification, asking: are decisions behind such appropriate and applied in a consistent and rigorous manner? If not, there are likely personal interests, non-transparent knowledge boundaries, unequal representation of familiarity, quality and relevance problems related to such, unclear drawing on practice knowledge, and inappropriate manners of having assessed the expertise to start with.

Specifying questions and methods results in the *protocol*, to be worked out on beforehand, or iteratively for avoiding bias, with numerous challenges: selection of method, terminology confusion, resources, capacities, non-explicit *inclusion criteria* (whereby otherwise *exclusion* can be fine), search efficiency/imprecision, and stakeholders' involvement, like governmental control agendas including undue politicization questioning the empiricist, but also knowledge stakeholders including actual scientists who can be invited to contribute.

The *map* is an intermediate product from which a search can be narrowed, and it can be more or less descriptive or analytic. The review can then be a faster *scoping* one, thus not yet all *systematic.* The *synthesis* can turn out more descriptive than fully integrative - as in: an *integrative review.* Numerous sub-reviews can be synthesized as a *meta-review* - opted for here. Such a tertiary-level review of reviews (overview or umbrella review) is aggregative and can rely on reviews for primary studies, a hybrid approach.

### 3.1.1 Enrolling climate's communities for the protocol

A brief overview of the CO2 science is here pertinent. The 'climate war' is *real*, in the sense: reflects some real drawn-out unsettledness in the actual science. One overall rationale with this overview then is that grasping science's social (downstream) epistemology helps explain, for novices and laymen in disbelief, also the upstream climate science *itself* better, provided it is correctly and succinctly described. This is what the field of systematic review encourages (Gough *et al.,* 2017), and that of analytical social epistemology suggests (Goldman, 2001): what the war is *about*, and *where* and *how* existing bias is produced.

Climate science is not *one* community, and has mostly not hosted even a single 'climate community'; that there exists one such is otherwise wished for, and pretended. The actual ones display one dominant relationship holding the theory-empiricism dichotomy: Modeling vs. 'Paleo' (Holocene paleoclimatology, analyzing climate archives in sediments, ice, trees, caves/speleothems; the Holocene spans almost 12,000 post-ice-age years), and Space-Climate somewhat torn between them - those are names used for the three main communities involved in climate's 'war'-contention work. Systems science can be part too, and Oceanography where not seen as part of Modeling, the latter word otherwise referring to atmospheric processes really. Cryosphere's (ice) work can span both Atmo/Hydrosphere's and Paleo's communities, and there is deeper historic-geology Paleo. All such is hardly critical, only useful in grasping also science-history and social aspects - or, as indeed words like 'us' or 'climate community' are fronted.

## *3.2 Journalistic skills and roles*

Methodologically the approach could also be seen to lean towards investigative journalism's intelligence-gathering competencies and techniques, in that similar inquiry need, conceivably, to be implemented through also such professionals, skillfully using the *HumInt* code of its trade, and independent *Interactional Expertise*, informants with relevant science background able to insightfully engage, and openly relate from, the actual in-science area (Collins & Evans, 2007).

## 4 Materials

Towards developing a meta-review protocol, numerous whitepapers, primary-level articles and accounts are available attempting to, expected, purported or said to lay out, cover or get around the climate-science narrative as it includes human-scale greenhouse and/or solar processes involved. Here the most underlying 'war' issue is, I submit: detection of multi-decadal- to century-scale solar-climate linkage. This scale is longer than the short solar-cycle scales (11 yrs, 22 yrs), only not among any yet-longer millennial, orbital or solar-evolution ones, so is here referred to as medium-term solar-climate linkage, MSCL. Some accounts do treat also these (even as 'main course'), others treat only one of or only *both* the other. Where Space-Climate is invoked, one may take note of whether and how also Paleo and/or Modeling are, and to the extent Paleo is, paleo-empirical MSCL may figure.

## 5 Result

### *5.1 Climate's story continued*

MSCL is then often acknowledged as existing (Engels & Van Geel, 2012; Jiang *et al.,* 2015; Beer & van Geel, 2008; Berner *et al.*, 2008; Morton, 2014) - still, in a textbook (Bradley, 2015) and in a review (Christiansen & Ljungqvist, 2017) a bit more guardedly. If existing,[2] its significance would lie in its underlying mechanism remaining undetermined, unable to improve global-climate hindcasting. Uncertainty then lingers on regarding factors behind also modern warming, falsifying the IPCC SPM's two-sigma certainty claim (IPCC, 2013) on dominantly anthropogenic global warming - the *attribution* issue. This insight is reached when incorporating also how solar activity has reached normal again starting three centuries ago following a 'Little Ice Age', LIA (with a late-Medieval onset), or grand-solar-minimum cluster, with a fairly recent solar peak even (Wu *et al.,* 2018), taking into account also cumulative ocean warming's 2-4 decades ocean-atmosphere *ocean lag* (this too from Paleo; Eichler *et al.,* 2009; Zhao & Feng, 2015).

Further, an existence of MSCL appears increasingly strengthened in only recent decades (Bond *et al.,* 2001; Neff *et al.,* 2001; Magny, 2006) not the least the latest (Steinhilber *et al.,* 2012; Swindles *et al.,*

[2] MSCL may have been discovered first by US-Swedish geologist Ernst Antevs in describing an LIA-grand solar minimum linkage from tree-rings, mentioned 1925 (Brooks, 1948, p 367). So its implied uncertainty could stand ~1 century old; this I find after (possibly not thorough-enough) library research – still, in that it cannot precede Wolf's late 19th century *discovery* of *medium-term* solar variability (Fritz, 1893), it cannot be e.g. Herschel's (1801) much-earlier writings on *short-term* SCL.

2013; Duan *et al.*, 2014), with in particular more speleothem records presented. This ‘war-work’ was continued in e.g. the global science program PAGES Solar Working Group (Beer 2013, 2014).

Here much conviction-side literature seems all too prone to instead suggest that only CO2 can explain modern warming, thus only volcanism and ocean oscillations would effect any medium-term Holocene variability, if *such* is even acknowledged. Just neglecting medium-term solar variability altogether is quite commonplace too. Overall, what is displayed looks like some *collective* case of the well-known Dunning-Kruger (D.K.) effect (Kruger & Dunning, 1999 - as such documented at individual level however): a sizable literature and cadres of its proponents apparently just 'innocently' unaware of such deficiencies, with ample funding making for wide proliferation of the conviction claim.

When Modeling goes through its expectations on Paleo, the need to incorporate implied constraints is otherwise accepted, even as MSCL is put forward (what's done too; Henderson *et al.*, 2009). The apparent D.K.-like phenomenon does not reflect *all* of Modeling.

There are also examples of unconvinced Modeling and of convinced Paleo - alternative stands in their respective communities. The former would be the more well-known, unconvinced, in-science one. The latter (convinced Paleo) counters unconvinced Paleo along two notes: modern warming is unprecedented (Björck, 2011), and, MSCL is not clearly detected statistically (Turner *et al.*, 2016 - restricted to regular periodicities).

## 6 Analysis

### *6.1 Berling’s knowledge take: securitization not finalized*

For concluding securitization’s track, Berling (2011) explored and exemplified how securitization theory's knowledge connection in relation to *clarifying* a candidate threat, ‘its objectivation’ - through its ‘context’ (Wæver, 1995) - had come to grow relatively disregarded. While both Wæver and Buzan emphasize how securitization’s *utterance* be enough, according to Berling Buzan *et al.* (1998) adds the context detail, and how the actor *clarifies* (knowledge-wise, I’d add with Berling) how the threat towards the reference object is existential.

Indeed, Buzan *et al.* (1998) underlined that need for knowledge ’context’ through ‘objectivation’, what Berling (2011, 2013) holds up for re-discovery, still just an undercurrent part of the with time

vast securitization field. If securitization is described as constructivist only, it needs to be pointed out that the clarification step negates that by adding its critical piece of realism.

At this stage one may note how IPCC's Brauch (2009) no longer represents Critical IR's reflexivity as its purportedly securitized issue came to widely fill up security policies. Berling (2011), covering the securitization-science connection and its issue of context (citing also Balzacq, 2005, 72) notes Brauch's claim being undermined by such as well – as he forms part of a pandemic-and-climate-fact knowledge cluster looked at (one of four similar such through the history of securitization). She suggests employing 'practical reflexivity' meaning, essentially, not too power-aligned skepticism, and (2013) describes how Bourdieu (2004) coined and saw this clearly too.

Here I would remind of - just as freely picked from the intelligence-analysis field - how a threat can 'turn about' through reversal of a warning process (Agrell, 2015, p 171, also Huysmans, 2002) to see counter-measures strike at referent objects themselves, such as audiences unwilling to 'legitimize' (see also Epstein, 2014, on welfare as end-consequence). Agrell describes the setting of policy-makers overseeing and entering *warning processes* in light of threats, to security but also environment, health etc. The related risk then posed by undue politicization has promoters of risk *and* of escalation on *both* sides of a scenario, defense *and* threat. Add to this: complexity, uncertainty, normal-psychology *groupthink* (Janis, 1982), the entertaining of adversarial straw-men and science-relational inhabilities, It underlines securitization as able to make for undue politicization, and it sees veritists still calling for de-securitization from the sideline, only in new ways.

More succinctly, two dimensions are needed for navigating off-*agon:* one science dimension, with threat clarification mainly, and legitimization attached, and the non-politics - politics – securitization dimension: a 2x3+1-steps 'climb' in both dimensions, complicated by veritist IR-realists and scientists obstructing. Here, securitization *does* counter IPCC's claim: clarification and legitimization remain 'unclimbed'.

### *6.2 The argument*

#### 6.2.1 Hirschman: beyond description, arguments turn intransigent

I would also add Albert O Hirschman's (1991) version of argumentation analysis drawing on 200 years history of democracies' reforms featuring 'progressives' vs. 'reactionaries'. The latter repeatedly and invariably touted 'perversity', 'futility' and 'jeopardy' as opposed to progressives' 'synergies', 'imminent danger' and 'on-history's-side', prone to result in intransigent standoffs. My point here is,

Hirschman actually ends up deriding both sides and favoring 'mature' bases for discussion: both sides be “canvassed, assessed, and guarded against to the extent possible”, and discourse “democracy-friendly”. The reactionary points need to be *"qualified,* mitigated, or otherwise amended" (p 167; my italics), calling for readiness to "modify initially held opinions in the light of arguments of other participants and also as a result of new information which becomes available in the course of the debate.", citing Manin (1987).

Hirschman straddles a gap over to political science’s argumentation analysis, AA, which focuses on AA’s first *descriptive* phase, as described by Kristina Boréus and Göran Bergström (2012), where Hirschman rather represents AA’s *valuing* phase.

### 6.2.2 Discrepant messages

Without delving more into ‘deep AA’, rather honoring Hirschman’s (1991) extended valuing, i.e., the canvassing and qualification: this climate-review protocol targeted the core of uncertainty, what suggests undue politicization whereby policy-makers prefer to oversee with a (self-inflicted) discrepancy between science’s Systematic Review as represented by IPCC’s raw Physical-Science basis - the mostly useful ‘catalogue’ - and its own *Summary for Policymakers.* This was aided through the use of blurring, entertaining double definitions in wider use (like ‘global warming’ implying man-made, or not), terms once allowing, as broker, to serve policy-makers in demand of some measure of certainty enabling incrementalist action (Knaggård, 2014).

Agrell and Treverton’s (2015) *Intelligence Modes* are here to be compared with the impact they have had on the actual CO2-science, what seems largely limited to one community, Modeling, running ahead through *prima facie closures,* what most substantially connects downstream biases to dys-functionalities within also the sciences - such as undue certainty brought by overlooking or ignoring MSCL. The *trough* itself then sees to that *such* produce is what reach *its* distributional channels and users. Here, spread and adoption of ideas is more lightly handled, by a *climate movement,* than among science’s communities.

So Paleo's solar narrative's uncertainty trumps Modeling's human narrative's alleged certainty (IPCC, 2013) also asking: why isn't the planet reacting to the >40% human CO2-concentration increase more already than what it seems to do - considering also the lack of a ‘tropical hotspot’, changes in albedo (planet whiteness), etc - indeed, should have done *also* as a response to simultaneous *solar* processes given MSCL? There's both sides’ blunt matter of: if *that's your* process in full swing, then where's the effect of *our*?!

Now since reactionaries cannot engage both Hirschman futility and perversity simultaneously, it's rather jeopardy-and-futility than jeopardy-and-perversity, unless however there be the mix-up of two CO2-mitigation mechanisms involved: one atmospheric and one economic, what can spell futility climate-wise *and* economic jeopardy *as well as* perversity (loss of economy-related security) depending on what is pursued economically. Progressives invoke all *their* sides': imminent danger (of non-action), synergies (within draconian measures) and having history on one's side (progress is cleaning).

### 6.2.3 Climate-war combatants and straw-men

The result would call for also a brief characterization of the climate movement, its climate war's combatants, straw-men etc, still without room here for the broadest social aspects of it.

The CO2 issue's earlier days saw Modeling apparently *defining away* Paleo in a quest to unequivocally declare the detection and attribution of without-doubt policy-relevant AGW, anthropogenic global warming. This would in the 1990s ignite (as described by Lewin, 2017) the climate war, with policy-makers and opinionated amateurs increasingly drawn in from both political flanks.

Modeling activism's message now boils down to IPCC's SPM's (2013) claim about a 95-% certainty of Man as dominant factor behind a recent > half-century of warming, and to a 97-% (sometimes 99-%) consensus figure - the 95 being exaggerated and the 97 downright deceptive; both figures may well be roughly one order of magnitude off. If the 95 and the 97% are expressed as their counter-sides' 5 and 3%, corresponding real estimates (although quite uncertain) read around 50 and 30%, i.e., with the 95 and the 97 rather at 50 and 70%, respectively (with the 'consensus' figure: at least as studied some 8-10 years ago, see Farnsworth & Lichter, 2012; Bray & von Storch, 2014; Stenhouse *et al.*, 2014; Strengers *et al.*, 2015).[3] The two are related: certainty not in place is reflected in non-consensus.

IPCC's (2013) full narrative in the area, its focus as one gets near the area of Paleo's solar–climate linkage, is rather on Holocene climate variability and the extent to which it can be illustrated using general-circulation modeling, but then by invoking as solar forcing only what we think we roughly know of total solar irradiation, TSI. Actual MSCL (not too controversial, only not well understood)

[3] Then it's my judgment, given how Paleo was often not even counted as 'climate science', that the true figure may have been still lower. '97%'ers generally not even discovered this almost 'half' of climate science as searches were on 'global warming'and other conviction-side wording most-often not used in Paleo.

then and presumably therefore is just not addressed much further, despite how such detection without understanding renders century-scale high-resolution modeling for predictive (or projective) purposes largely futile.

Just observing the political climate movement, including in-science parts from Modeling, Biology and deeper Geology, and its ‘warfare’, the impression is one of normal, mainstream science enthusiasm morphing into hostilities towards what *it* sees as political interference too - a mirror image: a broad, largely amateurish, oppositional ‘blogosphere’. This, its counter-movement – indeed, political too, but consisting mainly of off-policy laymen (less of trough instrumentalists) - is also not widely familiar with Paleo's account; it *suspects* it. It is (and many others are) routinely labeled *deniers* and then painted as e.g. touting non-genuine uncertainty rather representing convenience and financial dependency on fossil-fuel interests, in particular waging a reprise of the 1990s tobacco war involving some same actors (e.g. Hoggan & Littlemore, 2009). To the extent the blogosphere is wrong and repeats lightweight talking points, it is lectured towards with fervor; this is all there is to such however. The climate movement overall fails to convince in-science audiences in Paleo, Geography and Space-Climate as long as it itself stays under-informed about Paleo's actual stance and fails to demonstrate proper knowledge of *its* analysis, including on Holocene paleoclimatology. Beyond that, the occupation with the counter-movement functions mainly, and *merely,* as the climate movement's own irrelevant straw-man. The amateur skeptics' movement in turn may want to ponder this role. When criticism and lecturing *is* justified, it could stop participating to said extent, and not itself participate in any undue politicization in media, education or SC - staying with science, qualifying.

Minor parts of the war play out also in the primary literature. In a special issue of *Survey of Geophysics*, aiming at covering the whole global-warming issue, Space-Climate’s Mike Lockwood (2012) dismisses Paleo's "reputation" as political. A rare example of all three communities co-writing a review article (Gray *et al.,* 2010) surrenders to having the main sides let out incompatible products (MSCL and modeling without ocean lag, respectively).

*6.3 Stakeholders and consequences*

Before concluding further, external stakeholders, bearing undue politicization’s ‘off-study *consequences’,* will be accounted for as I’ve roughly come to group them. The first two pertain to science’s and businesses’ civil knowledge domains primarily:

### 6.3.1 Media

Mainstream media decisively takes major part in the climate movement's undertaking in relation to the securitization process' legitimization step, in turn requiring communication of outcome from its preceding clarification step. Since the latter as related above has largely failed, while instead producing 'certainty misinformation', media's communication, being to some extent accepted (e.g. Poushter & Huang, 2019), also feeds doubt and skepticism. Here it seems media shows too little insightful interest, visibly, for also investigative journalism to dive into own claims, even as (in Sweden) the official resource and channel for complaints *Granskningnämnden* is out of function since long in the area[4] and rather some media 'crash investigation' could well be initiated given the development and media's self-image. And, as the fine positivist principle of avoiding *false balance* is held high, it can also be wrongly applied by never investigating whether not media's preferred one, the trough, sometimes and refreshingly be uninvited, spelling in-science discourse.

### 6.3.2 Industry: Quality and Insurance

With product and service quality work, and in insurances, Industry's *audit society* (Power, 1997) has had to handle a newly-arrived 'planetary' area , CO2 (next to Life Sciences and Engineering), a new actor with untried credentials, as noted by Buzan *et al.* (1998) in relation to securitization, which could in the end possibly lead to violation of marketing legislation (my remark). The situation hosts an interesting internal encounter: while inherently instrumentally-geared, veritism is held high in industry for reasons of competitiveness, rewards, even as a condition for survival. From here comes the term Knowledge Acquisition, KA, run as part of Strategic and/or Business Intelligence, BI, all aiming at innovation broadly speaking through e.g. New Knowledge Management (McElroy, 2002). Its empiricism and analysis is trained on both frontend markets (users, customers) *and* on backend own-product/service design, its dependency on a supply-chain and on-goings there. Also here, instrumentalism acts to counter veritism, both internally and externally triggered, through sheer organizational dynamics involving own policy-makers, and analytics, much like in intelligence communities, and with markets taking an interest in supply-chains - markets thus addressed through *green marketing*. With expectations specified in terms of ethics/environmental features, new frontend champions thus enter organizations, accompanied by the formerly backend- and product quality-oriented audit society, to meet and take on knowledge residing in the backend. It's here that management might want to preempt clashes and marketing consequences by picking up e.g., much like here, securitization's new-found knowledge vein.

[4] This is not just 'common knowledge' but was actually tested by this author (as 'fact-checker') once ~10 years ago using an obvious, fast-controllable and blatantly false main-news item in the area of sea-level alarm.

### 6.3.3 Energy

The third stake pertains to also the security domain and IR more clearly:

Energy-supply policy, in particular that of Europe in light of economic isolation of Russia since Putin's game-changing Feb 24, 2022, has this added dimension of: do we now need to make without Russian fossil fuels for not only CO2- (purportedly), but also IR-reasons? - and do we dare pick up e.g. clean coal for substitution?

Note how again, this need not imply merely security consequences as suggested by CO2's securitization process initially, which would be a more direct climate threat including refugees, extreme events, sea-level rise, use of and conflict around the Arctic, etc. As related above, if relying on undue politicization it *can in itself* present its own threat rivaling the original's – this in case CO2-consequences are more about energy supplies, less about run-away climate, in which case it might appear to be the more easily handled after all.

## 7 Conclusions

It's been attempted to pursue one political science's own natural-science vein in order to shed light on the threat of CO2, picking up its legacy of understanding undue politicization, and the framing offered by employing securitization theory. Here IPCC had not only built CO2's securitization claim, but also claimed having successfully finalized its processes (Brauch, 2009). Exploring whether political-science methodology is applicable, at least its original hunch was not falsified: the CO2-securitization is not concluded - building on much sieving of materials since ~10 years (very much more than what made it in here). At its core, it rests on being able to 'weed out the rogue' - a protocol guided by interactional expertise. Perhaps studies like this represent a more near-science argumentation analysis needed?

This compilation worked, yet could certainly have benefitted from more time, organization and full documentation. It discussed the importance of a systematic-review protocol, which revolved around the identification of medium-term solar-climatic linkage, based on mere experience, and still without going into its plausible atmospheric mechanisms in detail.

The study's aim at answering a question about reasoning and argumentation hinges on whether this was really a consequence of the protocol-led output. It attempted to use a not too inclusive protocol.

The argument was probingly discussed in terms of Hirschman (1991) reactionaries-vs.-progressives rhetoric, which itself as method suggested to just dig in further for qualifying. A more fruitful translation I suggest is that relating to Agrell's towering warning processes seeing same-side combatants on both sides, how it can present a threat 'turned about' striking against the original referent object, what resonates with also Huysmans' (2002) warning of such in the context of securitization.

An additional point would be that at least the climate war is 'in-science real' and should drag on incessantly, *until perhaps ending*, especially as new generations enter.

Also the pre-conceived notion on CO2-securitization's likely non-conclusion remains standing, and looks forward to further discussion. Finally, stakeholder areas bearing undue politicization's consequences were summarily walked through: media, industry's quality-work and insurances, and energy.

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