A close reading of *Evaluation of science advice during the COVID-19 pandemic in Sweden* - a problematic paper

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This is an attempt at an analysis of the paper "Evaluation of science advice during the COVID-19 pandemic in Sweden"[1] by Brusselaers N, Steadson D, Bjorklund K *et al,* published in Humanities and Social Sciences Communications on 22 March 2022. Upon first reading the paper we noticed several issues and decided to take a closer look at it. Our conclusion is that the paper contains numerous and substantial problems, some of which we think are serious enough to warrant a retraction. In our analysis below we focus on a total of 64 issues which we have divided into four categories, the three we consider most serious, i.e: incorrect references (12 issues), misrepresenting people with potential harm to their reputation (5 issues), "cherry-picking" sources (2 issues, plus a discussion of how the authors in some cases ignore that the papers they quote reach a completely different conclusion than the authors without the authors mentioning this) and other issues (45 issues). Quotes from the paper are in *italics*, followed by the page number in the paper (or the supplement) in parentheses. We have also numbered the issues in each category to make it easier for ourselves to refer to the different issues, and thus hopefully made it easier for the reader.

Incorrect references (cases where given references indisputably say something else than what is claimed in the paper)

1.
During spring 2020, many individuals were not admitted to the hospitals, and did not even receive a health examination since they were not considered at risk—resulting in individuals dying at home despite trying to seek help (Vogel, 2020; Bjorklund and Ewing, 2020; Hiselius and Arnfalk, 2021). (6)

In the three sources, the only relevant mention is in Vogel: "Newspaper reports told stories of people who died after being turned away from emergency rooms because they were deemed too young to suffer serious COVID-19 complications."[2], but there are no references to these newspaper reports. Bjorklund and Ewing makes no mention of this and Hiselius and Arnfalk[3] is an analysis of "the effects of government and public agencies' recommendations on meeting and travel behaviour on employees at five public agencies in Sweden" and has no relevance here. In fact, statistics from The National Board of Health and Welfare show that deaths from covid-19 (i.e. with covid-19 as the underlying cause of death) outside of hospitals and nursing homes were considerably rarer when compared to other causes of death[4].

[1] https://www.nature.com/articles/s41599-022-01097-5
[2] https://www.science.org/content/article/it-s-been-so-so-surreal-critics-sweden-s-lax-pandemic-policies-face-fierce-backlash
[3] https://etrr.springeropen.com/articles/10.1186/s12544-021-00471-9
[4] https://www.socialstyrelsen.se/globalassets/sharepoint-dokument/artikelkatalog/statistik/2020-11-7034.pdf, p.4

2.

The Public Health Agency and Ministry of Health and Social Affairs discouraged the use of face masks by the public and claimed face masks are ineffective, dangerous and spread fear (2020a, Vogel, 2020; Bjorklund and Ewing, 2020, 2021j). (6)

While the Public Health Agency has been sceptical of the effectiveness of masks used by the general public, there is nothing in any of the sources to back up the claims that the Public Health Agency or the Ministry of Health and Social Affairs have stated that face masks are dangerous and spread fear. In Vogel, Tegnell is quoted as saying "It is very dangerous to try to believe that masks are a silver bullet.". This is *not* the same as saying that masks are dangerous. Vogel also states that "Swedish authorities actively discouraged people from wearing face masks, which they said would spread panic, are often worn the wrong way, and can provide a false sense of safety." While it is certainly true that the Public Health Agency (as well as the ECDC, etc. – see also the discussion of issue no. 38 in the section "Other Issues", and the conclusion) has said that masks can provide a false sense of security and can be a risk if they're worn incorrectly, there is no source regarding the claim that masks would spread panic, and to the best of our knowledge, this is not something that has ever been stated by the Public Health Agency or any other government agency. In Bjorklund and Ewing an unnamed airport employee is quoted as saying "but the airport's response was that we were an authority that would not spread fear, but we would show that the virus was not so dangerous." This is an unconfirmed statement ascribed to Swedavia, the owner and operator of 10 Swedish airports, not the Public Health Agency or the Ministry of Health and Social Affairs. We also note that the source 2021j is an anonymous Wordpress blog[5]. Apart from being a dubious source in a scientific article, it also doesn't provide anything to back up the claims regarding face masks. The same argument is repeated twice, with the same dubious source (2021j), first on page 7: "For example, although several of the people involved publicly made statements that face masks were not needed, or even 'dangerous' or contra-productive (2020r, Bjorklund and Ewing, 2020)—they later claimed they had always been supportive of their use (Tegnell, 2021, 2021j)", and again on page 9: "Mounting evidence (including on aerosol spread, asymptomatic and presymtomatic spread, the effectiveness of face masks, infections in children) was ignored, and contradicting and misleading information was spread to the public (2021h, 2021j)".

3.

Although some healthcare institutions did implement mask-use on their own initiative, mask wearing was actively discouraged or "not allowed" (at least at some points during the pandemic) in healthcare settings, elderly homes, schools and other settings, even resulting in professionals being laid off and people being denied access (Lundquist, 2020; Orange, 2021; Nordwall and Bolin, 2021; Ågren, 2021; Vogel, 2020; Bjorklund and Ewing, 2020, 2021j). (6)

The Public Health Agency initially stated that the decision on masks should be taken following a risk assessment made locally, and the sources referred to here all illustrate this point. In Nordwall and Bolin, Tegnell points out that the Public Health Agency has not said anything about teachers, schools and face masks and that this should be a local decision[6]. Lundqvist,

[5] https://common-flu.com/2021/12/22/masks-are-not-effective-against-covid-19-sweden/

[6] https://www.svt.se/nyheter/lokalt/halland/halmstad-forbjuder-munskydd-i-skolans-lokaler

Orange and Ågren are similarly examples of local (municipal) decisions. Vogel states "Some doctors who insisted on wearing a mask at work have been reprimanded or even fired." When asked on Twitter about the claim regarding doctors being fired[7], she seems to refer to two paragraphs in the article in which she mentions one person whose contract wasn't renewed. Ewing and Bjorklund have published an excerpt from the email[8], which suggests that her insisting on wearing a facemask was perhaps of secondary importance when the decision not to renew her contract was made. Some parts of the email are also whited out, which raises the question what it is that the reader is not allowed to see. What the authors mean by "people being denied access" is not immediately obvious (access to their workplace or access to masks?), either from the text itself or from the sources.

4.

For example, representatives from the Public Health Agency and Government (including the State Epidemiologist and Prime Minister) stated that the Swedish strategy was not different from the strategy in other countries (Tegnell, 2021; Sennarö and Zachrisson, 2020) yet Sweden was also the only country having the right strategy and "all other countries were wrong" or experimenting (2020a, Majlard, 2020a; Johansson et al., 2021). (9)

The references provided do not support the point the authors are making, i.e. that "Sweden was also the only country having the right strategy and 'all other countries were wrong' or experimenting". Tegnell states: "Sweden's response to COVID-19 has received global attention with both praise and criticism, despite being based on the same basic principles from pandemic plans and having the same objectives and goals as other countries." Sennarö and Zachrisson is an article on Swedish Public Service website svt.se where the Prime Minister at the time, Stefan Löfven, states that the Swedish strategy hasn't failed[9]; 2020a is an article in the Swedish newspaper Dagens Nyheter about i.a. the reopenings in other countries after the lock-down in spring 2020. In the article Tegnell does mention experimenting, but not in the sense the authors want to make it seem (see the discussion of issue no. 37 in the section "Other issues"). Majlard 2020a is an article in the Swedish newspaper Svenska Dagbladet[10] where praise from the WHO for the Swedish strategy is discussed, and Johansson et al.[11], 2021 is a study of the "rally-around-the-flageffect (sic!), a sudden and substantial increase in approval of political leaders in response to dramatic international events." in connection with the Swedish covid-19 crisis, which we fail to see the relevance of in this context.

5.

There were also reports of inequality and social injustice as a consequence of Sweden's response—especially with elderly, people in nursing homes, individuals with a migration background and socio-economically less-advantaged groups (also of younger age) being affected by excess mortality (Khorram-Manesh et al., 2020; Rostila et al., 2021; Strang et al., 2020; Calderón-Larrañaga et al., 2020; Hansson et al., 2020, 2021e). This inequality narrative was openly communicated by officials including the Public Health Agency, claiming that "The corona infection in the nursing homes may have been spread by staff with poor command of

[7] https://twitter.com/kimthecynic/status/1313850103095066625?s=20&t=8OEif3CB-lrKOONWMKl4vA
[8] https://covidfactcheck.se/
[9] https://www.svt.se/nyheter/lofven-svenska-coronastrategin-inte-misslyckad
[10] https://www.svd.se/a/mRGnPq/who-expert-sverige-forebild-i-pandemin
[11] https://www.tandfonline.com/doi/full/10.1080/17457289.2021.1924742

the Swedish language", "we have larger spread because of the larger immigrant population", "only the foreigners get ill", "only people looking like tourists wear face masks in public". (McKee et al., 2020; Hansson et al., 2020; Tegnell, 2020; Capar, 2020; Höglund, 2020). (11)

Firstly, it should be noted that the authors have chosen a secondary source - a short article in Norway Today (Capar, 2020), and the personal blog of a retired journalist (Höglund, 2020) to back up their claims about "foreigners" and "tourists". The quotes "only the foreigners get ill" and "only people looking like tourists wear face masks in public" do not appear in any of the sources. Secondly, the authors' claim that the Swedish strategy is the reason behind "inequality and social injustice", is spurious. It should suffice to quote two reports to show that covid-19 has affected disadvantaged groups worse than more affluent and privileged groups, *irrespective of strategy*. This phenomenon has been noticed in the US, China, Italy, the UK and France, as stated by Giorgi & Boertien[12]: "In general, pre-existing social inequalities in health seem to favor health inequalities in the COVID-19 pandemic as has been shown in China (Chen et al. 2020), Italy (Group and et al 2020), or in Great-Britain (ONS 2020b)." In a report from the Norwegian Public Health Agency[13], the reach the same conclusion: "Hovedbudskap Koronapandemien har i Norge rammet personer født utenfor Norge, heretter kalt utenlandsfødte, hardere enn den øvrige befolkningen […] Enkelte grupper er meget hardt rammet. Dette gjelder særlig personer født i Pakistan, Tyrkia, Irak, Somalia, Afghanistan og Etiopia." [Main message In Norway the Corona pandemic has affected people born outside of Norway, hereinafter called foreign born, harder than the rest of the population […] Some groups have been severely affected. This applies in particular to people born in Pakistan, Turkey, Iraq, Somalia, Afghanistan and Ethiopia.] (I.e. people who are likely to be less privileged that native Norwegians.) Surely the authors must be aware of the fact that "inequality and social injustice" are important factors in more or less all types of public health issues? Cf. also what Alston says below and the discussion of issue 9 in this section.

6.

In addition, the unequal access to healthcare, the consequent poorer outcomes for certain groups, and its' (sic!) *general acceptance by the public seems to support* Social Darwinism philosophy *(Alston, 2020), the so-called "survival of the fittest".* (11)

Firstly, Alston[14] doesn't mention Sweden, so this is the authors' interpretation. Secondly, we wonder if the authors have actually read what Alston says:

> COVID-19 could push more than half a billion additional people into poverty, he warned. The International Labour Organization estimates that the equivalent of almost 200 million full-time jobs will disappear in the coming months, while lost income could total US$3.4 trillion this year.
>
> "This is a crisis that disproportionately affects poor people, who are more likely to have health complications, live in crowded housing, lack the resources to stay at home for long periods, and work low-paid jobs that force them to choose between risking their health or losing their income," Alston

[12] https://genus.springeropen.com/articles/10.1186/s41118-021-00124-8

[13] https://fhi.brage.unit.no/fhi-xmlui/handle/11250/2756769

[14] https://www.ohchr.org/en/press-releases/2020/04/responses-covid-19-are-failing-people-poverty-worldwide-un-human-rights

> said. “In a moral failing of epic proportions, most States are doing all too little to protect those most vulnerable to this pandemic.”
>
> “Governments have shut down entire countries without making even minimal efforts to ensure people can get by,” Alston said. “Many in poverty live day to day, with no savings or surplus food. And of course, homeless people cannot simply stay home.”

It is obvious that Alston is talking about other countries that Sweden, and if anything, the message is more in line with what Anders Tegnell has said about lockdowns in low- and middle-income countries[15].

7.
It has been a largely held belief by the Swedish public and perpetuated by the authorities that if people are not symptomatic, they cannot spread COVID-19 (2021h). (11)

The source 2021h refers to *Novus Rapport: Skyddsåtgärder mot Covid-19 (Novus Report: Safeguards against Covid-19). Sweden*[16], but it doesn't contain any reference to asymptomatic spread and thus does not back up the authors' claim. Furthermore, measures introduced by The Public Health Agency and the government, such as recommendations to avoid crowding in restaurants and shops, distance learning for upper secondary schools and universities, limiting public events to 500 participants (12 March) and later to 50 participants (29 March), recommendations to avoid visits to hospitals and nursing homes (10 March), the latter replaced by a complete ban on 1 April, all served the purpose of reducing/preventing asymptomatic, presymptomatic and paucisymptomatic spread.

8.
Together with the underlying societal framework supporting this acceptance of “it's only the foreigners” may have led to an increase in nationalism (and even xenophobia?), and maybe contribute to “Welfare chauvinism”, the antipathy against the benefits of the welfare system being shared with immigrants and their descendants—as described in a Danish study on the role in the pandemic in the Nordic Welfare states (Larsen and Schaeffer, 2021). (11)

This is pure speculation. Furthermore, the Danish study[17] referred to here is not a study on “the role in the pandemic in the Nordic Welfare states” (whatever that means), but a study on the attitudes of Danish people regarding “healthcare chauvinism against recent immigrants and Muslim minorities during the peak of the COVID-19 pandemic of spring 2020”, i.e. the study doesn't say *anything* about these attitudes in Sweden or any other Nordic country apart from Denmark. Sweden is mentioned *twice* in the entire study: “Denmark is traditionally seen as an example of what Esping-Andersen (1990) termed the social-democratic (i.e. Nordic) welfare regime. Of course, no two countries are the same and so grouping Norway, Sweden, Finland, and Denmark together is inevitably a simplification.” and “It is thus important to note that these names are not untypical among the populations of Denmark's neighbouring countries (i.e. Norway, Sweden, and Germany) and can well be regarded as typical Nordic names.” As far as the political opinion in Sweden is concerned, support for nationalist parties like the Sweden Democrats (SD), if anything, decreased

[15] E.g. https://www.youtube.com/watch?v=x8J9CvgB1AE
[16] https://novus.se/wp-content/uploads/2021/09/novusskyddmotspridningavcovid.pdf
[17] https://www.tandfonline.com/doi/full/10.1080/1369183X.2020.1860742?scroll=top&needAccess=true

somewhat during the pandemic, so in that regard there is no evidence to suggest the authors are correct.

9.

In November 2020, the Organisation for Economic Cooperation and Development's (OECD) and the European Union ranked Sweden lowest among 35 European countries considering multiple COVID-19 management metrics including lowering the spread of infection, reducing people's mobility, and discharging ICU patients (Bjorklund, 2020, 2020k). The OECD states that part of the society is undervalued and under-resourced, referring to the situation in elderly care (2021c). (11)

While the criticism regarding the situation in elderly care can hardly be disputed, something which was also highlighted by the Swedish "Corona Commission", the claim "ranked Sweden lowest among 35 European countries considering multiple COVID-19 management metrics *including* lowering the spread of infection, reducing people's mobility, and discharging ICU patients" (our italics) is not correct, as there are no other categories where Sweden ranks last. It should further be noted that this report from the OECD[18] also confirms what we said above about "covid-19 has affected disadvantaged groups worse than more affluent and privileged groups, *irrespective of strategy"* (see issue no. 5). On page 59-60 in the report it is stated: "COVID-19 has disproportionately hit the poor, those living in deprived areas and ethnic minorities... Emerging evidence clearly shows that COVID-19 has exacerbated existing social health inequalities", based on evidence from England, France, Spain and Norway, as well as Sweden.

10.

The Swedish reputation internationally may have been harmed long-term as a result of its non-conforming actions. Its relationship with neighbouring Nordic countries were put under pressure (Martikainen and Sakki, 2021; Johnson, 2021). (12)

This is pure speculation again. Sweden's standing in Anholt-Ipsos Nation Brands Index[19] doesn't seem to have been affected by the pandemic or the Swedish strategy. As regards the relationship with the other Nordic countries, it seems the authors have misconstrued Martikainen and Sakki[20], which in fact is a study of how national stereotypes were used in Finnish media to portray the Swedish strategy and doesn't say anything about the relationship between Finland and Sweden:

> We examine how press reporting about the development of COVID-19 in Sweden is cast as a matter of nationalism and national stereotyping in the Finnish press. The data consist of 183 images with accompanying headlines and captions published in two Finnish national newspapers between January 1 and August 31, 2020. We found three multimodal rhetorical strategies of stereotyping: moralizing, demonizing, and nationalizing. These strategies construct discourses of arrogant, immoral, and dangerous Swedes sourcing from national stereotypes. The study contributes to current knowledge about the work on national stereotypes by illustrating how they are used in media discourse to achieve

[18] https://www.oecd-ilibrary.org/docserver/82129230-en.pdf?expires=1662591696&id=id&accname=guest&checksum=7CA90DC3958D34B0FB6F7C0731E19BB2

[19] https://si.se/app/uploads/2021/10/final-omvarldens-bild-av-sverige-2021.pdf

[20] https://journals.sagepub.com/doi/full/10.1177/17504813211002039

certain rhetorical ends, such as to persuade, mitigate, or justify intergroup relations. Furthermore, the study offers insight into the multimodal constructions and functions of stereotypes.

Johnson, 2021[21] is a short article at reuters.com, which reports on the findings of a survey of the view among the public in the other Nordic countries carried out during November and December 2020, which also points out: "The pandemic, however, was not the only reason for a less rosy view of Sweden among its neighbours. A surge in shootings and bombings in recent years, mainly related to gangs in Sweden's cities, has also left a mark, with crime, immigration and a more polarized society also cited." Whether there will be any long-term harm to "[t]he Swedish reputation internationally" remains to be seen and the authors' claim seems unfounded and premature.

11.

The Public Health Agency has approximately 600 employees, yet it seems they lack satisfying competence in social and behavioural sciences including psychology and sociology. (Sörbring, 2021) (supplement, 21)

The source is an article[22] in the Swedish tabloid Expressen ranking the academic merits of the critics of the Swedish strategy and the only thing that comes even remotely close to supporting the above claim is the quote "Folkhälsomyndigheten borde tvärtom inspireras av mångsidigheten i en sådan konstellation och själva ha mer kompetens inom samhällsvetenskaperna för att bättre få uppfattningar om hur vetenskap och samhälle interagerar med varandra." [The Public Health Agency should instead let itself be inspired by the diversity in such a constellation [Vetenskapsforum Covid-19] and themselves acquire more competence in the social sciences to better understand how science and society interact.] by Ulf Sandström, a statistics researcher at Örebro University. The authors have simply embellished this quote.

12.

This practice of restricting access to potentially live (sic!) *saving treatment in elderly individuals implies that the lives of several could have been saved or prolonged if they would have received oxygen treatment (not made available in many elderly homes) instead of morphine. (Habib, 2020, Sörensen, 2020, Vogel, 2020, Bjorklund and Ewing, 2020) This practice was reported in at least 6 of the 21 Swedish regions as shown by an independent investigation (see below), (Bjorklund, 2020b, 2020r, 2020o) and seemed to have attracted more international than national attention in the media. (Savage, 2020, Vogel, 2020, Bjorklund and Ewing, 2020)* (supplement, 35)

Firstly, the reference to "(see below)" seems to be missing. Secondly, while it is certainly true that the Health and Social Care Inspectorate (IVO) have found several deficiencies (most of them well-known and flagged in consecutive reports by the Board of Health and Welfare) in the care of the elderly during the pandemic, and there probably were some cases where elderly persons should have been given oxygen treatment instead of morphine, there is nothing in the sources to back up the claim that restricting life-saving treatment was put into practice during the pandemic and the authors hide behind vague language such as "lives of

[21] https://www.reuters.com/article/sweden-nordic-survey-idUSL8N2LL1QY

[22] https://www.expressen.se/nyheter/unika-listan-sa-rankas-svenska-coronaexperter/

several" and "in many elderly homes", and don't present any data to back up their claim. In fact, careful analysis of the medical journals in Östergötland county suggests that this would not have been useful in most cases, as stated by the Swedish "Corona Commission"[23]: "Morfinpreparat var vanligen basen i den palliativa behandlingen och i enstaka fall gavs syrgas. Det var sällan symtom från luftvägarna som dominerade den sista tiden innan dödsfallet inträffade. I stället var försämrat allmäntillstånd vanligare." (229) [Morphine preparations were usually the base in the palliative care and in a few cases, oxygen was administered. It was rare that symptoms from the airways dominated during the time before death occurred. Instead deteriorating general health was more common]. A similar investigation in Stockholm confirms this picture[24] and another report studying nursing homes and covid-19 in Stockholm[25] reaches the same conclusion. Plainly speaking, most of the elderly were in such bad general health that they died *before* the onset of severe lung infection with respiratory distress, i.e. *before* the stage where oxygen treatment would have made a difference. As the Corona Commission states: The median age of those who died in the Östergötland study was 88.

Misrepresentation of what people have said or done, with resulting potential reputational harm

1.

One of the officials of the Swedish Civil Contingencies Agency (Mikael Tofvesson, Head of the Information Protection Unit, Swedish Civil Contingencies Agency) even said that truth can be disinformation if it affects public trust in the authorities (Lundgren and Tofvesson, 2021). (7)

Firstly, it should be noted that this video[26] is a general discussion about external threats and disinformation and is part of the programme curated by the Swedish parliament to celebrate 100 years of universal suffrage in Sweden and has nothing to do with the pandemic. Secondly, what Tofvesson actually says (at 1:53-2:13) is "Vi på MSB använder hellre informationspåverkan, och det är när du använder information, även korrekt information, i ett vilseledande syfte så att det skulle kunna hota liv och hälsa, och samhällets funktionalitet, våra grundläggande värden eller vår suveränitet." [At the Agency we rather talk about influence operations and that is when you use information, including correct information, in order to mislead, in a way which could threaten life and health, the functioning of society, our basic values or our sovereignty.] This is the Agency's general definition of influence operations, not specifically regarding the pandemic, and Tofvesson does not mention the public's trust in the authorities. The authors have simply misrepresented what Tofvesson said.

2.

On March 3, 2020, Fredrik Elgh, an internationally esteemed Professor in clinical virology, and former superior of Anders Tegnell (during 2000–2002 at the Institute for Infection Control),

[23] https://coronakommissionen.com/wp-content/uploads/2020/12/sou_2020_80_aldreomsorgen-under-pandemin_webb.pdf

[24] https://www.regionstockholm.se/globalassets/1.-halsa-och-vard/bilagor---nyhet/2021/rapport-covid-19-som-dodsorsak-sarskilda-boenden.pdf

[25] https://www.regionstockholm.se/globalassets/1.-halsa-och-vard/bilagor---nyhet/2021/210114--rapport-sabo-och-covid-19.pdf

[26] https://www.youtube.com/watch?v=g3aEwFQX6X8&t=18s

wrote about his past experience with pandemics and urged Sweden to prepare (Elgh, 2020; Majlard, 2020b). Fredrik Elgh was heckled and compared to a Sami (indigenous Swede) "who tracks the future in fish stomachs" by Johan Carlson, Director General of the Public Health Agency, and scorned by others (Majlard, 2020b). (8)

The claim that Elgh was "heckled and compared to a Sami (indigenous Swede) 'who tracks the future in fish stomachs'" by Johan Carlson is not true. The exact quote from Majlard[27] is: "Det är inte svårt att sitta i en tv-soffa och säga att det blir en pandemi om nio månader. Där är ungefär som när Enok Sarri tittade i fiskmagar och spådde sommarvädret. Men jag vill inte 'killgissa', sa Johan Carlson och tillade att det är slumpen som avgör ett virusutbrott." [It's not difficult to sit in a TV studio and state that there will be a pandemic in nine months. That's like when Enok Sarri looked in the stomachs of fish and predicted the summer weather. But I don't want to "killgissa"[28], Johan Carlson said and added that virus outbreaks are governed by chance". It should be noted that this statement by Johan Carlson is neither a reference to the letter to the editor Elgh wrote, nor to the interview in Svenska Dagbladet (Majlard, 2020b). To construe this as being heckled seems quite thin-skinned. Furthermore, as can be seen from the actual quote, Carlson's statement is *not* a reference to the Sami people in general, as the authors' incorrect quote suggests, but to *one* Sami (Enok Sarri) who became famous for predicting the summer weather on TV in the 1960s and 1970s. To a reader who doesn't know this, i.e. almost every international reader and most Swedes under the age of 40, the wording "compared to a Sami (indigenous Swede) 'who tracks the future in fish stomachs'" could be construed as racist, which Carlson's statement most definitely is not.

3.

The precautionary principle followed by most countries, was not followed, since officials even said symptomatic individuals could go to work and pick up their children at school. (9)

This is a clear misrepresentation of what the infectious disease physician of Stockholm, Per Follin, (i.e. one official) said in an interview in July 2020[29]: "Om man har varit sjuk mer än sju dagar, är feberfri sedan två och mår betydligt bättre är risken att smitta andra mycket liten" [If you've been ill for more than seven days, haven't had a fever for two days and feel much better, the risk of infecting others is very low.] Tellingly the authors provide no source for their claim.

4.

Despite initiatives to enhance Nordic collaborations and to prepare together for future pandemics (Nordic Council 2019, Nordic Cooperation 2020), there seemed to have been little collaboration and communication considering the strategy for COVID-19 in the Nordic countries, with Sweden taking a clearly different path (Vilhelmsson and Mulinari, 2020). The same occurred in 2009, with the swine flu (H1N1), when Sweden opted for mass-vaccination, and Denmark for vaccinating risk groups (Vilhelmsson and Mulinari, 2020). At that time, Anders Tegnell was working at the National Board of Health and Welfare and one of the main drivers/decision-makers behind the mass-vaccination (together with Johan Giesecke) and was

[27] https://www.svd.se/a/Vb3xxW/virolog-resenarer-fran-italien-borde-stanna-hemma

[28] Swedish colloquialism, difficult to translate, but the meaning is "as a man, to say something with conviction even though it's only a guess"

[29] https://www.expressen.se/nyheter/stockholmare-kan-ga-till-jobbet-med-symptom-1/

consequently criticised because of the significant number of narcolepsy cases occurring post-vaccination (TT, 2020b) (12)

This is not true, and the authors have to be aware of this. What the authors fail to mention is that it was Denmark that took "a clearly different path" during the 2009 A(H1N1) pandemic. All the other Nordic countries opted for mass-vaccination[30] (including Iceland) and issues with narcolepsy were reported in Norway[31] and Finland[32]. That only Sweden and Denmark are mentioned indicates that the authors want to show Tegnell and Giesecke, as responsible for the Swedish vaccination strategy, in a bad light.

5.
A field hospital was erected in Stockholm (Älvsjö Fältsjukhus) by a company (with Johan Giesecke's wife among the stakeholders) yet it was not used. (Putilov, 2020) (supplement, 35).

This is not true. The field hospital was built by Locum, the property management/ construction company of Region Stockholm with the assistance of the armed forces[33]. Furthermore, the use of Samhällsnytt (a right wing "alternative" media) as a source in an academic paper is highly questionable and the journalist, Egor Putilov, likewise has a very questionable reputation[34,35]. It should be noted that a similar hospital was opened in Gothenburg, also erected with the help of the armed forces, also criticised and closed without being put to much use[36,37].

Cherry picking from sources

1.
When the COVID-19 pandemic hit Europe, this sparsely populated Nordic country stood out from the beginning (Murray, 2020; Orlowski and Goldsmith, 2020; Habib, 2020; Esaiasson et al., 2021; Lindström, 2020b), with an apparent unhurried and less restrictive strategy compared to the rest of the continent (Hale et al., 2021). (2)

Firstly, it should be pointed out that while the north of Sweden certainly is sparsely populated, the weighted population density of Sweden is quite high, with 90% of the population living either in the Stockholm region or south of it, as can be clearly seen on population density maps[38], but the main issue here is that the authors use Murray as a source, although he clearly states that Sweden does *not* stand out: "For example, the trend in all-cause mortality in

[30] https://www.eurosurveillance.org/content/10.2807/ese.17.04.20064-en, see table 4
[31] https://www.fhi.no/nyheter/2017/pandemi/
[32] https://stm.fi/sv/sammanstallning-over-atgarder
[33] https://www.fhs.se/download/18.26b94392178c5589c963d/1618229677359/FHS%20rapport%20A%CC%88lvsjo%CC%88%20sjukhus.pdf
[34] https://www.journalisten.se/nyheter/samnytt-klandras-grovt-av-men
[35] https://www.expressen.se/nyheter/egor-putilov-har-skaffat-ny-identitet/
[36] https://www.forsvarsmakten.se/sv/aktuellt/2020/03/faltsjukhus-iva-kronan-overlamnat-i-goteborg/
[37] https://lakartidningen.se/aktuellt/nyheter/2020/08/faltsjukhuset-i-goteborg-stangs/
[38] E.g. https://ec.europa.eu/eurostat/statistics-explained/images/4/4c/Population_density_based_on_the_Geostat_population_grid%2C_2011_%28number_of_inhabitants_per_km%C2%B2%29_RYB20.jpg

Sweden suggests *similarities to other countries in the Schengen area that had large outbreaks and entered lockdown*: all-cause mortality continued an upward trend for three weeks and then fell as the response started to take effect. This lagging trend corresponds with the espoused intention of the strategy and seems similar to countries that entered lockdown early, yet it is consistently painted as a failure" (our italics).

2.

Testing has also been restricted and often impossible for children especially if asymptomatic, so no reliable numbers are available (Vogel, 2020). Nevertheless, many children are still suffering from serious long-COVID, more have lost one or two parents, and several children died—as also noted in the investigation report of the children's ombudsman (Barnombudsman) (2021b, Törnwall, 2020, Bjurwald, 2021). (6)

Some of the conclusions reached by the children's ombudsman[39] ("Short conclusions", p.4-5) contradict the arguments put forward here, and these are not discussed by the authors:

> Många barn i Sverige har påverkats negativt av covid-19 och den nedstängning av samhället som skett – med olika begränsningar i socialt umgänge, undervisning på distans för många elever och då både kommunala verksamheter och civila organisationer tvingats stänga ner viktiga anläggningar, aktiviteter och funktioner. [Many children in Sweden have been affected negatively by covid-19 and the closures of society which have taken place – with different restrictions to social intercourse, distance learning for many students and both municipal activities and civil organisations being forced to close important establishments, activities and functions.]
>
> Inför flera nationella beslut under pandemin har det funnits en medvetenhet om behovet av att väga in konsekvenser för barn och barnets bästa, till exempel genom att hålla skolor öppna i stor utsträckning. Samtidigt har pandemin i sig och de beslut som fattats haft stor påverkan på barn och särskilt på barn som redan tidigare var i utsatta situationer. [When making a number of national decisions during the pandemic there has been an awareness of the need to take into account the consequences for children and their best interests, e.g. by keeping schools open to a large extent. At the same time the pandemic itself and the decisions made have had a big impact on children, and in particular on already vulnerable children.]
>
> Konsekvenserna av att tillgången till skyddsfaktorer som skola, sociala sammanhang och trygga vuxna har minskat under pandemin behöver följas upp särskilt och barns rättigheter säkerställas. [The consequences of reduced access to safety factors like school, social context and safe adults during the pandemic need to be followed up specifically and children's rights need to be ascertained.]
>
> Det är centralt att kommuner och andra ansvariga följer vilka barn som kommer tillbaka till aktiviteter och fritidsverksamheter och vilka barn som inte gör det, för att snabbt kunna fånga upp de barn som inte återvänder och ta fram insatser för att få dem tillbaka. [It is essential that local councils and others who are responsible keep track of which children come back to general activities and recreational activities and which children don't, in order to be observant of those children who do not return and prepare measures to make them come back.]
>
> En följd av restriktioner för att minska smittspridningen i samhället är att det inte har funnits vuxna i närheten som kan identifiera och säkerställa att barn får den hjälp och det stöd de behöver. Det är viktigt att varje barn som mår dåligt upptäcks, till exempel genom systematiska kartläggningar i skolan. [One of the consequences of the restrictions to reduce the spread of contagion in society is that there haven't been adults at hand who are able to identify and ensure that children receive the help and

[39] https://www.barnombudsmannen.se/globalassets/dokument/publikationer/barnombudsmannens-rapport---covid-19-pandemins-konsekvenser-for-barn-slutredovisning-av-regeringsuppdrag_.pdf

> support they need. It is important that every child who is not doing well is discovered, e.g. by systematic checks in school.]

There are a few other questions which must be asked as well: What do the authors mean by "reliable numbers"? Why should asymptomatic children be tested? The language used is also problematic: "many children", "more", "several". None of the sources contain any data on this. Regarding the actual verified data regarding children, see the discussion of issue no. 11 in the section "Other issues".

We also note that there are a few instances where the authors have used sources without mentioning that these sources reach a completely different conclusion than the authors, just like with Murray (see above). Kavaliunas et al.[40] is quoted on page 4 in the context "'Lockdowns', strict 'stay at home' orders (or even advice) were never implemented (Mens et al., 2021; Kavaliunas et al., 2020; Nilson, 2021).", but the authors never mention that the conclusions of that paper is "Many countries have both marvelled and criticized the Swedish strategy that is formed in a close partnership between the government and the society based on a mutual trust giving the responsibility to individuals. It already highlights how much can be achieved with voluntary measures (recommendations) - something that was noticed and proposed as a future model by the World Health Organization". Lindblad et al. are quoted on pages 6 och 7 (see also the discussion of issue no. 7 in the section "Other issues" below), but their evaluation of the efforts to keep schools open are mostly favourable, something which the authors fail to mention. Hiselius & Arnfalk (which is used incorrectly in the paper, see issue 1 in the section "Incorrect references" above) is a positive evaluation of the efforts made to enable working from home:

> The results indicate that the public authorities surveyed were well prepared and had a 'backup collaboration solution', at least technically, to make a rapid behavioural shift when travel was not an option. Though the Swedish government's and Public Health Authority's strong recommendations have led to the most dramatic reductions in work-related travel in modern times, the operations in Swedish agencies continue to function, along with the employees' communications and collaborations. These results indicate that there is great potential for digital tools to influence if and how we commute and make business trips. The COVID-19 pandemic has shown that such tools can make the impossible possible.

Other issues

1.
Notably, the Minister of Health and Social Affairs later stated during a parliamentary enquiry that Sweden did in fact have no strategy. (2)

This is not quite true. What the minister said was that there was no "*formally decided* strategy to handle the pandemic" (our italics). The strategy can be found here: https://www.regeringen.se/regeringens-politik/regeringens-arbete-med-coronapandemin and the authors refer to it on page 4 (but they call it "policy and decisions"), so this seems more like a discussion of semantics than anything else. Interestingly, the authors mention "The Swedish strategy" in the very next sentence ("The Swedish Strategy was also influential abroad, and became an argument in other countries including, among others, the United

[40] https://www.sciencedirect.com/science/article/pii/S2211883720300812

States (US), United Kingdom (UK) and Australia, to loosen restrictions (Orlowski and Goldsmith, 2020; Jung et al., 2020") and they also say "The *strategy* communicated to the public included some talking points, but these were not sufficiently linked to concrete actions" (9, our italics) (this statement is further discussed in issue 18 below).

2.

Sweden has a well-documented track record of prior epidemics, and corresponding mortality data from mid-eighteenth century and onwards is well-documented by Statistics Sweden (SCB) (Ledberg, 2021, 2020m), with four WHO-declared pandemics affecting Sweden since 1900—all with influenza viruses (1918-19 H1N1 "Spanish"; 1957 H2N2 "Asian"; 1969 H3N2 "Hong Kong"; and the 2009 H1N1 so-called "swine flu" influenza) (2019). (3)

The problem here is that the WHO was founded in 1948 and there was no system to officially promulgate phases of a pandemic before the 2000s. Although this doesn't affect the arguments made in the paper, it does call into question the knowledge of the authors, the attention to detail, and the quality of the review process.

3.

Yet, during the pandemic, the crisis management function in the Ministries (and Prime Minister's Office) again did not work (see Supplement 3, previous disasters). A large part of the responsibility was delegated to one agency (the Public Health Agency), and the government failed to seek information themselves (2021f, Jerneck, 2021; Nordberg and Mattsson, 2020; Kleja, 2020). (4)

From where is the government supposed to seek information if not from the Public Health Agency? See also the discussion of issue 24 below.

4.

During 2020, the Swedish Government, the Prime Minister and Minister of Health and Social Affairs, mainly referred to the authority of the Public Health Agency and the regions/ municipalities. The Prime Minster rarely gave interviews and only few pre-recorded messages—and no crisis group was formed in the Parliament (Sörensen, 2020). Both the Prime Minister and Minister of Health and Social Affairs publicly declared they had no competence considering pandemics or medical issues. In effect the democratic institutions ceased to function (Sörensen, 2020). (4)

"In effect the democratic institutions ceased to function" is a far-reaching claim and it is not immediately clear what the authors mean. A quick search also shows that during March 2020 alone the Prime Minister, in addition to his speech to the nation on 22 March and the Prime Minister's Questions in Parliament on 19 March, held press conferences on 4, 11, 13, 15, 17, 23, 27 and 31 March (possibly not an exhaustive list). Furthermore, what is the connection between the Prime Minister and the Minster of Health and Social Affairs admitting that "they had no competence considering pandemics or medical issues" and the democratic institutions ceasing to function? The source (Sörensen, 2020, p. 966[41]) doesn't provide any elucidation as it contains more or less the same wording and no further sources. If anything, it could be

[41] https://www.researchgate.net/publication/345820371_Terror_in_Utopia_-_Sorensen_-_SP_-_okt-20

argued that the restrictions on the freedom of assembly, an NPI which the authors presumably approve of, caused a bigger threat to the democratic institutions than the above-mentioned reasons, cf. also the discussions of issues no. 22 and 25 below.

5.

Most other parties did not oppose or question the strategy, although there was some questioning around May 2020 when the deaths were accumulating, and Sweden was among the worst in Europe considering the daily mortality rate/million (in the global top 10 by April 30, 2020)—while the Swedish economy was also heavily impacted.(Sörensen, 2020; Johansson et al., 2021) This may have helped to finally implement increased testing in Sweden in June 2020 (Supplement 5). (5-6).

This is factually incorrect. Although there were issues with large-scale testing and discussions regarding the benefits of this, it should be noted that testing increased every week from week 8 2020 (17-23 Feb) (29 tests) to week 22 (25-31 May) (36,466 tests)[42]. The Government also ordered the Public Health Agency to develop a strategy for increased testing at the end of March[43].

6.

The decision to provide end-of-life care to many older adults is highly questionable; very few elderly have been hospitalised for COVID-19. Appropriate (potentially life-saving) treatment was withheld without medical examination, and without informing the patient or his/her family or asking permission (Supplement 6) (Habib, 2020; Sörensen, 2020; Ohlin, 2020; Möller Berg, 2020). Many officials kept denying any responsibility (Falck, 2021; Möller Berg, 2020; Sennarö and Zachrisson, 2020), and there was only limited public outcry in Sweden when this came out, the common narrative being that those in care homes are expected to die soon anyway (see part on ageism in Swedish society, Supplement 1). (6)

The language used here is problematic, especially in a supposedly scientific article. The authors write “many older adults”, “very few elderly”, “many officials”, “the common narrative”, but there is no data to quantify any of these claims. Regarding the claim about “end-of-life care”, we discuss this in further detail in issue no. 12 in the section “Incorrect references” above.

7.

Children were also majorly affected by this pandemic, since the Swedish strategy was strongly against any school closures or measures to protect children, as clearly communicated by the Public Health Agency, the Minister of Education and others (Supplement 7) (Höög and Adman, 2020; Nilsson, 2020; Delin and Mahmoud, 2020). (6)

In light of the alarming reports from Unicef regarding the worldwide educational crisis and reports from i.a. Switzerland and Norway, which concluded that school closures were a mistake, this statement is quite spectacular. Saying that the “Swedish strategy was strongly

[42] https://www.folkhalsomyndigheten.se/smittskydd-beredskap/utbrott/aktuella-utbrott/covid-19/statistik-och-analyser/antalet-testade-for-covid-19/tidigare-data-8-26-2020/

[43] https://www.regeringen.se/pressmeddelanden/2020/03/utokad-nationell-testning-av-covid-19/

against any…measures to protect children" is also not true. This is what Lindblad et al.[44] (a source which the authors also use) says:

> The schools were expected to follow the directives of the Public Health Agency, which demanded handwashing with soap and water, added posters on walls with instructions on how to handwash, and ensured that there is access to disinfectants when water for handwashing was unavailable. In all activities, distances between teachers and pupils had to be maintained in classrooms, dining halls, and other spaces; gatherings should be avoided, and recreation and teaching activities should take place outside, if possible. Finally, handles, surfaces, screens of laptops, and iPads should be cleaned at least once a day.[8]

The reference (8) is to a link to the Public Health Agency's website[45] which contains a number of guidelines and measures to reduce the risk of spread.

8.

The Public Health Agency denied or downgraded the fact that children could be infectious, develop severe disease, or drive the spread of the infection in the population; while their internal emails indicate their aim to use children to spread the infection in society (Lindblad et al., 2021, 2020–2021b; Höög and Adman, 2020; Vogel, 2021; Ludvigsson, 2020). (7)

This sentence contains several spurious claims. During the first wave in 2020 it was clear from early Chinese and Italian data that the risk was age-specific and the risk for children was the lowest. On 1 March, the Public Health Agency published a text[46] stating that it is unlikely that school closures are an effective measure to alleviate the risk of transmission of the virus, based on a report from the WHO[47]. In the influential report from Imperial College[48] (#9) published on 16 March, the assumptions regarding the need for hospitalisations and the IFR for *symptomatic* children aged 0-9 was put at 0.1% and 0.002%, respectively. For children aged 10-19 the figures were put at 0.3% and 0.006%. Contrast this with the figures for adults aged 80+: risk of hospitalisation 27.3%, IFR 9.3%. Furthermore, On 7 August 2020 the ECDC published the first version of their report "COVID-19 in children and the role of school settings in COVID-19 transmission"[49] in which some of the key messages are: "A small proportion (<5%) of overall COVID-19 cases reported in the EU/EEA and the UK are among children (those aged 18 years and under). When diagnosed with COVID-19, children are much less likely to be hospitalised or have fatal outcomes than adults", "Investigations of cases identified in school settings suggest that child to child transmission in schools is uncommon and not the primary cause of SARS-CoV-2 infection in children whose onset of infection coincides with the period during which they are attending school, particularly in preschools and primary

[44] https://link.springer.com/content/pdf/10.1007/s11618-021-01001-y.pdf

[45] https://web.archive.org/web/20200429143515/https://www.folkhalsomyndigheten.se/smittskydd-beredskap/utbrott/aktuella-utbrott/covid-19/verksamheter/information-till-skola-och-forskola-om-den-nya-sjukdomen-covid-19/ - this version of the particular webpage was updated on 26 March 2020.

[46] https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/mars/avstangning-av-friska-skolbarn-ingen-effektiv-atgard/

[47] https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf

[48] https://www.imperial.ac.uk/media/imperial-college/medicine/mrc-gida/2020-03-16-COVID19-Report-9.pdf, page 5

[49] https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-schools-transmission-August%202020.pdf

schools." and "Available evidence also indicates that closures of childcare and educational institutions are unlikely to be an effective single control measure for community transmission of COVID-19 and such closures would be unlikely to provide significant additional protection of children's health, since most develop a very mild form of COVID-19, if any". In light of this it is difficult to understand what the authors mean by "denied or downgraded the fact that children could be infectious, develop severe disease, or drive the spread of the infection in the population". The claim "their internal emails indicate their aim to use children to spread the infection in society" is bordering on conspiracy theories. A more reasonable interpretation would be that the Public Health Agency realised that the benefit of keeping schools open far outweighed the risks, and in retrospect it must be said they have been proven right. Lindblad et al[50]. provide a useful quote: "In conclusion, we note that education is vital in the overarching strategy to deal with the pandemic in Sweden in terms of trust in people and governmentality." (503).

9.

Many schools did not inform parents or even teachers about confirmed COVID-19 transmission on the premises, nor reported it to official agencies, and urged parents not to tell if their children were infected—since this would "spread fear" (Hedman, 2021; Besançon et al., 2021; Höög and Adman, 2020, 2021b). Some municipalities refused to declare the number of deaths in the care homes and there was an attempt to keep the death rates "covered up" at a regional level (Sörensen, 2020). Even an outbreak of COVID-19 on a maternity ward in the Uppsala University hospital was initially kept secret (Sörensen, 2020). (7)

This paragraph contains vague and unscientific language. The authors claim that "many schools did not inform parents or even teachers about confirmed COVID-19 transmission on the premises", but the sources contain no data. Hedman, 2021 is an article in a magazine for teachers regarding the alleged number of infected teachers, Besançon et al., 2021 is a short letter to the editor of NEJM questioning the findings of Ludvigsson regarding child and teacher morbidity in Sweden, Höög and Adman, 2020 is a letter to the editor of Expressen, questioning the scientific validity of a report by the Public Health Agency regarding Covid-19 and children and young adults. Judging by Sörensen, 2020[51], "Some municipalities" seems to refer to only one municipality, Eskilstuna, and the claims regarding the maternity ward turn out to be not entirely true either: Staff had written a letter to management, expressing their worry about the situation and in the reply management added the below[52] as a post scriptum (something which definitely could be (and was) criticised): "En del information om smittad personal på förlossningen har spridit sig och det kommer att orsaka oro hos tredje part, nämligen våra patienter som är hemma och är oroliga för sin egen och sitt kommande barns hälsa. Det är viktigt att vi alla tillsammans skapar trygghet och tillit till vården för våra patienter." [Some information regarding infected staff has spread and it will cause concern among third parties, i.e. our patients who are at home and worry about their own and their unborn babies' health. It is important that we all together create safety and trust in the care of our patients.]

[50] See footnote 41

[51] See footnote 41

[52] https://www.svt.se/nyheter/lokalt/uppsala/forlossningen-vid-akademiska-sjukhuset-drabbades-av-smittspridning-ledningen-la-locket-pa

10.
For example, the underlying models for decision-making from the Public Health Agency and their assumptions were not made public—particularly not during the first months of the pandemic (they finally published some of the coding on April 24, 2020) (Sörensen, 2020) (7).

This is factually incorrect. Analyses regarding health care loads were published on a regular basis, from 20 March onwards[53]. It is also unclear what the authors mean by "during the first months of the pandemic", considering the fact that the pandemic was promulgated by the WHO on 11 March.

11.
There are also concerns about data-manipulations, in particular of COVID cases and child deaths (Vogel, 2021; Bjorklund and Ewing, 2020). (7)

This is a serious claim, which, as far as we are able to tell, is completely unfounded. Vogel[54] discusses concerns regarding the number of children who died during spring 2020, as stated in Jonas Ludvigsson's research. Vogel writes:

> The rise in mortality is unlikely to be due solely to COVID-19, Björk [Jonas, epidemiologist at Lund University] notes. Although Sweden tested very few children in the early months of the pandemic, fatal cases of COVID-19 would have likely shown up somewhere in the health care system. 'This of course must be ruled out by looking at causes of death and medical records in more detail,' he says. And Björk agrees that the increase could be due to chance.

Statistics from the Board of Health and Welfare show that a total of 7 children in the ages 0-19 died of covid-19 in 2020, 4 of whom were below school-age (0-4)[55], so what these concerns about child deaths or indeed any data manipulations are remains unknown. Any manipulation of this data would have to involve either doctors knowingly or inadvertently omitting covid-19 from the death certificates, or the Board of Health and Welfare failing to code covid-19 in cases when this is mentioned on the death certificates. The authors do not present any evidence to this effect. What makes matters worse is the fact that by the time the authors submitted their paper in September 2021, the statistics from the National Board of Health and Welfare for 2020 would have been available for several months, raising the question why they didn't bother fact-checking this claim.

12.
The National Board of Health and Welfare and Statistics Sweden have released occasional press-releases and data on, e.g., excess mortality, yet to our knowledge, did not play an official scientific advisory role directed towards the Public Health Agency or Government (7).

It is not included in the 185 government Appropriation Directions to the National Board of Health and Welfare to act as a scientific advisory body to the Public Health Agency[56]. This

[53] https://www.folkhalsomyndigheten.se/smittskydd-beredskap/utbrott/aktuella-utbrott/covid-19/statistik-och-analyser/analys-och-prognoser/
[54] https://www.science.org/doi/10.1126/science.371.6533.973
[55] https://sdb.socialstyrelsen.se/if_dor/resultat.aspx
[56] https://www.socialstyrelsen.se/globalassets/sharepoint-dokument/dokument-webb/ovrigt/socialstyrelsens-regeringsuppdrag-2022.xlsx - this link is to the directions for 2022, but it has never been the task of the

criticism from the authors suggest a lack knowledge of the governmental agencies involved and their actual functions.

13.
Yet, from early on, the Swedish strategy seemed to have a general (sic!) *and widespread support at all levels of the population. The Public Health Agency and supporters of the Swedish strategy also actively discredited any critique and national/international scientific evidence, cherry picking papers or parts of papers disregarding the larger amount of evidence suggesting the opposite (Sörensen, 2020; Brusselaers et al., 2020).*

There is nothing in either of the sources that explains what the authors mean by "cherry picking papers or parts of papers". Brusselaers et al[57]. also base many of their arguments on the modelling made by Imperial College, which turned out to overestimate the number of deaths and ICU admissions many times over.

14.
Many have been reprimanded by their superiors, e.g., that they were supposedly not allowed to use their university affiliation, or that they were criticised for undermining the authorities—clearly breaching the right of (Academic) Freedom of Speech (1948, Vrielink et al., 2010; Vogel, 2020). (8)

The authors claim that "many have been reprimanded by their superiors", but their source (Vogel) only contains one (unverified) claim, from Brusselaers herself: "Brusselaers says she also faced backlash from colleagues and was publicly reprimanded by her department chair for being a 'troublemaker' and 'a danger to society.'"

15.
Prior to 2020, there were only pandemic planning documents for Influenza pandemics, and these were insufficiently adapted to this type of virus (Corona). The mindset that influenza cannot be eradicated and stopped completely appears to be a key element of the Swedish strategy. Testing-and-tracing was never fully implemented (Supplement 5), neither was quarantine/isolation or school closures for younger children, all mentioned in the pandemic plan. (9)

There are two issues here: Firstly, the statement "these were insufficiently adapted to this type of virus (Corona)" is a subjective claim and the authors provide no source to back it up. Secondly, "The mindset that influenza cannot be eradicated and stopped completely appears to be a key element of the Swedish strategy" is a correct statement, but considering the fact that all countries except China have abandoned their Zero Covid "experiments", it could be argued that this assumption was correct. As for school closures, as we've already stated, the Public Health Agency reached the conclusion that this was not an efficient measure, *based i.a. on a report by the WHO*, see further the discussion of issue 8 above in this section.

National Board of Health and Welfare to "play an official scientific advisory role directed towards the Public Health Agency or Government".

[57] https://forbetterscience.com/2020/04/07/swedish-scientists-call-for-evidence-based-policy-on-covid-19/

16.

In addition, there were also individual researchers strongly supporting the Swedish strategy, with questionable independence because of the close contact with the Swedish Public Health Agency or other ties to authorities—yet they were regularly given a bigger stage in the Swedish mainstream media although often clearly spreading disinformation (Bjurwald et al., 2021, 2021e) (9).

It seems the authors contradict themselves here. On the very same page they write "Because of this sparsity of data, including records of meetings, it appears the *strategy was based on the opinions of a very limited number of individuals* (primarily Anders Tegnell, Johan Giesecke and Johan Carlson at the Public Health Agency)." Both these statements can't be true. The current claim is also vague: What do the authors mean by "disinformation" and what "disinformation" are these "individual researchers" supposed to have spread?

17.

Yet barely any data or communications were made public, and the few critical questions of the media at the press conferences were mainly ignored (Bjurwald et al., 2021; Lindström, 2021). Because of this sparsity of data, including records of meetings, it appears the strategy was based on the opinions of a very limited number of individuals (primarily Anders Tegnell, Johan Giesecke and Johan Carlson at the Public Health Agency). This small group of "experts", with a narrow disciplinary focus, also went beyond their mandate and expertise—for example, commenting on the economic effects—and demanding more power/authority than they were legally allowed to have (Kleja, 2020). (9)

There are several issues here. Firstly, the claim "the few critical questions of the media at the press conferences were mainly ignored" is not true. Complaints about media bias are repeated a few times by the authors: "Their narrative at regular press conferences was presented by the national media with little critical questioning (despite regular contradictions), or fact checking." (10) and "The Swedish strategy was considered 'internationally superior' from the beginning and should not be questioned, a position fuelled by the Swedish mainstream (and state-sponsored) media (Bjurwald et al., 2021; Andersson and Aylott, 2020)." (11). The study "Journalistik i Coronans tid"[58] provides proper data (unlike the authors and their sources) and shows that Swedish local media and Swedish public service radio programme Vetenskapsradion asked the highest proportion of critical questions (56). Worth noting is also the fact that "The most common word in all analysed questions was…face mask(s)" (10). Secondly, why is "experts" in quotation marks? Giesecke is a professor emeritus of Infectious Disease Epidemiology and the author of the book Modern Infectious Disease Epidemiology, currently in its third edition, and both Carlson and Tegnell have PhDs in infectious disease epidemiology (Carlson was also Associate Professor at Karolinska Institute) and have spent decades working with infectious diseases. This kind of denigration is unworthy in a supposedly scientific article. Thirdly, regarding "commenting on the economic effects", it's difficult to know what the authors mean, as there are no references, but representatives from the Public Health Agency have stated more than once[59] that the economy was not something they took into consideration.

[58] https://mediestudier.se/wp-content/uploads/2021/02/Journalistik-i-coronans-tid_sammanslagen_webb.pdf

[59] E.g. https://www.svt.se/nyheter/inrikes/experter-kritiserar-anders-tegnell-i-intern-mejltrad-blodigt-allvar

18.
The strategy communicated to the public included some talking points, but these were not sufficiently linked to concrete actions. (9)

This is a subjective opinion. One could just as well argue that it's difficult to think of a stronger link between the aim of flattening the curve and the very concrete actions of staying at home, even with only the mildest of symptoms, keeping your distance, washing your hands, avoiding crowds and unnecessary journeys.

19.
The Public Health Agency also downplayed the severity of the pandemic and community spread in Sweden—claiming repeatedly in the media that COVID-19 would never spread in Sweden, that the number of infections was decreasing (despite evidence to the contrary), that COVID-19 was not a bigger threat than previous corona virus infections and influenza, that natural herd-immunity was within close reach, and that there would never be a second/third/fourth wave (Brusselaers et al., 2020; Vogel, 2020; Bjorklund and Ewing, 2020) (9).

This is factually incorrect. There is nothing in the sources which supports these claims. For the sake of brevity, we present two sources which refute the claims that covid-19 would never spread in Sweden and that there would never be a second wave: In Svenska Dagbladet on 6 Feb 2020, Johan Carlson said "the corona virus will not spread in Sweden *in the current circumstances*" (our italics). He also said: – Vi måste bli oroliga om viruset sprids i världen. Då är risken för inflöde från andra håll mycket större. Jag tänker framförallt på spridning i länder med dålig infrastruktur i Asien och Afrika, men även om sjukdomen slår ner någonstans i Europa. Då har vi en mer komplicerad situation, och måste skärpa beredskapen.[60] [We have to worry if the virus spreads throughout the world. Then the risk of an influx will become much bigger. I'm first and foremost thinking of the virus spreading in countries with bad infrastructure in Asia and Africa, but also if the disease gets a foothold somewhere in Europe. Then the situation will become more complicated and we'll have to increase our preparedness.] Regarding the claim that there would never be a second wave: On 1 April, Tegnell said in Dagens Nyheter "This is a virus which will not disappear, and we have talked about a possible second wave in Sweden in the autumn"[61].

20.
The assumptions and modelling from the Public Health Agency were not communicated, or they were presented in a methodologically unsound and unscientific manner raising more questions. (9)

We have already pointed out that the Public Health Agency did indeed publish their modelling (see discussion of issue 10 above in this section) and in one case when mistakes were found in a report[62], they were quick to acknowledge and correct the mistakes. What the authors

[60] https://www.svd.se/a/qLw0rz/vi-vill-inte-invagga-manniskor-i-falsk-trygghet
[61] https://www.dn.se/nyheter/sverige/tegnell-en-andra-vag-kan-komma-ganska-snabbt/
[62] https://emanuelkarlsten.se/folkhalsomyndigheten-om-siffrorna-det-blev-alldeles-galet/

mean by "they were presented in a methodologically unsound and unscientific manner raising more questions" is unclear as they don't provide any examples or an explanation to what can only be described as the authors' opinion.

21.
Even after national and international criticism and condemning official assessments of the "failed" Swedish strategy by different (international) committees and working groups, no drastic changes occurred, scientific evidence was still ignored, and the strategy was still heavily promoted (Ludvigsson et al., 2020, 2020a). (9-10)

We note that this paragraph more or less follows immediately after the authors have cited a source where the Swedish strategy is praised by the WHO. It's clear that the authors' description of the Swedish strategy as universally criticised is not true.

22.
There is still no open, democratic platform for decision and policy making; nor changes in responsibilities at the Public Health Agency or Government because of their inaction or suboptimal and unscientific/unprofessional functioning. (10)

What do the authors mean by "open, democratic platform for decision and policy making"? Are there any examples of other countries where this has been applied? As far as we're aware there was no "open, democratic platform for decision and policy making" in either Denmark or Norway when the Prime Ministers decided to close the borders on 13 and 16 March, respectively. Does this mean that the authors think that "Not including citizens in the decision-making process about the strategy also contributes to a deconstruction or erosion of democracy." (10) applies to Denmark and Norway as well? Furthermore, there is nothing to back up the claim about "inaction or suboptimal and unscientific/unprofessional functioning", making this nothing more than unfounded opinions.

23.
The Swedish paradigm to handle COVID-19 was evidently different from the majority of countries, failing to follow international advice of the WHO/ECDC or scientific evidence. (10)

This is more of the same subjective criticism, again ignoring the fact that the Swedish strategy has been praised by the WHO (cf. issue 21 above), including by the Director General[63].

24.
Other official organisations (including health- and elderly care, schools) have also relied on this agency without assessing scientific evidence or other expert advice themselves. (10)

As far as we're able to tell, this is true, but what do the authors mean? Should schools and nursing homes consult other experts? How is that supposed to work? Would it even be compatible with Swedish administrative law?

[63] https://www.svd.se/a/dO68pO/who-s-chef-andra-bor-lara-av-sverige

25.
In terms of governance, the whole Government crisis management function ceased to operate independently, and all decision-making landed on the Public Health Agency. This threatens parliamentarian democracy since no discussion seemed to have taken place in any political party on the pandemic response and the share of responsibility in the pandemic. Since all parties have agreed not to turn virus politics into an issue, citizens cannot affect the policy by their vote in the next election. (10)

This is a sweeping statement. What do the authors mean by "operate independently"? It should be noted that several MPs have criticised the handling of the pandemic, and irrespective of this, citizens are still free to influence public opinion. As we have said before, it could be argued that the biggest threat to democratic rights was the curtailment of the freedom of assembly.

26.
The 'Precautionary principle' which is in fact written into the EU's function, has been ignored, since a "wait-and-see" passive approach has been followed. Sweden never aimed at suppressing transmission of infection; only to not overwhelm healthcare—contrary to the advice of WHO and ECDC (10).

This is factually incorrect. In fact, considerable effort was made to contact trace all cases until community spread was confirmed on 10 March[64]. Furthermore, the ECDC writes in the fifth update of the Rapid Risk Assessment of covid-19[65] (published on 2 March 2020): "Delaying transmission or decreasing the peak of the outbreak is crucial to allow healthcare systems to prepare and cope with an increased influx of patients.". In the sixth update (published on 12 March 2020) they write "A rapid shift *from a containment to a mitigation approach* is required, as the rapid increase in cases, that is anticipated in the coming days to few weeks may not provide decision makers and hospitals enough time to realise, accept and adapt their response accordingly if not implemented ahead of time"[66] (our italics).

27.
There were never strong feelings of solidarity in the Swedish population, as in "everyone together against the virus" as in other countries especially during the first six months of the global pandemic (Borrud, 2020). (11)

To back up their claim, the authors have used an article from a local American newspaper, The Oregonian[67], in which it is stated "Healthcare workers, Gov. Kate Brown and other officials have expressed frustration as Oregonians flouted pleas for people to stay home, including canceling spring break travel plans over the last week, in order to reduce the spread

[64] https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/mars/folkhalsomyndigheten-rekommenderar-provtagning-av-sjuka-som-varit-i-tyrolen/
[65] https://www.ecdc.europa.eu/sites/default/files/documents/RRA-outbreak-novel-coronavirus-disease-2019-increase-transmission-globally-COVID-19.pdf
[66] https://www.ecdc.europa.eu/sites/default/files/documents/RRA-sixth-update-Outbreak-of-novel-coronavirus-disease-2019-COVID-19.pdf
[67] https://www.oregonlive.com/coronavirus/2020/03/oregon-launches-stark-new-public-appeal-stay-home-dont-accidentally-kill-someone.html

of coronavirus." Was this really the best source the authors could find to illustrate their point about solidarity in other countries?

28.
The Swedish strategy was consequently tailored to accommodate the middle/upper class. Younger and wealthier individuals should be restricted as little as possible in their daily movements while less-advantaged people could not work from home (Nygren and Olofsson, 2020) (11)

As we have already discussed (see issues no. 5, 6 and 9 in the section "Incorrect references"), these very same issues are observed in countries which adopted harsher measures (i.e. lockdowns)[68,69]. It would be more honest to acknowledge that a pandemic will inevitably disproportionately affect the less well off, no matter how society chooses to react to it.

29.
Outcomes of the Swedish strategy on a societal level. The Swedish pandemic response included multiple forms of pandemic prioritisation (Nielsen, 2021), although not in its expected sense: Social-welfare prioritisation seemed to fit more economically advantaged instead of the usual vulnerable and socially disadvantaged. Considering severity prioritisation, severe cases have been deprioritised, not receiving adequate healthcare (e.g., ICU), and individuals with comorbidities were less likely to receive optimal care. Age-based prioritisation runs against the core-prioritarian idea, and the handling in elderly care was a clear example. (10-11)

This paragraph contains sweeping claims, but there are no sources to corroborate any of them, so ultimately this raises more questions than answers.

30.
Even accurate numbers on COVID-19 infections and deaths were no priority, as clear from the restricted access to (often suboptimal) testing and healthcare, lack of contact-tracing to identify suspected cases, delays in reporting and non-sensitive case-definitions (leading to underestimations). (12)

What do the authors mean by "accurate numbers on COVID-19 infections", "(often suboptimal) testing and healthcare" and "non-sensitive case-definitions"? Swedish statistics have been proven to be reliable – this is also the conclusion of an article in Läkartidningen[70] (incidentally one of its authors is also a member of VetCov-19, and thus closely affiliated with five of the authors of this paper).

31.
Several studies have shown that the human costs would have been significantly lower in Sweden if stricter measures had been implemented, without more detrimental impacts on the

[68] E.g. https://www.nottingham.ac.uk/vision/working-class-women-work-during-the-covid-19-pandemic and
[69] https://www.nature.com/articles/s41562-021-01212-7
[70] https://lakartidningen.se/klinik-och-vetenskap-1/artiklar-1/klinisk-oversikt/2021/07/god-samstammighet-mellan-olika-svenska-matt-pa-avlidna-i-covid-19/

economy (Kamerlin and Kasson, 2020; Sjödin et al., 2020; Sheridan et al., 2020; Born et al., 2021b; Amiri, 2021; Born et al., 2021a). (12)

It should be noted that the studies the authors refer to don't take any subsequent lockdowns after spring 2020 into consideration. Regarding the effects on the economy, the raw figures from OECD[71] suggest the Swedish economy has outperformed the other Nordic countries, even though it is arguably a more open economy (i.e. more vulnerable to fluctuations in the international markets) than Denmark, Norway or Finland. Furthermore, an article in DI[72] citing an analysis by Capital Economics suggests the Swedish strategy meant savings of 100 billion SEK ("We suspect that its economy would have shrunk by an additional 3-4%-points in the first half of the year if it had followed a similar approach to Germany"[73]). And at some stage the lockdowns will inevitably take their toll on the economy, as the recently published figures from Shanghai show[74].

32.

The Swedish strategy has also been at the base of the controversial Great Barrington Declaration (published October 4, 2020) aiming for natural herd-immunity by letting the infections spread in a "controlled way" in society (Kulldorff et al., 2020), with several of the initiators/defenders having strong ties to Sweden (2021e). This strategy is considered internationally as unscientific, unethical, and unfeasible (Aschwanden, 2020; Aschwanden, 2021; Khalife and VanGennep, 2021; Sridhar and Gurdasani, 2021). Consequently, we argue that the Swedish strategy and several of its supporters have undermined efforts to suppress the infection in other countries (Kulldorff et al., 2020; Mccurry, 2020; Giesecke, 2020; Vogel, 2020, Bjorklund and Ewing, 2020). (12)

The authors make more or less the same argument on page 2 ("The Swedish Strategy was also influential abroad, and became an argument in other countries including, among others, the United States (US), United Kingdom (UK) and Australia, to loosen restrictions (Orlowski and Goldsmith, 2020; Jung et al., 2020). Supporters of the natural herd-immunity strategy promoted a widespread "controlled" spread in society, to obtain herd-immunity without vaccination (although there was never sufficient evidence for lasting immunity against re-infection) (Jung et al., 2020; Iacobucci, 2020).") and they are of course free to do so, but then they also need to take into consideration *why* leaders in other countries would decide to abandon their efforts to suppress the infection and listen to proponents of "the Swedish strategy". Perhaps they realised that suppression was never a viable option? China with its draconian measures and continued struggle with outbreaks, serve as a deterring example.

33.

The absence of an independent authority or institute exclusively concerned about national infection control also had major consequences, since decision-making by the few involved actors seemed heavily politicised instead of scientific (2021e). (12)

[71] https://www.ekonomifakta.se/Fakta/Ekonomi/Tillvaxt/BNP---internationellt/?graph=/17391/1,14,16,36,53/2019-/

[72] https://www.di.se/nyheter/tegnells-coronastrategi-sparade-sverige-100-miljarder/

[73] https://www.capitaleconomics.com/clients/publications/nordic-swiss-economics/nordic-swiss-economics-focus/key-lessons-from-swedens-covid-response

[74] https://www.reuters.com/article/china-economy-shanghai-idINB9N2Y9010

The source 2021e[75] is a joint report by the Swedish Section of the International Commission of Jurists and the Civil Rights Defenders. They're not necessarily the best authority to decide how the work with national infection control should be structured. The same source is actually used no less than ten (!) times in the paper to support various claims, including: "Several Swedish experts warned about the pandemic already in January 2020—but this was dismissed by the authorities and even ridiculed in the media (Sörensen, 2020; Claeson and Hanson, 2021, 2021e). and "We argue that there was failure of science advice from the start with "COVID-denial" and disregard of scientific evidence (2021e, Miller, 2020)" (11). (Miller[76] is an article about the US and doesn't even mention Sweden.) The report itself is a 14-page document which deals with everything from the independence of the judiciary system, free media, corruption, the penal system and the labour market. The discussion regarding the impact of covid-19 consists of three pages at the end.

34.
Despite the mounting evidence, the Swedish authorities still deny an active herd-immunity strategy—and have clearly misled the public about their intentions, ignoring and discrediting international scientific evidence and spreading misleading information. (12)

This is another case where the authors' arguments veer into conspiracy theory territory. It is far from clear what "the mounting evidence" is (presumably the authors are referring to select quotes from internal emails, which are often taken out of context and do not necessary reflect the final decisions) or what "active herd-immunity strategy" actually means, but perhaps it is enough here to show that Tegnell in an interview in the Financial Times[77] on 7 May 2020 stated that "I don't think we or any country in the world will reach herd immunity in the sense that the disease goes away because I don't think this is a disease that goes away". This raises two questions: Why would the authorities adopt a strategy they don't think is achievable and why do the authors think that the Swedish strategy was anything other than a mitigation strategy aimed to "flatten the curve" so as to ensure that the health care services weren't overwhelmed?

35.
The Swedish COVID-19 policy has been an outlier from the start, in Europe and globally, despite its excellent record in healthcare research and prevention. It is clear this is a consequence of the societal structure and changes over the last decades. (12)

The statement "It is clear this is a consequence of the societal structure and changes over the last decades." is very broad and sweeping and the authors don't provide any data or explanations. What do they mean? The matter becomes even more confusing as the authors on the previous page state "Sweden is a prosperous and highly developed country, which has invested strongly in healthcare and research over recent decades" (11).

[75] https://www.icj-sweden.org/wp-content/uploads/2021/03/Rule-of-Law-report-consultation-Sweden.pdf
[76] https://jamanetwork.com/journals/jama/fullarticle/2772693
[77] https://www.ft.com/content/a2b4c18c-a5e8-4edc-8047-ade4a82a548d

36.

Critical questioning, even by internationally renowned scientists and experts, became risky, even dangerous, in a country where conformism was encouraged by the national media. (12)

Apart from the (unverified) claim by Brusselaers that she was "publicly reprimanded by her department chair", the paper doesn't contain any evidence of the alleged risks or dangers. What should be mentioned in this context is that the tone of the debate quickly turned nasty and perhaps affected the representatives of the Public Health Agency more than any others[78].

37.

The repetitive statements strongly claiming that all other countries were wrong or experimenting during the current pandemic, also led to some international tensions (Mccurry, 2020, 2020c), and Sweden's self-proclaimed position as moral [sic!] *superpower and Life Science Nation could be questioned (Lanz, 2021; Steinfeld, 2021), in particular by its non-cooperative stand and resistance to EU's corona bonds, ECDC and WHO recommendations (Vogel, 2020, 2021e).* (12)

While it is true that Johan Giesecke in an interview in Dagens Industri[79] on 3 April 2020 said "All other countries are doing it wrong" and Anders Tegnell said that reopening is a gigantic experiment in an interview in Dagens Nyheter[80] on 27 June 2020 there is nothing in the sources (or, to the best of our knowledge, anywhere else) which backs up the authors' claim about "repetitive statements strongly claiming that all other countries were wrong or experimenting". McCurry, 2020 is an article in The Irish News about Johan Giesecke's advice to an Irish government committee, 2020c is an article on the BBC's website about the Italian ambassador's "spat" with Anders Tegnell following the latter's rather clumsy statements about the state of Italian health care and Lanz, 2021 is a German one hour documentary about the Swedish covid-19 strategy, which is a nuanced portrayal, where both critics and supporters of the Swedish strategy are interviewed. Finally, Steinfeld is an opinion piece in Dagens Industri by an author and arts editor regarding the view of Sweden in Germany. It is also worth pointing out what Tegnell actually said in that interview in Dagens Nyheter, which is a lot more nuanced than the authors give the impression of: "Det är ett stort experiment. Många säger att vi i Sverige gör ett experiment men i så fall är vi definitivt inte ensamma om det. Öppnande är ett gigantiskt sådant. När man är på den höga nivå som man var i USA, då får man väldigt stora effekter när man öppnar igen. Då har man inte tryckt ned det. När man har tryckt ned det så mycket som man gjort i Danmark då får man en betydligt längre frist. Då kanske man kan hålla smittan nere." [It is a big experiment. Many people say that we're conducting an experiment in Sweden, but in that case, we're definitely not the only ones. Opening up is a gigantic experiment. When you're at as high a level as in the US, you get very big effects when you open up again. Then you haven't suppressed it [i.e. the spread of the virus]. When you've suppressed it as much as they've done in Denmark, you get a considerably longer reprieve and then you might be able to keep the contagion down.]

[78] https://lakartidningen.se/aktuellt/nyheter/2021/02/flera-pa-folkhalsomyndigheten-behover-polisskydd-efter-dodshot/

[79] https://www.di.se/nyheter/giesecke-alla-andra-lander-gor-fel/

[80] https://www.dn.se/nyheter/sverige/anders-tegnell-landernas-oppnande-ett-gigantiskt-experiment/

38.

On April 1, 2020 the ECDC recommended timely and accurate testing; and on April 8th facemask use in the public to prevent asymptomatic infection. (Vogel, 2020, 2021ac) (supplement, 25)

This is only partially true. On 8 April the ECDC published an "opinion on the suitability of face masks and other face covers in the community by individuals who are not ill" and it leaves it to the national health authorities to decide. In the conclusion it is emphasised that any recommendation "should carefully take into account the evidence gaps, the supply situation, and potential negative side effects" (4)[81]. On the same date the ECDC also published the eighth update[82] of their Rapid Risk Assessment regarding covid-19 where they say "The use of face masks in public may serve as a means of source control to reduce the spread of the infection in the community by minimising the excretion of respiratory droplets from infected individuals who have not yet developed symptoms or who remain asymptomatic [111], The use of face masks in the community should be considered only as a complementary measure and not as a replacement of the preventive measures already recommended including physical distancing, respiratory etiquette, meticulous hand hygiene and avoiding touching the face, nose, eyes and mouth" (p.12). In the preceding report[83] published on 25 March they write: "There is no evidence on the usefulness of face masks worn by persons who are not ill to prevent infection from COVID-19, therefore this is not advisable [80]. It is possible that the use of face masks by untrained people may even increase the risk of infection due to a false sense of security, inappropriate use of the mask, and increased contact between hands, mouth and eyes without hand washing" (p.11). What it is that made the ECDC change their advice is not clear – the reference (111) provides no further clues as it refers to a document[84] from February in which the ECDC writes "There is no evidence on the usefulness of facemasks worn by persons who are not ill as a community mitigation measure. In the EU, it is not customary for health people to wear masks in the wider community. If masks are used, best practices for donning, doffing, and disposing of them should be followed. The hand hygiene measures detailed above should always be followed after removing a mask (p.3-4).

39.

There was also an expansion of the rights and flexibility to be in sick leave, including the cancellation of the karensdag (i.e., no salary on first day of illness). (2020q) (supplement, 26)

It is quite remarkable that the authors only fleetingly, in the table on page 4 and in the supplement, mention the abolishment of the "karensdag" - perhaps one of the most important measures to curb spread of the virus, enabling people to stay at home with sick pay when they develop symptoms.

[81] https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-use-face-masks-community.pdf

[82] https://www.ecdc.europa.eu/sites/default/files/documents/covid-19-rapid-risk-assessment-coronavirus-disease-2019-eighth-update-8-april-2020.pdf

[83] https://www.ecdc.europa.eu/sites/default/files/documents/RRA-seventh-update-Outbreak-of-coronavirus-disease-COVID-19.pdf

[84] https://www.ecdc.europa.eu/sites/default/files/documents/novel-coronavirus-guidelines-non-pharmaceutical-measures_0.pdf

40.
By ignoring testing, reporting, contact tracing and quarantine, COVID-19 was left to spread unnoticed at first. (supplement, 34)

This is factually incorrect. While it is true that quarantine was not recommended or mandated, to claim that testing, reporting and contract tracing was ignored is not true. As we've pointed out earlier (see the discussion of issue no. 26 in this section), in fact, considerable effort was made to contact trace all cases until community spread was confirmed on 10 March[85].

41.
The media and National Board of Health and Welfare also reported on the high survival of hospitalised and ICU patients, (Funck, 2020, 2020p, Strålin et al., 2021) with insufficient critical assessment of the potential selection bias of patients due to restricted access and triage. (supplement, 35)

42.
The report from the Academy praised the Swedish healthcare system for success but pointed out that Sweden entered the pandemic with far fewer hospital beds and ICU beds per person than Europe or the neighbouring countries.(2020m) The report did not address clearly that the reason Sweden always had reserve beds in ICU was due to triage. (supplement, 39)

While it can't be ruled out that some triage took place, the authors present no data and no sources to back up their claims. In the paper itself, the authors are somewhat more careful in their wording:

> There has most likely been a before—and within hospital triage of individuals with potential COVID-19 in several places in Sweden. During spring 2020, many individuals were not admitted to the hospitals, and did not even receive a health examination since they were not considered at risk—resulting in individuals dying at home despite trying to seek help (Vogel, 2020; Bjorklund and Ewing, 2020; Hiselius and Arnfalk, 2021). In addition, there were triage instructions available in Stockholm region, showing that individuals with comorbidities, body mass index above 40 kg/m2, older age (80+) were not to be admitted to intensive care units, since "they were unlikely to recover" (Vogel, 2020; Söderberg et al., 2020). Although it has been disputed that these were implemented in practice, the age distribution of the admission at the ICUs strongly suggests a selection bias for admission to the ICU based on age (Kamerlin and Kasson, 2020; Funck, 2020, 2020o; Strålin et al., 2021). (6)

However, their only source for this claim is Kamerlin and Kasson, which is a theoretical model based on the work of Ferguson et al. at Imperial College, which not only overstated the number of infections, but also doesn't take into account the fact that brittle elderly people won't benefit from ICU treatment, i.e. it is assumed that the proportion of those infected needing an ICU bed increases with age, also in the highest age groups.

43.
Even if the risk of getting severe illness is lower among children, some children do get severe illness and may die or develop long-COVID. (Bjurwald, 2021) (supplement, 37)

[85] See footnote 60

This is an uninformative claim ("some children") and the source is an article, written by a journalist, which contains only anecdotes and no data[86].

44.
Neither the mainstream media nor the Government have shown great interest in this important age-group and the potential short and long-term effects on their physical, mental and emotional health. (Bjurwald, 2021, Höög and Adman, 2020, 2021c) (supplement, 37)

Again, it could be argued that by not closing primary and secondary schools, the Government did think about the "potential short and long-term effects on their physical, mental and emotional health" (cf. the discussion of issues 7 and 8 in this section).

45.
This Lancet article was published on May 30 and heavily criticized for its claims that everyone will get infected, that lockdowns do not work, and that an unrealistically high immunity was already reached in Stockholm. (supplement, 38)

This refers to an article by Johan Giesecke[87]. Firstly, what Giesecke actually says is "Everyone will be exposed to severe acute respiratory syndrome coronavirus 2, and most people will become infected." - i.e. the claim that "everyone will get infected" is not accurate, and thus another example of the authors' dubious treatment of sources. What the authors also fail to mention is that some of the most vocal criticism originated from the authors themselves, so they can hardly be considered impartial[88,89]. While it is true that Giesecke overestimated the immunity in Stockholm at the time (likely around 10-15%, rather than the 20-25% he predicted), something which he also acknowledged in his reply, published on 8 August 2020[90], it could certainly be argued that he has been proven right about the other two claims. The best example that suppression is not a viable long-term option is probably Hong Kong[91].

Conclusion

As we see it, the four biggest weaknesses of this paper, apart from the outright errors, are in no particular order: the misrepresentation of sources, the quality of (some of) the sources, the unscientific language and the lack of data.

The paper leaves the reader with the impression that the authors are trying to portray the pandemic and the decisions made to deal with it as a situation without nuances, where more or less all measures taken in Sweden were bad or incorrect. An illustrative example is the

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[86] https://www.dagensarena.se/opinion/pandemins-obekvama-offer/
[87] https://www.thelancet.com/journals/lancet/article/PIIS0140-67362031035-7/fulltext
[88] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31672-X/fulltext - Steineck and Brusselaers among the co-authors
[89] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31676-7/fulltext - Ewing sole author
[90] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31677-9/fulltext
[91] https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&time=2020-03-01..latest&facet=none&pickerSort=asc&pickerMetric=location&hideControls=false&Metric=Confirmed+deaths&Interval=7-day+rolling+average&Relative+to+Population=true&Color+by+test+positivity=false&country=HKG~SWE

arguments put forward by the authors regarding schools. “[T]he Swedish strategy was strongly against any school closures or measures to protect children, as clearly communicated by the Public Health Agency, the Minister of Education and others” (p.6). Not only was the concern about the effects of closing schools voiced internationally[92], as we have pointed out, the decision made by the Public Health Agency not to close schools was based on a report from the WHO, falsifying the authors' claim that “The Swedish strategy has been going against the international consensus (including WHO, ECDC, CDC) from the start.” (p.9). It also seems as if the authors strive to portray the Public Health Agency in the worst possible light. Perhaps the best example of this is how the quote regarding Enok Sarri from Johan Carlson is given a racist undertone.

On page 3, the authors write “Because of the importance of accurate and reliable sources, we strove to refer to the original source as much as possible, and to peer-reviewed publications—focusing on issues related to the interaction between policy and science. However, there were hundreds of relevant sources including media reports; and consequently, we had to refer to some secondary sources.” If there were "hundreds of relevant sources", how come some of the ones that made it into the paper are clearly inferior? For example, we can’t help but wonder why the authors decided to include such a highly dubious source as Putilov regarding the Field Hospital in Älvsjö. Another example of dubious sources, in addition to the ones we’ve already mentioned: To back up their claim “Ageism, defined as prejudices or stereotypical perceptions based on a person's age and which can lead to discrimination, is a bigger problem in Sweden than in the other Nordic countries”, (supplement, 5) the authors have used a report written by a “Communication manager” at Uppsala Pensionärsföreningars Samarbetsråd. (NB. The claim may very well be true, but the source used to back up the argument is not a very good one in a purportedly scientific paper.).

We have raised questions regarding the quality of the review process. In this context, we note that there has only been one minor correction to the paper so far[93]. Does this mean that the editors see no issues with the other inconsistencies, errors and misinterpretations, or are they simply unaware of them? Furthermore, the correction states “With this setup, the authority lost scientific expertise”, although the authors must be fully aware of the fact that two of the six professors that left are the very same professors the authors state are too closely affiliated with the Public Health Agency and too supportive of the proposed strategy. In an article in Aftonbladet[94], five of the six professors are asked about their opinion in this matter, and the only really critical voice is that of the parasitologist, who perhaps is not the most relevant person in the context of a virus pandemic.

In our opinion “Evaluation of science advice during the COVID-19 pandemic in Sweden” is a tendentious article written in bad faith and it should never have been published. Rather than analysing the Swedish strategy as it was actually carried out - suppression until community spread was confirmed and then mitigation (“flatten the curve”) to make sure health care wasn’t overburdened, the authors build a case around internal emails, statements taken out of context and sometimes dubious sources to create the impression that “The Swedish

[92] E.g. https://www.nytimes.com/2020/03/10/opinion/coronavirus-school-closing.html

[93] https://www.nature.com/articles/s41599-022-01254-w

[94] https://www.aftonbladet.se/nyheter/a/3Jredq/elitforskarna-som-fick-lamna-fhm-bryter-tystnaden-blev-olyckligt

strategy has been going against the international consensus (including WHO, ECDC, CDC) from the start." (p.9).

On page 3 the authors write "By scientific evidence, in the context of this paper, we refer to the advice of international authorities in infection control (including the World Health Organisation, (European) Centres for Disease Control and Prevention), and the body of peer-reviewed scientific papers. We'd therefore like to finish by presenting what these organisations *actually* said "from the start", illustrated with examples from the ECDC, which during the pandemic has published a series of Rapid Risk Assessments (the last update to date is the 19th update, published on 27 Jan 2022[95]), the fifth, sixth, seventh and eighth updates of which were published on 2 March, 12 March, 25 March and 8 April 2020, respectively. The ECDC presents five different scenarios regarding the spread of the virus, including options for measures to introduce for each scenario. In the seventh update[96] published on 25 March (i.e. *after* lockdowns had been introduced in several countries), the ECDC writes the following about the various scenarios (p.24, Annex 4):

> Scenario 1 describes a situation with multiple introductions but limited local transmission in the country…In this situation, the objective is containment of the outbreak by blocking transmission opportunities, through early detection of imported and locally-transmitted COVID-19 cases in order to try to avoid or at least delay the spread of infection and the associated burden on healthcare systems.
>
> Scenario 2 describes a situation with increasing number of introductions and of more widespread reports of localised human-to-human transmission in the country (more than two generations of cases outside of sporadic clusters with known epidemiological links). In this situation, the objective remains to contain where practicable and otherwise slow down the transmission of the infection.
>
> Scenario 3 describes a situation with localised outbreaks, which start to merge becoming indistinct…The objective at this stage is to mitigate the impact of the outbreak by decreasing the burden on healthcare systems and protect populations at risk of severe disease.

When the fifth update[97] was published on 2 March, Sweden was either in scenario 1 or 2. Here is what ECDC suggests for scenario 2 regarding schools: "Consider proactive school and day care measures or closure *if influenza is circulating in the community* to reduce the burden of influenza cases on the HC system" (p.22, Annex 1, our italics).

On 13 March, Denmark closed its borders and other countries soon followed suit. Here is what the ECDC says about border closures and travel restrictions (fifth update, p.13, our italics):

> Although WHO considers that the comprehensive measures taken by local authorities in China, which included severe travel restrictions have had a delaying effect on the epidemic within China and internationally, in general, *travel restrictions at international borders or within national borders are neither efficient nor effective against outbreaks of respiratory disease*, unless they can be implemented comprehensively. During the 2009 influenza pandemic, *such comprehensive measures were shown to be feasible and effective only on isolated, small island countries.*

[95] https://www.ecdc.europa.eu/en/publications-data/covid-19-omicron-risk-assessment-further-emergence-and-potential-impact

[96] See footnote 83

[97] See footnote 65

As we have mentioned above, in the sixth update[98] published on 12 March, the ECDC concludes the following: "*A rapid shift from a containment to a mitigation approach is required*, as the rapid increase in cases, that is anticipated in the coming days to few weeks may not provide decision makers and hospitals enough time to realise, accept and adapt their response accordingly if not implemented ahead of time" (p.2, our italics). This version of the report also contains the famous "flatten the curve" figure (p.9), a similar version of which the Public Health Agency used in their daily press briefings. This is what the ECDC states are the main aims of risk communication: "The need for individual and shared responsibility should be emphasised through a focus on frequent hand washing, always covering the mouth and nose with tissues or elbow when sneezing or coughing, and implementation of self-isolation when symptomatic" (p.10). Their recommendations regarding mass gatherings (relevant in the context of the controversial decision to let the finals of "Melodifestivalen" (the national competition ahead of the Eurovision Song Contest) go ahead on 7 March):

> The cancellation of mass gatherings in areas with ongoing community transmission is, therefore, recommended…In case mass gathering events take place, high risk individuals should be advised not to participate. Other personal protective and environmental measures should be implemented. Due to the significant secondary effects (social, economic, etc.) of social distancing measures, the decision on their application should be *based on a case-by-case risk assessment*, depending on the impact of the epidemic and the local epidemiological situation [55]" (14, our italics)

Note that we're not arguing that SVT reached the correct decision after consulting with the Public Health Agency; we're not the right people to pass that judgement, but it is clear from the above that the decision to let the event go ahead did not contravene the recommendations from the ECDC.

In the eighth update of the report[99] the ECDC express their worries about the negative consequences of lockdowns, for the general population ("However, stringent physical distancing measures are highly disruptive to society, both economically and socially, and there are already signs that people in some countries are not adhering firmly to the recommended measures on account of 'isolation fatigue' [189]" (p.18)), and for children in particular: "Children who have been isolated or quarantined during previous pandemics have been found to be at increased risk of developing acute stress disorder, adjustment disorder, and grief, with 30% meeting the clinical criteria for post-traumatic stress disorder. Extra efforts must be made to minimise the impact of physical distancing on children's mental health, as these impacts can be lifelong [139]". (p.13)

And thus the question arises, what do the authors actually mean by "The Swedish strategy has been going against the international consensus (including WHO, ECDC, CDC) from the start."? If anything, these reports seem to confirm that Sweden meticulously followed the advice from the ECDC (with the exception of the somewhat half-hearted recommendation of face masks from 8 April onwards) and that other countries introduced measures for which there was no evidence that they would work.

[98] See footnote 66
[99] See footnote 82

Competing Interest Statement

We declare no competing interest.

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Dedication

We would like to dedicate this work to Johan Carlson, Anders Tegnell and all the other talented and hard-working civil servants at the Public Health Agency, whom we think should not be above and beyond criticism, but definitely deserve a fairer treatment than that which they have been subjected to in this paper by Brusselaers et al.

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