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Stamping the vaccine passport? Public support for lifting COVID-19 related restrictions for vaccinated citizens in France, Germany, and Sweden ☆

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ABSTRACT

During the COVID-19 pandemic, many countries implemented restrictions to limit the spread of the SARS-CoV-2 virus (e.g. travel restrictions and lockdowns). One path to loosening restrictions is to do so selectively only for vaccinated individuals (e.g. by implementing vaccine passports domestically or as a prerequisite for international travel). Setting different rules based on people's vaccination status is however a contentious issue among health policy experts, government officials, and the public. Our analysis focuses on the levels and correlates of public support for the lifting of restrictions for the vaccinated in April 2021, i.e. at a time when restrictions were in place and a selective lifting of these restrictions just for the vaccinated was debated in Europe. We use representative quota samples of the populations of France (N = 1,752), Germany (N = 1,759), and Sweden (N = 1,754). We find that a slight plurality support lifting restrictions for the vaccinated in France and Germany but not in Sweden. Vaccine hesitancy emerges as strong predictor of opposition to such a policy. Additionally, individuals who are already vaccinated (in France and Germany) and who are higher in risk-seeking express more support for the lifting of restrictions for the vaccinated. We discuss implications for the debate on vaccine passports.

1. Background

At different points during the pandemic, many countries implemented policies to limit the spread of the SARS-CoV-2 virus, including travel restrictions, limits on social gatherings, and "lockdowns". While restrictions have been lifted in most countries such measures may need to be implemented again at some point in the future, especially as questions remain on how long vaccination provides immunity against COVID-19 [8,23] or how they may protect against new variants and lineages [6]. Whatever the course of COVID, understanding public attitudes towards restrictions on citizens' freedom of movement and assembly will be valuable for future pandemics.

One possible path to loosening restrictions during a pandemic is to do so for those who show proof of vaccination status with a dedicated "vaccine passport" [21,29]. This idea is not entirely new; the International Certificate of Vaccination booklet is a common way to document vaccinations. COVID vaccine passports (also referred to as immunization pass or COVID pass, among other terms) are a physical or electronic means of documenting COVID immunizations [20]. Various forms of selectively lifting restrictions for the vaccinated was used during COVID, and could be considered in future pandemics as well. Examples include the use of vaccine passports domestically (e.g., to enter public venues such as restaurants; [31–32]) and as a prerequisite for international travel [10]. Importantly, implementation varied not only across countries but also across time -- individuals in Germany were initially allowed to use a recent negative test result in lieu of a vaccine passport, but later in some situations people were required to show both a vaccine passport and a negative COVID-19 test result [12].

Whether to selectively lift restrictions for the vaccinated represents both a difficult public health question *and* a difficult political

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question. On the public health side, some evidence suggests that the vaccinated are just as capable of spreading COVID-19 as unvaccinated citizens [33], and there are also concerns about how well existing vaccines protect against newer variants or lineages [6]. Mitigating against these concerns is that updated boosters can increase the effectiveness of inoculation, and vaccinated people are less likely to die with or become seriously ill from COVID-19 [27]. Returning rights to citizens on the condition that they get vaccinated can work as an incentive that increases vaccine uptake and in turn public health. At the same time, selective extension of rights may cause concentrated resistance to government policy. When such groups are electorally important, political incentives may conflict with public health goals.

We contribute to the emerging discussion of COVID-19 exit strategies specifically[3,6;14;25;27], and by extension pandemic exit strategies more generally, by examining public support for alleviating restrictions to citizens based on vaccination status. Our surveys were fielded in April 2021 in France, Germany and Sweden. The question of whether, when, and for whom to rollback restrictions was at the forefront of debate in each country[31–32]. These three EU member states represent important variation in COVID-19 responses and levels of vaccine hesitancy. While Sweden's COVID-19 response generally prioritized freedoms over restrictions[18], some restrictions were in place and were initially lifted only for vaccinated individuals [32]. France[31] and Germany [11] also phased lifting of restrictions, giving priority to the vaccinated. When it comes to vaccine attitudes, France has long stood out for its relatively pronounced level of vaccine hesitancy, which is much lower in Sweden and Germany[36]. This variation across cases allows us to evaluate whether the support for lifting restriction varies systematically across cases of high or low levels of vaccine hesitancy, or whenever restrictions are strictly or loosely enforced.

Since not all countries refer to the selective lifting of restrictions as a "vaccine passport", we elected to use a more general wording about the policy. We also examine the association between policy support and self-reported vaccination status, vaccine hesitancy, general risk orientation, and partisan attachment. While our data come from European cases 12–18 months into COVID-19 pandemic (and the specific policies at the time), the broader issues of who is beholden to limitations in both the public and private spheres during a public health crisis caused by a communicable disease also has wider relevance for future variants or other novel viruses.

Highlighting that this issue is both a public health and political problem, we find the public to be divided when it comes to the lifting of restrictions for the vaccinated, albeit slightly more people support this idea in France and in Germany than oppose it. Opposition to the lifting of restrictions only for the vaccinated is slightly greater than support in sweden. We find a large share of respondents – between 26 percent in Germany and 35 percent in Sweden to be undecided. Across countries, respondents lower in vaccine hesitancy and higher in risk acceptance are more apt to support lifting restrictions on the vaccinated. In France and Germany, but not Sweden, those who report being vaccinated exhibit stronger support for lifting restrictions on the vaccinated. While we find some variation between individuals who are attached to different parties, these differences are neither systematic nor robust in alternative model specifications. Thus, at least at the time of our survey, lifting COVID-19 related restrictions was not strongly polarized along partisan lines.

2. Theoretical expectations

We begin by briefly outlining our expectations for the explanatory variables: vaccination status, general vaccination attitudes, and risk acceptance.

Individuals who are vaccinated may no longer perceive themselves as vulnerable *or* as posing a transmission risk to others. As a consequence, the fully vaccinated may feel deserving of additional freedoms (and may additionally see these freedoms as pro-social in terms of helping promote economic activity). If so, we would expect those who have received a jab to support lifting restrictions for the vaccinated. Furthermore, such a result implies that political pressure to lift restrictions could mount as vaccination rates increase.

We expect that vaccine hesitancy will be negatively associated with wanting to lift restrictions *for the vaccinated.* Requiring a vaccination for restrictions to be lifted could be viewed as *de facto* making vaccines mandatory or as a way to restrict the rights of people who choose not to get vaccinated, which we expect the vaccine-hesitant will oppose.[1] That said, the vaccine-hesitant may be supportive of lifting restrictions more generally, or otherwise oppose COVID-19 containment policies.[2]

During a period of "lockdowns" and other strict measures to control the spread of the pandemic, we expect that general risk orientations will be associated with support for a more permissive containment strategy. More specifically, we expect that those who are more risk acceptant to express greater support for lifting restrictions via vaccine passports, whereas the risk averse will prefer keeping restrictions in place. Moreover, given potential uncertainty over how well and how long vaccines protect against COVID-19 [38], the risk averse may want to limit lifting restrictions even for the vaccinated.

We additionally consider partisan attachment for two reasons. First, research finds ideological and partisan divides in many countries when it comes to COVID-19 [2,8,16,19,35]. While politicians and parties on the political right, especially populists, have more typically taken positions against widespread COVID restrictions, the extent to which parties should support or oppose partial lifting of restrictions for ideological reasons is less clear. Second, opposition parties (regardless of their ideological commitments) may have political reasons to support or oppose the (selective) lifting of restrictions depending on the preferences of the governing coalition.

3. Materials and methods

We conducted online surveys using the survey platform Qualtrics in France (N = 1,753; April 7–22, 2021), Germany (N = 1,759; March 29-April 24, 2021), and Sweden (N = 1,756; April 8–23, 2021). The survey sampling (provided by the sampling company Dynata) implemented nationally representative quotas for gender, age, and region. Tables A1-3 in the Appendix provide an overview of the demographics of the three samples. We analyze the data using OLS, with variables described below. (Additional sample and questionnaire details are available in the appendix.).

3.1. Measures

3.1.1. Outcome: Lifting COVID restrictions for vaccinated citizens

To capture whether respondents are *for* or *against* lifting restrictions for vaccinated citizens, we used wording that had been fielded in Germany [9], thereby giving us a reference point. The question (translated from German) asks: "Some people demand

[1] Other explanations for why the vaccine-hesitant may oppose the selective lifting of restrictions include fear of being labelled pariahs for not vaccinating, or not wanting to reward those who – in their view – have unadvisedly accepted vaccination. Our data cannot discriminate between competing interpretations.

[2] Our data do not allow us examine the association between vaccine hesitancy and subtle but important distinctions across these different outcomes.

that current coronavirus related restrictions should be lifted for those who already got vaccinated. Would you support this idea or would you reject it?". We employ a 5-point scale from *'reject strongly'* (1) to *'support strongly'* (5), rather the original two answer categories of support and rejection).

3.1.2. Vaccination status

To test whether the support for lifting restrictions for vaccinated citizens depends on peoples' own vaccination status, we asked respondents whether they have already received a vaccine against the coronavirus. Respondents could respond with *'No'* (0) or *'Yes'* (1).

3.1.3. Vaccine hesitancy

To test the relationship between the support for lifting restrictions for vaccinated citizens and dispositional vaccine hesitancy, we used seven items from the parental perspectives regarding vaccines scale[15,28] plus one novel item. Items were answered on a 5-Point scale from *'strongly disagree'* (1) to *'strongly agree'* (5). The reliability (α) was satisfactory for all three samples (Germany = 0.81, France = 0.75, Sweden = 0.78). Note that we recoded the items in a way that higher scores indicate higher vaccine hesitancy. Attitudes towards vaccines more generally correlate highly with citizens' views of COVID-19 vaccines[17]. We check the robustness of our findings by using feeling thermometer ratings that measure how respondents see COVID-19 vaccines that are approved in the three countries in our sample.

3.1.4. Risk acceptance

To test whether support for lifting restrictions for vaccinated citizens depends on citizens' general acceptance of risk, we asked the following question: "How do you see yourself: are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?". This is one of the well-established measures in the literature on risk taking which is suitable in particular when neither behavioural nor multi-item measures can be employed [14,1]. We instructed respondents to give a value between 0 (*'Not at all willing to take risks'*) and 10 (*'Very willing to take risks'*).

3.1.5. Party attachment

In order to analyze the role of party attachments, we used a standard measure that asks respondents to identify which political party they feel closest to (including an option for not feeling close to any party). In the regression analysis that follows, the reference category in each country are respondents who feel close to the party that leads the government, with indicator variables for those who feel closest to other parties (or no party). To unify the analysis across the three countries, we employ party family categories using expert coding from the Chapel Hill Expert Survey [30]; the categorisation can also be found in the Appendix (Tables A4-6).

3.1.6. Sociodemographics

We include age, gender, and education as additional control variables.

4. Results

Fig. 1 shows the distribution of citizens' views on our outcome variable for each of the three countries in our sample. We find public opinion to be divided: 36% of respondents exhibit support (either "somewhat" or "strongly") for lifting of restrictions in France, 38% in Germany, and 31% in Sweden. When it comes to opposition to the lifting of restrictions, we find 30% of respondents in France oppose the policy (either "somewhat" or "strongly"), 36% in Germany, and 34% on Sweden. A sizeable share of respondents are undecided: 34% in France, 26% in Germany, and 35% in Sweden. As Germany has the lowest proportion of respondents who are undecided, we observe an unusual situation: Germany has the highest share of respondents who *support* the lifting of restriction for the vaccinated, but also the highest share of respondents who *oppose* that policy.

Next, we turn to examining the predictors of support for the lifting of restrictions for the vaccinated. Table 1 shows the results of separate OLS regression models for each country (results are robust among attentive respondents and with ordinal models, see Appendix Tables A7 and A8). Overall, vaccine hesitancy is a strong predictor for citizens' views of vaccine passports. We find individuals who are more vaccine-hesitant are less supportive of lifting restrictions for the vaccinated (this finding is robust to a COVID-vaccine measure in place of general vaccine hesitancy, see Appendix Table A12). This finding is consistent with our expectation. We also find that individuals who are vaccinated exhibit more support for the lifting of restrictions for those who are vaccinated in France and Germany, but not in Sweden. Since COVID-19 restrictions were less constraining in Sweden, it is possible that the potential "reward" of lifting restrictions was not viewed as enticing enough compared to the other two countries. Additionally, individuals who are risk-accepting are more supportive for the lifting of COVID-19 restrictions for the vaccinated.

The party attachment variables in our models, for the most part, are not systematically related with attitudes to vaccine passports. Individuals who are attached to radical left parties show less support for the lifting of restrictions for vaccinated citizens in Germany and Sweden (but not France). However, this pattern is not robust when using an alternative coding that relies on a self-reported measure of respondents' positions on a standard left–right ideology measure. When employing left–right positions (using dummy variables, for coding see Appendix, p.5), we find that citizens who self-report being on the political left support vaccine passports somewhat less in Germany, but we do not observe that those on the far left take positions that are different from those in the centre (see Appendix Table A11 for all results). We also do not find that individuals who support parties that are in opposition rather than in government to exhibit systematically different views than those who are attached to the government, nor do we observe that those who support radical "TAN" (traditional, authoritarian, nationalist) parties (e.g. Rassemblement National, Alternative for Germany, Sweden Democrats; [30]to have distinct views. We return to this in the discussion.

We also do not find statistically significant effects for gender or age. We find that individuals with a medium level of education in Germany show less support for lifting restrictions for the vaccinated than those with a low level of education, but this effect is not robust in alternative model specifications (Appendix Tables A10-A12). Education does not have statistically significant effects in France or Sweden.

5. Discussion

Our analysis reveals that vaccination status, vaccine hesitancy, and risk preferences differentiate those who support lifting restrictions for vaccinated citizens from those who do not. It is noteworthy that these effects are fairly robust across the countries in our sample, with the interesting exception of vaccination status in Sweden. As different countries may chart different paths in this regard, future research should continue to pay attention to cross-country differences.

These results suggest that the unvaccinated are a source of opposition to lifting restrictions for the vaccinated. An implication that policymakers should keep in mind when considering

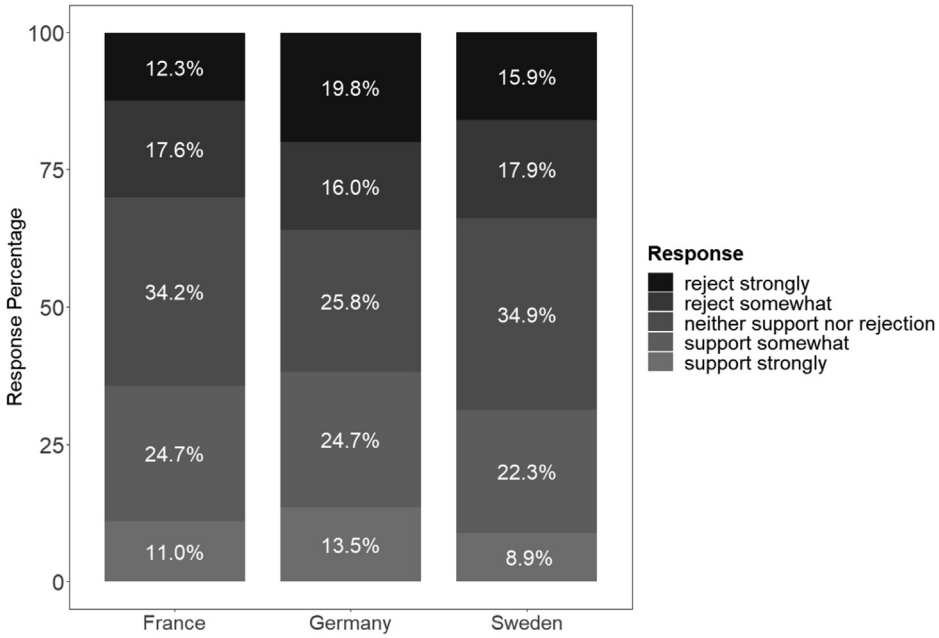

Fig. 1. Support for lifting COVID-19 related restrictions for vaccinated citizens by country.

"vaccine passport" style rules is that support for the lifting of restrictions for the vaccinated is likely to grow as more citizens get vaccinated. However, this does not make these policies risk-free politically. A potentially more persistent source of opposition comes from vaccine-hesitant citizens. While some people hesitant towards COVID-19 vaccination have changed their minds [22], many are also unlikely to change their minds (e.g. because their stance is tied to their identity, anti-science or anti-elite positions; see [25]. Although we see little evidence that partisanship plays a significant role, politicization always remains a risk should some political elites choose to oppose vaccination or vaccine passports. Far right populist elites may try to mobilize supporters by portraying the lifting of restrictions only for the vaccinated as suspending the rights of people who choose not to vaccinate or even as a heavy-handed method to force vaccination. There is suggestive evidence that the same might be true among far left populist parties, though we caution against drawing strong conclusions from these results given the small size of the political parties involved and lack of robustness in alternative model specifications (Table 1 versus Appendix Table A11). Such politicization of vaccination, if it were to occur, could have long-term negative consequences for vaccine uptake more broadly (and may be occurring in the US).

As such, we are reluctant to claim that partisan attachment has no effect on attitudes to lifting COVID restrictions. Previous research has found that the size of partisan differences on COVID- related issues can vary considerably [35,37]. Our claim is appropriately cautious – we do not observe large partisan effects after accounting for our other variables of interest (also see Appendix Table A9).

Partisanship's seemingly negligible role in shaping preferences over lifting restrictions for the vaccinated may be time-bound given the novelty of the debate. Future research should examine more carefully why some COVID issues have stark partisan differences in public opinion, while others do not. Similarly, this research should examine the over-time dynamics to see whether and in what ways issues become politicized over time.

5.1. Limitations

We want to note important limitations of our study. Our measure for public support for lifting restrictions for vaccinated citizens is based on a single question rather than a fine-grained battery of measures. While we believe that the question taps into citizens' general willingness to support or oppose lifting restrictions for vaccinated citizens, opinions may differ on slightly different proposals or with variations in question wording. Other results on this topic show indeed how question wording differences matter[4]and we suggest that future research takes this into account. For instance, a particular restriction might be lifted not just for vaccinated citizens but also for individuals who can present a very recent negative test result (as with Denmark's Coronapas did for COVID-19). Similarly, citizens' views may change as vaccination progress continues, becoming a more tangible scenario for a larger group of people, and as public discourse on the issue becomes more salient.

The correlates of support for lifting COVID-19 restrictions for the vaccinated that we discuss are robust across the three countries in our sample and consistent with theoretical expectations. Nonetheless, our (non-experimental) cross-sectional survey data cannot demonstrate that our variables of interest (vaccination status, vaccine hesitancy, and general risk acceptance) have causal effects on attitudes towards lifting restrictions. While we can likely rule out reverse causality (especially considering our outcome measure was asked *after* the independent variables in our survey), we cannot fully rule out other causal accounts. Observational data may be the best of what is available – manipulating our variables of interest may be difficult (changing risk preference) or unethical (withholding vaccination or inducing vaccine hesitancy). We also cannot rule out that the effects we observe differ in other countries, especially as we observe some differences across the three countries examined here. Future research should assess the broader generalizability of the findings and could take into account additional covariates (e.g. the role of income, which has been found to be relevant for citizens' attitudes towards vaccine passports in the United States [4].

Table 1
Correlates of support for the lifting of COVID-19 related restrictions for vaccinated citizens by country.

	France	Germany	Sweden
Vaccinated	0.309***	0.379***	−0.060
	(0.161, 0.458)	(0.188, 0.571)	(−0.204, 0.085)
Vaccine hesitancy	−0.948***	−1.663***	−0.547***
	(−1.308, −0.589)	(−2.032, −1.295)	(−0.859, −0.234)
Risk acceptance	0.544***	0.809***	0.560***
	(0.286, 0.802)	(0.543, 1.075)	(0.291, 0.829)
Conservative party	0.224		0.114
	(−0.019, 0.466)		(−0.073, 0.302)
Social democratic party	−0.045	−0.019	
	(−0.306, 0.216)	(−0.236, 0.198)	
Green party	−0.182	−0.129	0.304
	(−0.462, 0.098)	(−0.339, 0.082)	(−0.053, 0.660)
Radical TAN party	0.006	−0.204	0.027
	(−0.225, 0.236)	(−0.463, 0.056)	(−0.152, 0.207)
Liberal party	−0.103	−0.061	0.360*
	(−0.533, 0.327)	(−0.368, 0.247)	(0.004, 0.716)
Radical left party	0.077	−0.284*	−0.601***
	(−0.226, 0.379)	(−0.542, −0.025)	(−0.806, −0.396)
Agrarian party			−0.076
			(−0.399, 0.247)
No PID	−0.108	−0.257**	−0.001
	(−0.322, 0.106)	(−0.449, −0.065)	(−0.180, 0.178)
Other Party	0.092	−0.160	0.005
	(−0.180, 0.364)	(−0.537, 0.217)	(−0.449, 0.458)
Gender	−0.046	0.083	−0.101
	(−0.165, 0.073)	(−0.048, 0.214)	(−0.220, 0.019)
Age 35–54	−0.069	−0.060	−0.132
	(−0.219, 0.081)	(−0.238, 0.118)	(−0.287, 0.024)
Age 55+	−0.145	−0.086	−0.118
	(−0.304, 0.014)	(−0.262, 0.090)	(−0.266, 0.030)
Higher secondary education	0.100	−0.163*	0.047
	(−0.085, 0.284)	(−0.319, −0.007)	(−0.156, 0.251)
University education	0.102	−0.154	−0.091
	(−0.081, 0.284)	(−0.352, 0.044)	(−0.313, 0.131)
Intercept	3.056***	3.325***	2.987***
	(2.710, 3.401)	(3.028, 3.623)	(2.682, 3.292)
Observations	1,540	1,564	1,631
R^2	0.068	0.090	0.069
Adjusted R^2	0.058	0.081	0.060

Note: * p <.05, ** p <.01, *** p <.005 (two-sided). Cell entries are OLS coefficients with 95% confidence intervals in brackets. All GVIFs < 2, reference categories: Vaccinated = no, Party Attachment = leading coalition party (LREM in France, CDU in Germany, SAP in Sweden), Gender = male, Age = 18–34, Education = Secondary education/education not completed/no answer. TAN = traditional, authoritarian, nationalistic. All measures on 0–1 scale.

6. Conclusion

Using novel survey data, we find public opinion to be split over the lifting of restrictions for vaccinated citizens. Vaccine hesitancy is a strong predictor of opposition to this policy. Individuals who are already vaccinated and those who are more risk-accepting are more likely to support the lifting of restrictions for the vaccinated (although vaccination status plays no role in Sweden). Support for this policy does not map onto the traditional dimension of party political conflict (after taking the aforementioned variables into account), which is noteworthy given the politicization of many other COVID-19 related issues.

Our findings have both policy and political implications. The first policy implication is fairly straightforward – the share of people that embraces vaccine passports in France and Germany is larger than the share of individuals who opposes them. Both countries differ from Sweden in terms of the restrictions that were in place. An important secondary implication is that the context in which vaccine passports are proposed may be crucial. Our survey was conducted during a period where vaccine passports would generally represent a loosening of restrictions; the public may respond differently to imposing vaccine passports as means to make COVID mitigation policies more restrictive. Judging acceptance of any policy requires taking into account not just the proposal in question, but how that compares to the status quo. Policies deemed acceptable at one point of a public health crisis may not be as readily embraced at other points in time.

Regardless of when they may be implemented, there will be some opponents to vaccine passports. A political implication is that supporting vaccine passports (as a loosening of restrictions) may be relatively easy politically for most politicians. However, for politicians who rely on votes from those who are staunchly against vaccines or pandemic mitigation controls, passports are unlikely to be an acceptable half-way measure. During periods of relatively looser controls and restrictions, implementing vaccine passports is likely to be disfavored by a larger segment of the electorate.

More broadly, the fact that COVID-related opinion does not neatly map onto existing political cleavages suggests that, at least when our surveys were conducted, these issues were not heavily politicized (in contrast to other political environments such as the United States). A further implication is that policy-makers should consider the extent to which new policies have the potential to become politicized – especially along partisan lines. These divisions may be difficult to overcome, and are likely to last.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.vaccine.2022.08.009.

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