Social memory and the knowledge politics of school closures during the COVID-19 pandemic

Pascal Berger

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Introduction[1]

Science communication formed a significant part of the coverage of the COVID-19 pandemic. Historical comparisons with previous pandemics was part of the business. The deadliest pandemic of the 20th century – the influenza pandemic of 1918 – with an estimated 50–100 million victims, was a significant reference in the media discourse early on (Schmitt and Scholz 2020). Even in the years preceding the pandemic, the memory of the so-called "Spanish flu" was repeatedly a topic – for example, on the occasion of the outbreak of the so-called "swine flu" in 2009 (Wewetzer 2009).[2]

This article elaborates a specific form of the mass media remembering of the influenza pandemic of 1918. The hypothesis is that the memory of the influenza pandemic of 1918 functioned as an interpretative framework at the beginning of the COVID-19 pandemic 2020. What is meant by this is that the media provide a rationale for an intervention by drawing on well-proven measures taken in the past. The reference to the influenza pandemic of 1918 had a complexity-reducing effect in the decision-making process under the condition of epistemic uncertainty. I will elaborate this hypothesis using the example of the nationwide school closures in Germany decided on 13 March 2020.

This article draws on memory theories from the social sciences to explore the form of the framework "Spanish Flu" in public discourse. Conceptually, it ties in with Luca Tratschin's (2020) media analysis, likewise based on memory theory, which examined the coverage of the "Spanish flu" in Swiss media between 1993 and 2018.

I will first give a brief chronology of government measures in March 2020 with a focus on school closures. The second section elaborates the significance of studies on the "Spanish flu" in the media discourse on school closures. The third section places these results in a memory-theoretical context: social memory always works selectively. The significance of the "Spanish flu" in the school closure discourse arises from such a selection: it is embedded in broader public health trends of pandemic

[1] The paper was developed in the context of an institute project on the "Knowledge Politics of School Closures" at the Forum Internationale Wissenschaft of the University of Bonn.

[2] In the medical-scientific literature, the neutral term "Influenza Pandemic 1918" seems to dominate, while "Spanish flu" tends to be a term shaped by the media. I will primarily use the neutral term and only make use of the media-influenced term where methodological reasons indicate it, i.e. in the context of mass media use of the term.

preparedness, in which the memory of the 1918 influenza pandemic has shaped the expectation horizon for an upcoming pandemic.

Lockdown

On 23 January 2020, the Chinese government imposed a lockdown on Wuhan province in response to the SARS-CoV-2 outbreak. In late January and throughout February, the virus started spreading in Europe and around the world. On 21 February, the first cities in northern Italy closed schools and businesses, and on 11 March, the central government imposed a lockdown on the entire country. Everything went fast now: Spain went into lockdown on 14 March, France on 16 March. In Germany, between 9 and 22 March, intensifying interventionary measures were announced in rapid succession: assembly bans, the closure of cultural facilities, business closures, border controls, contact restrictions. On 23 March, Germany went into lockdown.

Most of the decisions for nationwide school closures fell into the week between 9 and 15 March, so that schools remained closed almost all over Europe in the following week (UNESCO 2022).[3] The first local school closures in Germany were imposed by the Heinsberg district in North Rhine-Westphalia on 26 February 2020, when the carnival festivities caused a regional Corona outbreak. Other schools also closed over the course of time. Until mid-March, however, it initially remained a local affair. On 11 March 2020, the Federal Minister for Health, Jens Spahn, was still "reluctant" about nationwide closures (Bundesregierung 2020). According to Spahn, the resulting burden of care could lead to a shortage of staff in the medical sector. Since the elderly were the group of people particularly at risk from COVID-19, child care by grandparents posed a risk. Still on 12 March, the Conference of Education Ministers decided that school closures should be decided by the local authorities. On 13 March, the Minister Presidents agreed on nationwide school closures on 16 March. [4]

The "Spanish flu" in the media discourse on school closures

Sebhatu et al. (2020) explain the timing and the international degree of homogeneity in the measures taken by imitation under conditions of uncertainty about the effectiveness of particular measures. Regardless of the question of the validity of the mimicry hypothesis, political decision-making in democracies occurs under the expectation of justifying measures by means of scientific knowledge (Weingart and Lentsch 2008, p. 10). The public discourse unfolded by mass media is important for this, for example, as a political antechamber for gaining acceptance for decisions (Schulz 2011, pp. 32–39). Political action has to take public perception into account – and among the aspects to be taken into account is also the scientific knowledge present in the media (Peters 2009 et al., pp. 36–39).

Scientific studies – alongside official institutes or the personal expertise of scientists – formed part of the pandemic coverage on virus transmission routes, pathogenicity or the effectiveness of measures (see Massarani et al. 2021, pp. 11–12). At the end of February 2020, the only thing that seemed to emerge from the data available up to that point was that COVID-19 is an age-discriminating disease and that children and adolescents, unlike senior citizens, are hardly affected. Their role in the transmission of the infection was not clear, nor was the effect of school closures (Cohen and Kupferschmidt 2020). For its

[3] Italy was often a week or two ahead of the other nations.
[4] A few federal states closed their schools a few days later.

part, as will be shown, the media public has primarily – though not exclusively – argued for the effectiveness of school closures based on studies of the 1918 influenza pandemic.

I conducted keyword-guided research on the media database GENIOS. The keyword combinations used in each case can be seen in the captions of the figures below (cf. Fig. 1 and Fig. 2).[5] For control purposes, I tried out the combinations of "Schulschließungen" (school closures) on the one hand and "Asiatische Grippe" (Asian flu) and "Hong Kong Grippe" (Hong Kong flu) – the other major 20th century influenza pandemics of 1957 and 1968 – on the other in additional search runs (Fig. 2). The survey covered the period between 01.01.2020 and 22.03.2020, i.e. until the announcement of the lockdown in Germany. This made it possible to identify time- and event-specific peaks in reporting and to distil the school closure discourse. The data corpus included all national media represented in GENIOS, from *Tagesspiegel* to *Süddeutsche* and *Welt*. Duplicates in the search results were not excluded. The articles comprising the result pool were selectively examined in detail. The key factors for selection were hints from the title and first impressions that indicate a scientific mode in the discourse on school closures. Cross-checks via LexisNexis as well as via Google could at least confirm the observed general trend. However, the absolute figures should be taken with a grain of salt due to methodological inadequacies.

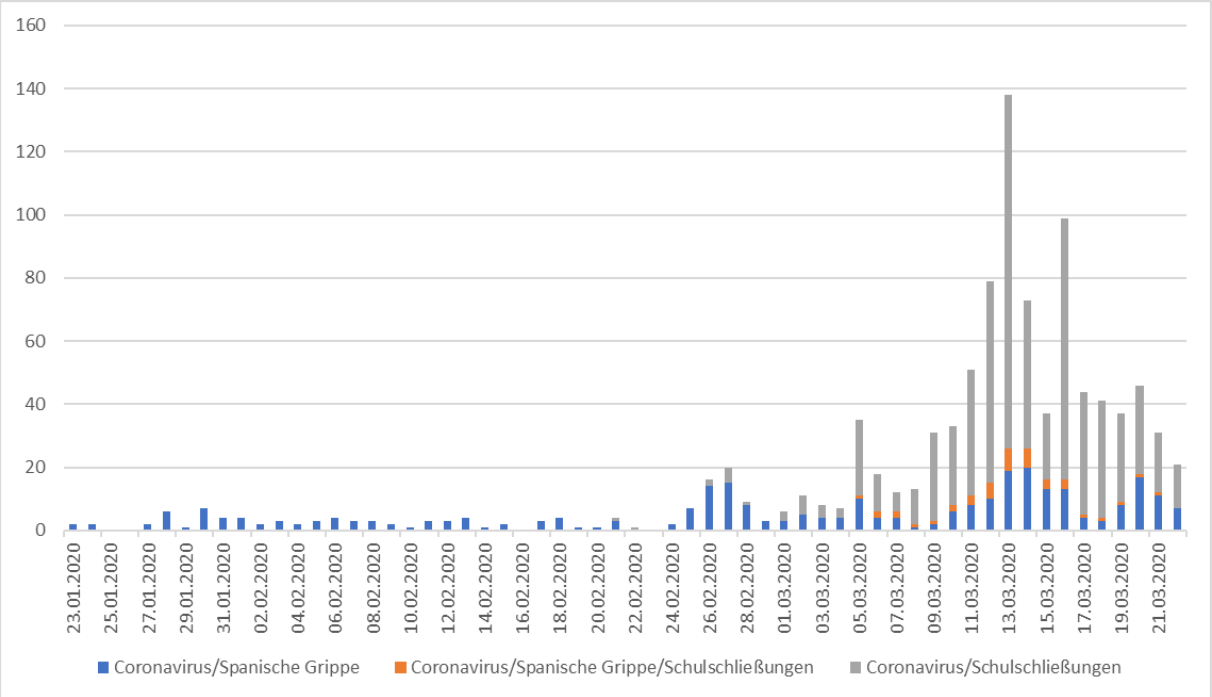

Fig. 1: School closures and "Spanish Flu" in the COVID-19 discourse. The x-axis shows the timeline, the y-axis shows the number of articles.

[5] I used – due to the medium – the term "Spanish flu" throughout the search. See the comments in footnote 2 on page 1.

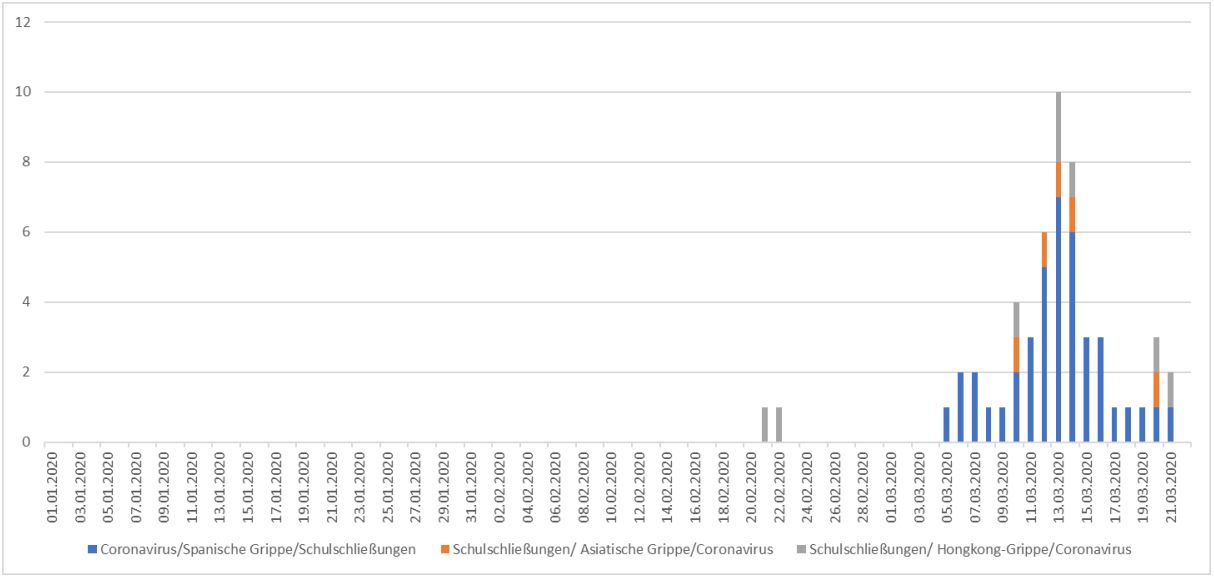

Fig. 2: Pandemics of the 20th Century in the school closure discourse. The x-axis shows the timeline, the y-axis shows the number of articles.

The "Spanish flu" in the media (Fig. 1, blue columns) is not limited to the debate about school closures. Coverage picked it up early on and condensed for the first time towards the end of February: Northern Italy went into lockdown, it was no longer possible to fully trace all chains of infection in the Heinsberg cluster, economic damage was looming. In this context, the "Spanish flu" was a major topic for the first time – as were comparisons with the other pandemics of the 20th century (Braunberger 2020; Spiegel 2020). Another peak occurred around the date of the political decision on school closures. A further, third peak can be observed towards the date of the impending lockdown.

Conversely, the coverage on school closures (Fig. 1, grey columns) does not dissolve into a discourse on the influenza pandemic of 1918. The discourse on school closures picks up speed at the beginning of March and reaches its peak on 13 March, the date of the political decision. The discourse on the "Spanish flu" in the context of school closures occupies a comparatively small space (Fig. 1, orange columns). Thus, the subject matter discussed here is *not* a phenomenon that dominates the public sphere in *quantitative* terms. The significance of the phenomenon can therefore be less quantitative than *qualitative*. The form in which the "Spanish flu" was discussed varied. Sometimes it was solely about the closure of schools, sometimes it was about the more general argument for more comprehensive social distancing in order to reduce infection rates.

Two examples are cited here. One is an example of an article exclusively on the topic of school closures: "It is clear, however, that school closures are effective [...]: for example, studies of the 'Spanish flu', which killed an estimated 50 million people worldwide in 1918, showed that more victims were mourned in regions where schools were not closed or were closed only briefly."[6] (Karberg 2020) Next, an example of school closure in the broader context of social distancing:

> The outbreak of the Spanish flu in 1918 and 1919 is an example of how effective the ban on large gatherings of people is [...]. The authorities in Philadelphia did not take any measures after the first cases [...]. Only after three weeks, when hospitals and medical personnel were already completely overwhelmed, *the administration closed schools*, churches, theatres and other public institutions. In St. Louis, on the other hand, those

[6] My translation.

> in charge acted within two days of the first cases of illness becoming known in the city, thus preventing high death rates. Only after restrictions were eased about a month later did the death toll rise noticeably. (Endt et al. 2020; emphasis added)[7]

The NDR podcast "Coronavirus Update" with virologist Christian Drosten assumes a special role due to its presumable public impact.[8] At the beginning of the pandemic, the science communication format reached an audience in the double-digit millions per episode – comparable to the reach of online media.[9] The media regularly picked up on Drosten's podcast commentaries and thus functioned as amplifiers. In quantitative terms, Drosten received more media attention than all other virologists combined (Maurer et al. 2021, p. 39). Drosten is an internationally renowned specialist for coronaviruses, and also a political advisor and public figure at the same time – in this combination a significant position with regard to the selection and communication of public and thus politically relevant knowledge.

On 11 March 2020, Drosten argued on the NDR podcast that school closures have a comparatively small epidemiological effect (Martini and Drosten 2020a: "We can't do that."). On 12 March, Drosten corrected himself by referring to a study on the 1918 influenza pandemic. He now advocated closing schools (Martini and Drosten 2020b: "And that's something we have to do now."). This was echoed occasionally in the media (Portmann 2020). According to *SPIEGEL* research, Drosten presented the findings on the "Spanish flu" to the Minister Presidents on 13 March 2020. According to his own statement, he proposed a regionally differentiated approach. The political round then gained momentum under the push of the Bavarian Minister President Söder (Großbongardt et al. 2020).

Anyway, the studies on "Spanish flu" discussed in the material available, including the NDR podcast, are limited to three articles. I will come to these three papers below. How exactly the interplay between media, politics and science worked is of secondary importance here. At this point, it was only a matter of carving out the scientific knowledge that was both publicly visible and legitimate.

If the mimicry assumption of Sebhatu et al. is correct, the mobilized scientific knowledge can under certain circumstances only have a legitimizing effect on the inevitable due to the political pressure to act. Without contradicting this thesis, it is possible to examine the question of what one sees when analyzing science communication on school closures with the assumptions of social science memory theory.

Remembering and forgetting

The social science theory of memory centres on the selectivity of remembering and forgetting (Tratschin 2020, p. 307). Remembering provides orientation for action in the present – both in the selection of goals and in the selection of means (Dimbath and Heinlein 2015, p. 171; Sebald et al. 2020, p. 3). Social memory structures are accordingly understood as shaped by their past, which has somehow turned out to be beneficial (Dimbath and Heinlein 2015, p. 168).

Remembering the influenza pandemic of 1918 can accordingly be ascribed the function of preventing a certain future by certain interventions. The fact that the influenza pandemic of 1918, but neither the influenza pandemic of 1957 nor that of 1968 could take over this function must be seen in the context of the development of public health. Since about the 1990s, a trend towards prevention can be observed in the relevant institutions and publications (Rengeling 2017, pp. 309–410).

[7] My translation.
[8] NDR (= Norddeutsche Rundfunk) is a public broadcaster.
[9] The information is based on my own request to the broadcaster NDR.

This corresponds to a visible increase in scientific publications around the 2000s on the topic of pandemic preparedness (Fig. 3). At about the same time, publications on the 1918 influenza pandemic are increasing (Fig. 4).[10] The output on the pandemics of 1957 and 1968 also increases, but is significantly lower in comparison. This corresponds to an interpretation according to which the influenza pandemic of 1918 began to shape scientists' experience and expectations (Rengeling 2017, p. 58). It became an "anchor point" in a "collectively memorized epidemic history" (Rengeling 2017, p. 348).[11] A coming pandemic was expected – but at the same time "every coming pandemic was constructed as a *worst-case scenario*" (Rengeling 2017, pp. 343–344, emphasis in original).

In a special issue of the *American Journal of Public Health* commemorating the 100th anniversary of the 1918 influenza pandemic, the editors write: "After 100 years, the 1918 pandemic remains a defining moment for public health in the United States and indeed the world." (Parmet and Rothstein 2018, p. 1435) The influenza pandemic of 1918 provides guidance for things in medical care that are urgently needed during a pandemic, that might be in short supply or simply not there – and then to work with what you have: non-pharmaceutical intervention measures (Jester et al. 2018). It is against this historical backdrop of preparedness that the studies on the effectiveness of non-pharmaceutical interventions during the influenza pandemic of 1918 should be understood. In short, studies on the 1918 influenza pandemic not only formed a relevant part of research in the context of preparation for a coming pandemic, but they also formed the interpretive framework for what could come.

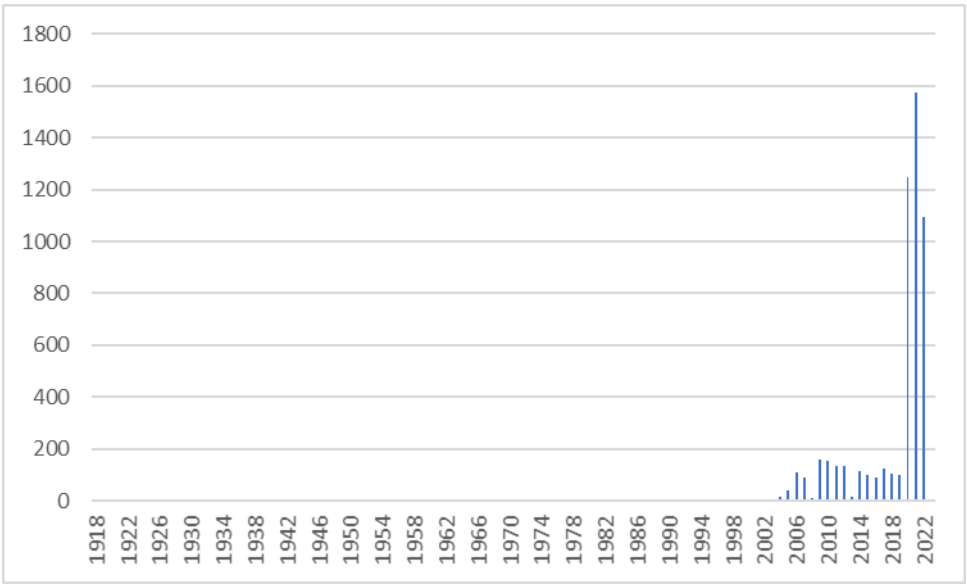

Fig. 3: Number of publications per year for keyword "Pandemic Preparedness" on PubMed. The x-axis shows the timeline (years), the y-axis shows the number of scientific papers.

[10] A similar survey is found in Rengeling 2017, p. 45.
[11] My translation.

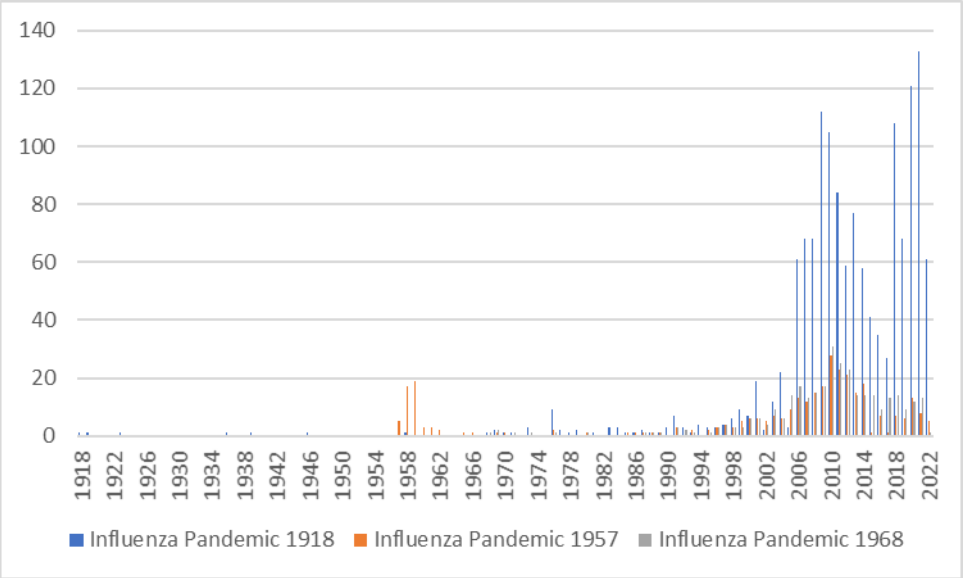

Fig. 4: Number of publications per year for keywords "Influenza Pandemic 1918", "Influenza Pandemic 1957", "Influenza Pandemic 1968" on PubMed. The x-axis shows the timeline (years), the y-axis shows the number of scientific papers.

Forgetting and Prevention

This brings us back to the more recent pandemic past. As mentioned earlier, remembering and forgetting function selectively, and our social orders have a selective-constructive reference to the past. Three studies on the 1918 influenza pandemic dominated the science-public discourse on school closures. I attempted to approximate this form of selectivity through a search on Web of Science, a citation database for scientific literature. I ranked the research literature on school closures during an influenza pandemic published up to and including 2019 by citation frequency.[12] Publications from 2022, 2021 and 2020 are excluded to reproduce the pre-pandemic state of research.[13] Two of three studies discussed in the mass media are marked green in the table. The third paper (Bootsma and Ferguson 2007) is completely missing from the literature corpus.[14] The studies discussed in the mass media, as can be seen, are part of a corpus of the most cited studies. The marking of these studies can be understood as a simplified expression of the selectivity of mass media memory: what has been marked has been remembered, while the vast remainder of the research literature produced to date has not been remembered, but – to use the language of memory theory – forgotten.

[12] For reasons of space, the tabular presentation has been shortened. I used the search terms "school closures" and "pandemic influenza" on Web of Science.

[13] Web of Science can exclude or include publications for certain years, but this does not apply to citations. To exclude distortions in the ranking, I have manually subtracted the citations for the pandemic years 2020–2022 accordingly.

[14] Other search terms would produce different results. "Public Health Measures" and "Pandemic Influenza", for example, would place all three studies discussed in the media among the first 20 most cited articles. However, the search would be less specific.

Table 1: Articles on school closures during an Influenza Pandemic, ordered by citation frequency

Authors	Title	Cited
Ferguson, Neil M. et al.	Strategies for mitigating an influenza pandemic	1.051
Germann, TC et al.	Mitigation strategies for pandemic influenza in the United States	623
Cauchemez, Simon et al.	Estimating the impact of school closure on influenza transmission from Sentinel data	329
Halloran, M. Elizabeth et al.	Modeling targeted layered containment of an influenza pandemic in the United States	329
Shaman, Jeffrey et al.	Absolute Humidity and the Seasonal Onset of Influenza in the Continental United States	270
Stehle, Juliette et al.	High-Resolution Measurements of Face-to-Face Contact Patterns in a Primary School	249
Cauchemez, Simon et al.	Closure of schools during an influenza pandemic	217
Bell, D et al.	Nonpharmaceutical interventions for pandemic influenza, national and community measures	213
Tamerius, James et al.	Global Influenza Seasonality: Reconciling Patterns across Temperate and Tropical Regions	192
Markel, How ard et al.	Nonpharmaceutical interventions implemented by US cities during the 1918-1919 influenza pandemic	166
Cauchemez, Simon et al.	Role of social netw orks in shaping disease transmission during a community outbreak of 2009 H1N1 pandemic influenza	161
Hatchett, Richard J. et al.	Public health interventions and epidemic intensity during the 1918 influenza pandemic	153
Aiello, Allison E. et al.	Mask Use, Hand Hygiene, and Seasonal Influenza-Like Illness among Young Adults: A Randomized Intervention Trial	120
Wu, Joseph T. et al.	School Closure and Mitigation of Pandemic (H1N1) 2009, Hong Kong	116
Aledort, Julia E. et al.	Non-pharmaceutical public health interventions for pandemic influenza: an evaluation of the evidence base	114
Chow ell, Gerardo et al.	Characterizing the Epidemiology of the 2009 Influenza A/H1N1 Pandemic in Mexico	106
degli Atti, Marta Luisa Ciofi et al.	Mitigation Measures for Pandemic Influenza in Italy: An Individual Based Model Considering Different Scenarios	100
Lee, Bruce Y. et al.	Simulating School Closure Strategies to Mitigate an Influenza Epidemic	96
Heymann, A et al.	Influence of school closure on the incidence of viral respiratory diseases among children and on health care utilization	88
Hens, Niel et al.	Estimating the impact of school closure on social mixing behaviour and the transmission of close contact infections in eight European countries	87

However, none of the marked studies is a meta-study. Meta-studies assess the quality of evidence on the effectiveness of specific interventions by comparing different studies. The assessment includes, for example, the method of data collection used to make a statement about a particular intervention effect. In 2019, the WHO conducted a review of the studies on the various measures. In addition to the studies on the 1918 influenza pandemic negotiated in the media, it includes studies on the 1968 and 2009 pandemics as well as on seasonal influenza (World Health Organization 2019a: p. 59). The evidence on the effectiveness of school closures is low, and the studies show a variable impact of closures on virus transmission (World Health Organization 2019b, p. 50). This variability is related to the importance of the right timing and duration of school closures (World Health Organization 2019b, p. 51). Conversely, the potential social and psychological costs for children are high (World Health Organization 2019b, p. 51). For example, the most recent reviews cited in the WHO report, Jackson et al. 2013, could not clearly state whether the incidence reductions were causally or merely correlatively related to the relatively late school closures that followed (Jackson et al. 2013, p. 2). The WHO report is not included in the Web of Science corpus. The Jackson et al. paper only appears in the Web of Science corpus at position 91. An older review on school closures with similar findings (Cauchemez et al. 2009) is ranked seventh in the table. Similarly, the Robert Koch Institute 2016 assessed the effectiveness of the school closure intervention depending on the timing and duration of the measure (Robert Koch Institute 2016, pp. 76–77).

At this point, no empirical judgement is made on the research landscape. Only the argument of selectivity is of relevance here: against the backdrop of the existing body of knowledge, both the political decision and the selection of the knowledge legitimizing the decision could have turned out differently. It is precisely against this backdrop that the selective remembering of the 1918 influenza pandemic fulfilled a function of complexity reduction. This is what I am going to talk about next.

Reducing complexity

The issue of school closures is complex. A supposed plausibility of the effectiveness of school closures born out of the everyday evidence of snuffling toddlers meets a variety of parameters to be considered in the research literature. First of all, the causal effect of the intervention is uncertain. Furthermore, the balance of the benefits of the intervention against the expected social and psychological costs is uncertain.

There are other factors complicating the situation: both the WHO and the RKI recommended school closures conditionally depending on the severity of the pandemic (Robert Koch-Institut 2016, p. 77; World Health Organization 2019b, p. 52).[15] This aspect shifts the uncertainty to the not unpolitical question of when a pandemic is *sufficiently* severe. The influenza pandemic of 1918 claimed 30% of its victims among people under 20 years old. Another 40% occurred in the 20–40 age cohort, and only 5% in the over-65 age group. In the case of COVID-19, the risk stratification is reversed: Less than 1% of all deaths affected people under 20 years of age, while 75% fell into the age cohort over 65 years (Ioannidis 2022, p. 4). This form of age-differentiated risk distribution was known at the end of February 2020 (World Health Organization 2020, pp. 11–12, 31–32). The closure of schools was discussed in March 2020 as a means of protecting others, not as a means of protecting the children themselves. This generated a distribution of costs and benefits differentiated by age groups, although weighing them against each other does not emerge a priori from the facts themselves. It is therefore less about uncertainty in and of itself, but about the negotiation and weighting of multiple uncertainties.

The selective memory of the influenza pandemic of 1918 simplified this consideration of goods. It provided a situational framework that justified the selection of appropriate interventions. Uncertainty is replaced by the robustness of scientific knowledge. As a side note, the Robert Koch Institute's technical statement on school closures from 19 March 2020 – three days *after* they came into force – refers on the one hand to the findings from the interventions during the influenza pandemic of 1918, and on the other hand the epistemic uncertainty about the timing stated in the Institute's own literature review in previous years has almost disappeared (Haas et al. 2020, p. 7).

The COVID-19 pandemic fits into a predefined expectation horizon by triggering the corresponding interpretive framework shaped by the past. Under the condition of contingency caused by multiple uncertainties, collective memory thus provides a significant reduction in complexity. As Luca Tratschin (2020) first postulated, mass media memory has a supporting function for society as a whole. To put it another way: the public-media reception of the influenza pandemic of 1918 at the beginning of the COVID-19 crisis articulated *and* reproduced a predefined social order of public health.

Summary

The analysis dealt with school closures in Germany in March 2020. International homogeneity may be explained by imitation under conditions of uncertainty. However, political interventions are at the same time expected to be scientifically legitimate. Media publicity plays a significant role as a political antechamber for the justification of measures. The empirical analysis of the school closure discourse revealed that the majority of articles did not cite scientific studies. When they did, they argued for school closures primarily by referring to the influenza pandemic of 1918. To explain this selectivity, the analysis went on to draw on social science theories of memory: social memory functions selectively in its reference to the past in order to guide current action. What has worked in the past can provide guidance for the future. The 1918 influenza pandemic acted as an interpretive framework for a possible future pandemic in the evolving field of international pandemic preparedness. The studies negotiated in the public arena of March 2020 were but one slice of a rich body of knowledge on the effectiveness of measures during a pandemic. According to this body of research, the effectiveness of school closures was uncertain. Accordingly, the political decision could have turned out differently. The selective remembering of the influenza pandemic of 1918 in March 2020 was all the more able to reduce the complexity of

[15] The RKI adds: plus an increased infection rate among children compared to adults.

interpreting the situation: it enabled a decision based on scientific knowledge. This functional claim lies beyond the normative or empirical value judgement about the costs and benefits of school closures in March 2020 and thereafter, which cannot be further clarified here. One matter for future research should be the role of experts in the public discourse on school closures. The findings of scientific studies constitute only one aspect of public controversies, which should be complemented by different experts assessing the pros and cons.

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