COVID-19 Cover Pages May Cause Nocebo Effects on Public Health: First Observations on the Connection between Media and Health Data across Cultures

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Abstract

Based on the observation that language use can harm health, the paper looks at the public health situation in late 2020 as compared to the situation in spring 2020 - the health situation is mainly defined via A) The weekly deaths 2020; B) The weekly deaths 2020 compared to the 2016-2019 average; C) The death rates measured as weekly z-scores at the national level, and as additional indicators; D) The death rates attributed to COVID-19; E) The intensive care unit days attributed to COVID-19; and F) The hospitalized COVID-19 patients. The figures are then related to 1) The 2020 covers of one or, if existent, two weekly, nationally circulating political news magazines from Austria, France, Germany, Italy, Poland, Sweden and the UK; 2) The 2020 front-page headlines of one daily newspaper from Austria, France, Germany, Italy, the Netherlands, Spain and the UK. As a result, the worst public health situations in the selection of countries match with the highest number of weeks with prominent negative coronavirus magazine covers, with Germany, Poland and Austria at the negative ends. Fewer non-positive covers are mostly related with better figures. It is suggested that further studies should take into account the potential effect of public language on public health.

Keywords

Effect of media language on health, Framing, Newspaper headlines, Magazine covers, Cover pages headlines, COVID-19, Nocebo effect, Eurolinguistic approach, Cross-cultural approach, Empirical approach

Introduction

Looking at the death rates and hospitalization figures of EU countries in 2020, one can see two waves that are currently related to the spread of a coronavirus termed SARS-CoV-2. In how far the prominent causes of these deaths can really be attributed to the same type of virus cannot be answered here. It can be noted, though, that in some countries the late 2020 wave is stronger than the 2020 spring wave. This may surprise since there had been the summer months during which societies could have learned how to best handle the spread of life-terminating diseases attributed to SARS-CoV-2. Obviously, the perfect measures had not been found. Sweden had refrained from drastic compulsory measures such as lockdowns, while other EU countries put their faiths in varying kinds of physical distancing. However, models of extreme distancing policies only calculated how much lives or life-time could be saved from the assumed limited spread of SARS-CoV-2, but never how much life-time they cost due to the distancing measures. That lockdowns did not lead to a statistically significant better result in avoiding deaths attributed to SARS-CoV-2, or the related disease COVID-19, was shown in several studies e.g. [1,2]. Similarly, the wearing of community masks of fewer than 6 layers has been scientifically doubted [3,4]; what seemed to trigger a higher death rate was related to (high) age, prior (bad) health condition, inequality (poverty) and (bad) health system. In addition, studies show how important a strong immune system is for dealing with diseases and how stress or a lack of contact with nature can weaken the immune system e.g. [5-11]. What has not been taken into account is whether the media exposure to the COVID-19 topic has any effect on health. This paper will add a few linguistic observations that may help to explain the different state of public health of late 2020 in contrast to spring 2020:
RQ: Is a worse late 2020 public health situation of a country in comparison to the spring 2020 situation paralleled or preceded by a higher intensity of negative prominent media language?

Theoretical Background and Methodology

The analyses here rest on two empirically based theorems:

1. Language can harm individual health. Several studies have demonstrated the nocebo effects of language in individuals e.g. [12-14].

2. Language can harm public health. Linguists and psychologists have been theorizing under the terms propaganda how special techniques can influence people’s thought and feelings e.g. [15-17]. Today, the shaping of thoughts through networks of words and phrases is also termed framing e.g. [18,19].

Based on this, has the public language used in 2020 had effect on the development of public health related with COVID-19? Since, given the figures available, it is impossible to do this with the usual statistical methods, an approximate approach needs to be elaborated.

1. Nation-wide high-circulation and high-quality weekly political magazines (Study 1) and daily newspapers (Study 2) are analyzed for their covers, since these are messages that people of a country perceive even if they do not buy the magazine or newspaper - they at least subconsciously look at them as passers-by due to their wide presence in supermarkets, corner stores and kiosks (even though sometimes not seeing the entire front page). Such sources may be considered typical representatives of the national media language or media discourse. In contrast, although news on social media will certainly have impact on viewers, they are selected more autonomously by viewers or are fabricated more individually by algorithms e.g. [20]. Also TV news programs, like social media, can be avoided, while magazine and newspaper covers are, as already said, widely present on one’s way to buying things needed every day. Viewing the cross-cultural question and the lack of data of concrete individual media habits in connection with individual health histories, newspaper and magazine covers are thus methodologically better than news in the social media and TV programs.

2. To level out other culture differences to the best degree possible. For Study 1, the idea of Eurolinguistics supports the selection of countries and languages from a rather homogeneous cultural group. The selection of Germany, Austria, France, Italy, Poland, Sweden, and the United Kingdom respects a principle of Eurolinguistics stricto sen-

3. Since some may argue that Poland is culturally too different from western European countries (some may claim this especially for media culture) and Sweden is culturally different in COVID-19 times because it had no lockdowns, Study 2 will exclude these countries. As a compensation, so that both studies show seven countries, it will include Spain and the Netherlands, which lack a culture of political weekly magazines, though. Study 2 will therefore deal with another type of media sources: the front pages of daily newspapers. For each country, there will be one high-circulation newspaper considered a quality paper (not “yellow press”): Austria’s Der Standard, France’s Le Figaro, Germany’s Die Welt, Italy’s Corriere della sera, the Netherlands’ De Telegraaf, Spain’s El mundo, Britain’s The Times.

4. The number of weeks with “coronavirus” covers will then be compared to the difference between the public health situation during the respective ten worst calendar weeks of spring and the public health situation during the respective ten worst weeks from October through December. The public health situations will not be expressed in the widely quoted positive PCR test results; they are often misinterpreted or wrongly termed infection cases or infection rate - at least if the classical definition of infection is applied, which su, namely a selection from all cardinal directions or geocultural subregions [21]. Mostly, two weekly magazines per country are chosen. In the case of Austria and Sweden, there is only one political magazine that can be considered nation-wide and of high circulation. The magazines are: Austria’s Falter, France’s L’Express and Le Point, Germany’s Der Spiegel and Stern, Italy’s Espresso and Panorama, Poland’s Polityka and Wprost, Sweden’s Fokus, Britain’s The Economist and The Spectator. Since potential effects will appear with delay and with growing repetition, health figures will not be related to concurrent media. Rather, it is analyzed in how many weeks of 2020 people could see a cover that was related to the (almost personified) coronavirus through words (in letter sizes even visible if the magazine is not directly taken into one’s hands) or through the cover picture or through both words and picture. It will also be checked how many covers transported a scarifying, fear-producing message and how many an encouraging, hope-producing one. Fokus has no new issues during a few summer weeks, with the last cover before summer break visible in kiosks, corner shops and supermarkets for a longer time; for this study, this will have no importance, because the last issue before the summer break was not a “coronavirus” cover.
would require a certain interaction between a
critical amount of virus and the body, which a PCR
test result does not automatically reveal. More
meaningfully, the comparison will predominantly
resort to:

A. The weekly deaths 2020 [22-24];

B. The weekly deaths 2020 compared to the 2016-
2019 average (2016-2019 average = 100) [22,25,26];

C. The death rates measured as weekly z-scores at
the national level in the EuroMOMO participating coun-
tries from Week 1 until Week 53, 2020 (z-scores are
used to standardize series and enable comparison pat-
terns between different populations or between differ-
ent time periods; the standard deviation is the unit of
measurement of the z-score) [27].

Additionally, the analysis will resort to the following
“COVID-19 figures”:

D. The death rates attributed to COVID-19 [28,29];

E. The intensive care unit days attributed to COVID-19
(for all countries except Poland, for lack of data) [30,31];

F. The hospitalized COVID-19 patients [30,32].

The figures under D to F must be interpreted with
utter care, since definitions of COVID-19 attributions
may have changed over time even within one and the
same country ([33] for England); in other words, since
patients and deceased people were commonly labeled
as “COVID-19 cases” even without symptoms of a re-
spiratory disease, without confirmation of PCR and an-
tigen tests through more precise tests and without
cross-checking against other viruses (such as influenza
viruses). Figures D to F can therefore not be seen as
good indicators of public health, only of mixed indicators
blending health and language (health classifications). As
just mentioned, this lack of validity holds even more
true for SARS-CoV-2-related figures that encompass
even asymptomatic cases (especially if it is not known
- not even by the official bodies - whether a second test
was immediately proceeded on a positive PCR or anti-
gen and/or how many test results were corrected and/
or how the test was executed and/or whether the prac-
tice has changed over the course of the period studied).

Furthermore, since the degree to what the dead or
hospitalized people had perceived the cover pages can-
not be determined individually, comparisons are not
made in a statistical sense, but in the sense of general
societal observations.

Results

Public health

Table 1 summarizes the observations on public
health in late 2020 in contrast to spring 2020. As men-
tioned above, death figures (A to C) are given the most
important weight, as they are the most neutral (incon-
testable), bare figures. However, the inclusion of the fig-
ures assumed to be linked to a SARS-CoV-2 infection (D
to F) do not change the overall picture.

Study 1

Study 1 analyzes the selected magazines, more pre-
cisely: the number of weeks of coronavirus-related
covers (either through words such as for “coronavi-
rus”, “COVID-19”, “masks” and “lockdown” or through
corresponding pictures). The counting includes those
covers where the coronavirus-relation is big enough so
that it can be considered visible for many passers-by
although this is, viewing differing eye-sights, a
vague approach, of course). The counting will include
insinuations of coronavirus with other topics:

The Economist 06/13, where the top topic of Black Live Matters is
combined with the drawing of a black person wearing a
mask; Espresso 25 on the same matter;
Falter 52, where
former Finance Minister Grasser, who faces a trial, is
pictured with a mask;
Polityka 51 on the topic of the
president’s connection with Hungary’s prime minister,
with a masked president. In Austria, Germany, France
and Poland there are some weeks just with covers
whose perception as coronavirus-related may depend
on the distance and knowledge background of the view-
er (Falter 32, Der Spiegel 42, L’Express 05/07, L’Express

Table 1: Public health late 2020 (in comparison to spring 2020).

| Country | A | B | C | D | E | F | Sum |
|---------|---|---|---|---|---|---|-----|
| AT      | – | – | – | – | – | – | –   |
| DE      | – | – | (–)| – | – | / | –   |
| ES      | + | + | + | + | / | + | +   |
| FR      | o | o | + | o | o | o | o+  |
| IT      | / | / | o | o | o | o | –   |
| NL      | + | + | + | + | o | + | o   |
| PL      | – | – | / | – | / | – | –   |
| SE      | o+| + | + | + | o | + | +   |
| UK      | + | – | + | + | o | – | *   |

+: Better; –: Worse; o: Similar; o+: Slightly better; *: Ambiguous; /: Unknown; (): Regional; A: Deaths; B: Deaths compared to 2016-
2019; C: EUROMOMO death rates; D: Assumed COVID-19 death rates; E: COVID-19 ICU days; F: COVID-19 hospitalizations.
05/14, L’Express 05/28, Polityka 17, Wprost 28, Wprost 36). Therefore, a range of numbers will be given.

From the intermediate sum subtracted will be those weeks where only positive covers are seen, all with respect to vaccines: The Spectator 09/12 (Title: “Winning shot”, picturing injections), Stern 50 (Title: “Geschafft!” ‘We’ve made it!’ picturing a vaccine). In addition, there are some covers which express a merely potential positive future; they may be perceived as positive or not. This, too, will lead to ranges of negative coronavirus covers.

In addition, some covers use war metaphors which may be perceived as particularly threatening. In contrast, humorous covers may serve as a certain relief from the coronavirus threat. A phenomenon specific to Germany is the use of religious motives connected with the coronavirus (Der Spiegel 16, Der Spiegel 44, Stern 53). Although there were interestingly seven “war metaphors” in the British sources, these as well as humorous covers turned out to be too few in number to be further included in this study.

Table 2 correlates the public health development with the covers. Sweden with the smallest number of negative coronavirus covers of only 5 weeks, or in other words: less than 10 percent of the 2020 cover pages, showed a better public health situation. Germany and Poland with over one third of the 2020 cover pages consisting of negative coronavirus messages showed worse public health than in spring. In between, with a fifth to a third of the covers, there are Austria with worse health figures during autumn/winter and Italy and France with similar figures as in spring. For the UK, as mentioned above, the ambiguous data on public health does not allow for a comparison. Similarly, the amounts of war metaphors and humorous covers in the sources selected do not seem large enough to discuss the influence on the winter public health.

Study 2

Study 2 correlates the public health figures with the number of (days of) coronavirus headlines on the front pages of daily newspapers containing the words “COVID” or “corona**” (as collected from the LexisNexis database [34]). Subtracted are the clearly positive coronavirus messages for a country (Table 3). Subtracted are the clearly positive coronavirus messages for a country (Table 3). Some headlines include both positive and negative aspects and some only relate to a potential positive future, which some may perceive as rather positive, some not. This results in a range of negative or neutral headlines.

The results corroborate Study 1: The two countries with the highest number of non-positive headlines showed worse public health in winter 2020. Spain and the Netherlands with very few non-positive headlines have clearly better data. France and the UK are in between. Italy is exceptional, since its winter public health situation is similar to the spring situation, although it shows a very low number of non-positive headlines.

Conclusion and Outlook

The two studies illustrated that a worse public health situation in late 2020 (general and COVID-related death numbers, COVID-19-related ICU days and COVID-19-related hospitalizations) is accompanied and preceded by a higher number of negative coronavirus front pages in newspapers and magazines. Again, the topic was not, and could not, be approached with strict statistical methods. After all, it is not possible to determine people’s precise perception of media messages on COVID-19. The aim in this study was to get a first idea of how media presence could be connected to the public health situation, triggered by prior observations on language and health. The effect of the density of positive front pages could not be studied here, since these were simply too few in number. The focus was therefore on non-positive messages.

Since the best and worst public health situations in the selection of countries match with the lowest and highest number of weeks and days with prominent negative or neutral coronavirus front pages, it may be suggested to mind the effect of (public) language in further studies-taking into account, of course, that a third factor.

Table 2: Public health development and negative coronavirus covers.

| Country | Winter public health compared to spring | Number of weeks of negative coronavirus covers |
|---------|----------------------------------------|-----------------------------------------------|
| AT      | –                                      | 13-14                                         |
| DE      | –                                      | 23-24                                         |
| FR      | o+                                     | 11-15                                         |
| IT      | o                                      | 16                                            |
| PL      | –                                      | 21-24                                         |
| SE      | +                                      | 5                                             |
| UK      | *                                      | 19-20                                         |

*: Better; -: Worse; o: Similar; o+: Slightly better; *: Ambiguous.

Table 3: Public health development and negative coronavirus headlines.

| Country | Winter public health compared to spring | Non-positive coronavirus headlines |
|---------|----------------------------------------|----------------------------------|
| AT      | –                                      | 146-152                          |
| DE      | –                                      | 200-211                          |
| ES      | +                                      | 38-39                            |
| FR      | o+                                     | 112-119                          |
| IT      | o                                      | 18-22                            |
| NL      | +                                      | 22-23                            |
| UK      | *                                      | 116-121                          |

*: Better; -: Worse; o: Similar; o+: Slightly better; *: Ambiguous.
may be the common trigger for both the media picture and the public health situation. It should at any rate be examined more closely if better public health could be supported by a reduction of negative messages or even a spread of positive messages. Weekly news magazines and daily newspapers are just two sources and can thus only serve as indicators. Further studies may take into account the impact of other media sources (TV, radio, and social media) - for example, by having people note down their daily (or weekly) media habits and observe the development of their health.

References

1. Chaudhry R, Dranitsaris G, Mubashir T, Bartoszko J, Riazi S (2020) A country level analysis measuring the impact of government actions, country preparedness and socio-economic factors on COVID-19 mortality and related health outcomes. E Clinical Medicine 25: 100464.

2. Bendavid E, Oh C, Bhattacharya J, Ioannidis JPA (2021) Assessing mandatory stay-at-home and business closure effects on the spread of COVID-19. European Journal of Clinical Investigation 2021: e13484.

3. Jefferson T, Jones MA, Al-Ansary L, Bawazeer GA, Beller EM, et al. (2020) Physical interventions to interrupt or reduce the spread of respiratory viruses. Part 1: Face masks, eye protection and person distancing: Systematic review and meta-analysis. medRxiv 2020.

4. Chu DK, Aki EA, Duda S, Solo K, Yaacob S, et al. (2020) Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: A systematic review and meta-analysis. The Lancet 395: 1973-1987.

5. Li Q, Morimoto K, Kobayashi M, Inagaki H, Katsumata M, et al. (2008) Visiting a forest, but not a city, increases human natural killer activity and expression of anti-cancer proteins. International Journal of Immunopathology and Pharmacology 21: 117-127.

6. Chowdhury MA, Hossein MA, Kashem MA, Shahid MA, Alam A (2020) Immune response in COVID-19: A review. Journal of Infection and Public Health 13: 1619-1629.

7. Akhtar S, Das JK, Ismail T, Wahid M, Saeed W, et al. (2021) Nutritional perspectives for the prevention and mitigation of COVID-19. Nutrition Reviews 79: 289-300.

8. da Silveira MP, da Silva Fagundes KK, Bizuti MR, Starck É, Calciolari Rossi R, et al. (2021) Physical exercise as a tool to help the immune system against COVID-19: An integrative review of the current literature. Clinical and Experimental Medicine 21: 15-28.

9. Hensel A, Bauer R, Heinrich M, Spiegel V, Kayser O, et al. (2020) Challenges at the time of COVID-19: Opportunities and innovations in antivirals from nature. Planta Medica 86: 659-664.

10. Woods J, Hutchinson NT, Powers SK, Roberts WO, Gomez-Cabrera MC, et al. (2020) The COVID-19 pandemic and physical activity. Sports Medicine and Health Science 2: 55-64.

11. Ulrich R (1984) View through a window may influence recovery from surgery. Science 224: 420-421.

12. Colloca L (2017) Nocebo effects can make you feel pain: Negative expectancies derived from features of commercial drugs elicit nocebo effects. Science 358: 44.

13. Stewart M, Loftus S (2018) Sticks and stones: The impact of language in musculoskeletal rehabilitation. Journal of Orthopaedic & Sports Physical Therapy 48: 519-522.

14. Hansen E, Zech N (2019) Nocebo effects and negative suggestions in daily clinical practice - forms, impact and approaches to avoid them. Frontiers in Pharmacology 10: 77.

15. Bernays E (1928) Propaganda. Horace Livelight.

16. Lasswell H (1930) Psychopathology and Politics. University of Chicago Press.

17. Lazarsfeld PF, Merton RK (1948) Mass communication, popular taste, and organized social action. In: L. Bryson, The Communication of Ideas: A Series of Addresses. Harper, 95-118.

18. Chomsky N, Herman E (1988) Manufacturing Consent: The Political Economy of the Mass Media. Pantheon.

19. Tversky A, Kahneman D (1981) The framing of decisions and the psychology of choice. Science 211: 453-458.

20. Bucher T (2018) If...Then: Algorithmic Power and Politics. Oxford University Press.

21. Grzega J (2013) Studies in Europragmatics. Harrassowitz, Wiesbaden.

22. https://ec.europa.eu/eurostat/databrowser/view/demo_r_mwk_ts/default/table?lang=en

23. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/deathsinvolvingcovid19bymonthofregistrationuk

24. https://www.nrscotland.gov.uk/files/statistics/weekly-monthly-births-deaths-data-2020/dec/weekly-december-20-tab-2.xlsx

25. https://ec.europa.eu/eurostat/databrowser/view/demo_r_mwk_ts/default/table?lang=en

26. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Weekly_deaths_11022021-update_REV.xlsx&oldid=515017

27. https://www.euromomo.eu/graphs-and-maps#

28. https://www.ecdc.europa.eu/en/publications-data-data-national-14-day-notification-rate-covid-19

29. https://ourworldindata.org/grapher/weekly-covid-deaths-per-million-people?tab=chart&time=2020-03-15..2020-12-31&country=AUT~DEU~ITA~SWE~GBR

30. https://www.ecdc.europa.eu/en/publications-data/download-data-hospital-and-icu-admission-rates-and-current-occupancy-covid-19

31. https://ourworldindata.org/grapher/current-covid-patients-icu?time=2020-03-15..2020-12-31&country=G-BR~AUT~DEU~FRA~ITA~SWE

32. https://ourworldindata.org/grapher/current-covid-patients-hospital?time=2020-03-15..2020-12-31&country=G-BR~FRA~ITA~SWE~POL

33. https://www.cebmn.net/covid-19/public-health-england-death-data-revised/

34. https://www.lexisnexis.de