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A political psychology of the link between populist beliefs and compliance with COVID-19 containment measures

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This paper addresses the relationship between populist beliefs and compliance with COVID-19 containment measures. We argue that an understanding of this issue depends upon developing a social/political psychology which addresses the impact of social groups and social relations upon behavior. More specifically we propose that populist beliefs are based on the notion that elite authorities are opposed to the people and hence not to be trusted by them which in turn reduces compliance with what they propose. Furthermore, we draw distinctions between different domains of compliance (getting vaccinated, social distancing and complying with "track and trace") and different forms of authority (politicians and scientists). We argue that, whereas loss of trust in politicians only undermines engagement with forms of compliance which involve direct engagement with political authority (i.e., track and trace) loss of trust in scientists undermines the very belief that there is a pandemic and hence reduces all forms of compliance. We use a survey of 321 English and Welsh respondents to address these arguments. The data provide weak support for the hypothesis that populism has an effect on compliance through trust in politicians but only in the case of participating in track and trace. The data provide stronger support for the hypothesis that populism has an effect on all forms of compliance through trust in scientists, but only when scientists are perceived as part of the elite. Over all these results demonstrate that the ability to understand the complex relationships between populist beliefs and compliance depends on developing a social/political psychology of COVID-19 which is able to explain how human behavior is shaped by social identities and social relationships which, in turn, are shaped by political ideologies.

KEYWORDS

COVID-19 pandemic, containment measures, compliance, compliance "fatigue", trust, populism, social identities

Introduction

The COVID-19 pandemic has been the worst health crisis of our generation. Yet the human cost of the pandemic has not been the same in all countries. There are, of course many reasons for this, from the age and health profile of the population to the state of the health service to the nature of the pandemic response. But in this paper, we reflect on, and seek to explain, the fact that political systems and political ideologies played an important role. More specifically, we examine the impact of populism on the levels of compliance of the public with measures to contain the spread of Covid.

There is a wealth of evidence from around the world that points to multiple ways in which populism and the Covid response were intertwined. On the one hand, Covid measures drove support for populist politics (Gherghina and Mişcoiu, 2022; Uluşahin, 2023) and justified withdrawal from conventional politics (Gherghina et al., 2023). On the other hand, populist politics impacted the response to Covid

measures. This is most obvious in terms of compliance with these measures. Barbieri and Bonini (2021) use Italian province level geolocation data to demonstrate less social distancing in provinces that gave high electoral support to populist parties. Ehrke et al. (2023) used data from Germany and Poland to show that populist attitudes lowered compliance by lowering trust in mainstream political and scientific institutions. Charron et al. (2020) used data from 158 regions in 19 European countries to show that, on average, elite-level polarization enhanced by populism predicted higher mortality rates. In the United States, Trump supporters were less likely to comply with social distancing measures and were more hesitant about getting coronavirus vaccines (Gollwitzer et al., 2020; Hornsey et al., 2020). Bayerlein et al. (2021) used econometric models to compare 42 countries from every continent and found that countries governed by populist governments had 8% higher excess mortality rates compared to those ruled by non-populists. This was due in part to the lack of measures to counter the pandemic and in part by lowered efforts by the population to avoid infection. Similarly, Ringe and Rennó (2022) demonstrated the connection between populism and compliance in over 20 countries from around the globe.

So how, and why, does populism impact on population behavior around COVID-19 and upon health outcomes. Our interest is specifically in the psychological processes which translate a populist belief system into behavior during the pandemic—in particular, how it impacts levels of compliance to the measures necessary to limit the spread of infection? These are the questions we address in this paper.

Toward a political psychology of COVID-19

The ability to understand how populism impacts COVID-19 behaviors depends on the broader psychological perspective that is taken on the pandemic. In broad terms one can distinguish two approaches (cf. Reicher and Bauld, 2021; Reicher, 2022). The one starts from the premise that people are "fragile rationalists" who have problems dealing with complexity, probability and uncertainty at the best of times and when put under pressure in a crisis are prone to react in ways that exacerbate the problems (Drury et al., 2020).

This perspective has gained increasing traction in Governments in recent years (Lades and Delaney, 2022) and was particularly apparent during the pandemic—not least because it removes any blame for COVID failures from Government and places it firmly upon the public. They were branded as "Covidiots", subject to "behavioral fatigue" (Conn et al., 2020; Proctor, 2020) and hence unable or unwilling to accept the rigors of complying with COVID regulations. They were threatened and punished in order to bring about compliance (Reicher and Stott, 2020; Mills et al., 2022) and denied support on the grounds that they would simply "game the system" (Woodcock, 2021).

Such an approach—particularly the notion of "behavioral fatigue"—was highly contested from the moment it was articulated on both conceptual and empirical grounds (Abbasi, 2020; Michie and West, 2020). On the one hand, evidence from both other crises (see Drury, 2018, for a review), and from the COVID pandemic (e.g., Duffy and Allington, 2020) shows high levels of mutual support, resilience and adherence to crisis measures, even when they cause considerable hardship. On the other hand, and again drawing on evidence from previous crises as well as COVID itself, there is a wealth of evidence to suggest that, where people fail to comply, it is less to do with psychological weaknesses than other factors such as lowered perceptions of risk (Cowling et al., 2010), distrust in government (Fancourt et al., 2020) and lack of practical support to do what was asked, such as self-isolate at home when infected (Michie et al., 2020; Reicher and Drury, 2021; Huang et al., 2022).

The picture of behavior in crises (including the COVID crisis), then, is one of resilience rather than frailty. When it comes to explaining the basis of that resilience recent research points to the central importance of social identity processes (see Drury, 2018 for an overview of social identity processes in crises; see Reicher et al., 2010 for a general overview of social identity theorizing in psychology). The core argument is that shared experience in a crisis leads to an emergent sense of shared social identity ("we") that usurps personal identity ("I"). Once we think of ourselves and other people as part of a common group, we are more likely to trust, share, cooperate, help and expect help from them. This sense of mutual support in turn empowers people and makes them believe that they can cope with hard times. Resilience, then, is not a quality which inheres in individuals. It is a collective property that emerges between people when they think of themselves and others as members of the same group—and hence can rely on those others.

This second "collective resilience" approach to the psychology of crisis was amply illustrated in the COVID pandemic. As early as April 2020, Jackson and colleagues showed that: "most important to self-reported lockdown compliance was the belief that 'we are all in it together and we all need to come out of it together'—a sense of common fate, a shared identity, and acting for the common or the social good" (Jackson et al., 2020). Since then, a series of studies have shown the impact of social identity at different levels (national, local etc.) upon compliance (see also Van Bavel et al., 2020; for a review, see the special issue of Political Psychology introduced by Muldoon et al., 2021).

It is important, however, to avoid the simplistic conclusion that group processes necessarily lead to compliance in the pandemic. There is evidence that they may be equally important in explaining non-compliance. Thus many people broke the rules out of concern for others they were connected to—relatives, friends, the elderly, the socially isolated, young children—who they felt suffered unduly from lack of social contact (Wright et al., 2020; Burton et al., 2023).

The key point here is that the implications of group processes for any behavior—including compliance to pandemic rules—will depend upon the precise definition of the group identity: the nature of group norms, of group membership, of group boundaries and so on. Most obviously, whether we give and expect help from others, whether we are concerned by their fate, and whether we trust and are guided by others (including authorities) will all depend upon whether they are defined as part of the ingroup or not (Tyler and Blader, 2003; Haslam et al., 2012, 2020).

More generally, the crux of the "collective resilience" approach is that, rather than explain (compliance) behaviors in terms of the (lack of) moral and intellectual qualities of the individual, it addresses them in terms of the way we define our social identities and of our relations to others who do or do not

share those identities with us. Once we make such a "relational shift", we provide a basis for understanding the impact of politics upon behavior, for the nature of social relations—and the way we understand them—is an irreducibly political matter. In this way, a "collective resilience" approach, unlike the fragile rationalist framework, provides the basis for a political psychology of COVID-19.

Social identities, trust, and populism

We have already intimated that social identity is related to trust. We are more likely to trust those who we see as part of our group than those who are not (Tanis and Postmes, 2005; Tyler, 2006), we are more likely to see the information they give us (including criticisms) as designed to benefit us rather than harm us (Hornsey et al., 2002), and hence more likely to be influenced by ingroup members than outgroup members (Turner, 1991). It follows that people should be more likely to trust COVID regulations as being for their own good and to comply with them when they regard the source of these regulations as being representative of and acting for the ingroup.

Certainly there is evidence that trust in Government is associated with compliance to pandemic regulations, both from previous outbreaks (e.g., Prati et al., 2011; van der Weerd et al., 2011; Siegrist and Zingg, 2014) and from COVID-19 (Dohle et al., 2020; Wright et al., 2020; Khokhlova et al., 2021).

There is also evidence that trust in Government (and hence compliance) is related to their ingroup status. Thus, in the UK, groups (such as ethnic minorities) that were less likely to see the Government and/or medical establishment as acting "for us" or being "of us", were less likely to get vaccinated for COVID-19 (Burgess et al., 2021; Figueiredo et al., 2021; Dolby et al., 2022). Moreover, when authorities acted in ways that put their ingroup status in question, this impacted negatively on trust and compliance. So, in the UK, when the Prime Minister's chief advisor, Dominic Cummings, broke regulations against long-distance travel in May 2020 but was nonetheless defended by the PM, this led to a sense of "one law for us" (the public) and "another law for them" (the Government; Jackson et al., 2020). This was associated with a sharp decline in trust and confidence in the UK Government and also a decline in levels of compliance (Fancourt et al., 2020).

However, the impact of such alienation from Government upon compliance was not straightforward. Thus, Jackson and colleagues (2020) found that those who were particularly angry about the "Cummings affair" actually *increased* their compliance to distancing regulations and decreased their acceptance of rule breaking. Arguably, to the extent that these people still believed in the seriousness of the pandemic and that restraint was necessary in order to protect community members, then, as Jackson and colleagues put it, Government became "anti-role models".

This is not to argue that Governmental authorities are irrelevant to compliance but rather that trust in other authorities (medical and scientific) and what they have to say about the risks and mitigations relating to COVID-19 may be just as important. This is supported by studies by Ayalon (2021) and by Pagliaro et al. (2021) which show that trust in science is critical to compliance and indeed people high in trust in science but low in trust in Government adhere as much as those who have trust in both. We should be cautious about generalizing, though. The impact of different forms of trust may depend upon the precise domain of compliance. Thus, having trust in Government may be more critical to compliance in areas where one is being asked to engage directly with Government (say in providing details of one's interactions for contact tracing) than in areas where one is not (say, distancing from others).

Although complex, these various nuances only serve to deepen our appreciation of the link between social identities, trust and compliance. At the same time, they provide the link to understanding how populism may link to pandemic compliance; for populism is a political ideology premised upon an opposition between "ordinary people" and "elites" (Mudde and Rovira Kaltwasser, 2017). To translate this into our social psychological terminology, populism defines social identities such that "elites" are an outgroup to "ordinary people" and indeed stand in opposition to them. Populists contend that these elites repeatedly betray the interests of ordinary people; whether out of incompetence, disinterest, or antagonism or a mixture of all three (Goodwin and Heath, 2016; Gidron and Hall, 2017). People are losing out—they are in decline; and this decline is down to the elites who seek to exploit and control the people rather than represent them (de Witte, 2018).

When it comes to defining who precisely constitutes the elite, populists are somewhat flexible and different populist groups in different countries include (or exclude) different elements. Certainly, conventional politicians as a whole are generally included (as in Trump's vow to drain "the Washington swamp"). Other groups, however, can be included as well, notably and the experts/intellectuals who are held to look down upon and sneer at everyday folk. In his famous text *"Anti-intellectualism in American Life"*, Hofstadter (2012) argues that the idea of the *"omnipotence of the common man"* (p. 34), and hence the resentment of anyone (or any group) who might be held to "know better" was a foundational and indispensable element in the original American populist dream. But the link between populism and anti-intellectualism is not unique to the USA. It can be found in the populist rhetoric of leaders in Russia, Turkey, Hungary and the UK amongst other countries (Szabados, 2019; Mede and Schäfer, 2020).

So, populism serves to position us (as "ordinary people") as in an outgroup and oppositional relationship with "the elite"—and different variants of populism variously include or exclude specific bodies (such as scientists) within that elite. Such a positioning reduces our trust in those bodies and hence reduces our willingness to comply with the COVID-19 rules and regulations they endorse. This, in general terms, is our psychological process account of the relationship between populism and compliance COVID-19 containment measures. This psychological process account of the relationship between elites, populism and social identities, leads to compliance brings us to our precise hypotheses regarding political and scientific authorities and COVID-19 containment measures.

The current study in context

The present study was conducted in the UK in October 2020. Since 2010, the UK (like most countries in Western Europe) has experienced a considerable rise in populist thought and populist political organization (Dzurinda, 2016). This was expressed most clearly in the rise of support for the UK Independence Party (UKIP) and, even more dramatically, the victory of the "leave" camp in the 2016 Brexit referendum (Tournier-Sol, 2021). Since the referendum, UKIP declined then disbanded. But populist politics became, if anything, more powerful, through ever more powerful groupings within the ruling party—the traditionally center-right Conservatives (Foster and Feldman, 2021; Bale, 2023). Indeed, by the time the pandemic began, those who had led the Brexit campaign (Boris Johnson and Dominic Cummings) were in Downing Street as Prime Minister and his Chief Advisor.

As with most right-wing populisms, the UK variant focusses on the "political establishment" as its main antagonist (Vines, 2015). However, it has also included others in the "establishment" outgroup. Famously, during the Brexit campaign, and in response to academic critiques of some of the "Leave" campaign's claims about the impact of the EU on the UK, Michael Gove (a senior Government Minister) asserted that "the people in this country have had enough of experts" (Mance, 2016). But equally, during the pandemic, many on the populist right (including groupings like "UsforThem") claimed that COVID measures represented the capture of policy by the "scientific establishment" against the interests of "the people" (Kingsley, 2023). Indeed, as the pandemic went on, views about science in the UK became increasingly politically polarized—although, absolute levels of support for science and scientists increased (Radrizzani et al., 2023).

The point at which we conducted our study, October 2020, was before vaccines were available, when infections were rising rapidly across the country, when the Government's scientific advisory committee (SAGE) was calling for a short sharp "circuit-breaker" of strong measures to contain the rise in infections but the Government was resisting these calls (UK Parliament, 2021). The question of what COVID-19 regulations should be imposed was therefore highly controversial.

Whereas, as we have shown, there is much work that links populist beliefs to trust and, equally, work that links trust to COVID-19 compliance, we seek to connect these two bodies of research. That is, our survey was designed to address the connections between populist beliefs, trust in authorities and levels of compliance. Accordingly, we included measures to address each of these.

To start with, we operationalised populist beliefs in terms of a divide between "the people" and "elites" such that the elite are seen as an outgroup to the people. We then measured trust in the elite. However, recognizing that there are variants of populism, some of which extend the definition of "the elite" beyond its political core to incorporate scientists, we took measures relating to both types of authority. We also measured how much the scientists were seen as part of the elite. Finally, we looked at compliance with four types of COVID-19 mitigations—getting vaccinated, wearing masks, distancing and providing information for the purposes of tracing contacts of infected people. Drawing on the arguments developed above, we make the following hypotheses about the connections between these variables.

First, we propose that populist beliefs about the elite as an outgroup will impact on compliance behaviors through their effects on trust in politicians. More precisely:

- **H1a** There will be an indirect effect of populist beliefs in decreasing compliance through decreasing trust in politicians.
- **H1b** This effect will be greater for forms of compliance that involve engagement with political authority (e.g., complying with the "track and trace" system).

Second, we propose that populist beliefs will impact on compliance behaviors through their effects on trust in scientists, but only where scientists are seen as part of an outgroup elite. More precisely:

- **H2a** There will be an indirect effect of populist beliefs in decreasing compliance through decreasing trust in scientists.
- **H2b** This effect will be moderated by whether or not scientists are seen as part of "the elite".

Method

Participants and design

An *a priori* power analysis was conducted using G*Power version 3.1.9.4 (Faul et al., 2007) to determine the minimum sample size required to test the study hypotheses. Results indicated the required sample size to achieve 80% power for detecting a medium effect, at a significance criterion of $\alpha = 0.05$, was $N = 311$ for a linear multiple regression. Three hundred twenty-one (321) UK residents from England and Wales were recruited through Prolific to take part in the online study. In total five participants who failed at least three of the five attention checks or completed the survey under 3 min were excluded. From the remaining 316 participants 94 were male, 217 were female, and five were non-binary. Participant age ranged from 18 to 81 years (M= 35.83, SD= 13.30; 10 participants did not report their age). The summary statistics can be found in Table 1.

Procedure

The participants took part in a survey programmed in Qualtrics and were recruited via a Prolific advert to take part in the online survey study on 16 October 2020. The survey took ∼10 min to complete. Before completing the study, all participants read an information page and gave their consent to participate. After completion of the questionnaire, participants filled in their demographic information and received debriefing information. All participants who gave consent and participated in the study were reimbursed £2.50 through the Prolific platform. Once the study went online, it took ∼1 h to reach the sample size of 321.

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TABLE 1 Demographic information (16 October 2020).

Variable	*N*	%	Mean	S.D.
Gender				
Male	94	29.7		
Female	217	68.7		
Non-Binary	5	1.6		
Age			35.83	13.30
Level of Education				
Less than high school	10	3.2		
High school graduate	53	16.8		
Some college	72	22.8		
2-year degree	23	7.3		
4-year degree	95	30.1		
Professional degree	55	17.4		
Doctorate	8	2.5		
Employment Status				
Full-time	116	44.8		
Part-time	75	16.2		
Unemployed looking for work	33	6.7		
Unemployed not looking for work	25	5.7		
Retired	13	2.9		
Student	43	22.9		
Disabled	11	3.5		
Nationality				
British	235	74.4		
English	79	25.0		
Welsh	2	0.6		
Political Orientation			3.14	1.34
Left 1	33	10.4		
2	86	27.2		
3	64	20.3		
Center 4	80	25.3		
5	42	13.3		
6	8	2.5		
Right 7	2	0.6		
Vote in E.U. referendum				
Leave	70	22.2		
Remain	180	57.0		
Did not vote	65	20.6		
Vote in 2019 General Election				
Conservative	71	22.5		
Labor	149	47.2		
Liberal Democrats	29	9.2		
Other	19	6.0		
Did not vote	47	14.9		

Variables:[1]

Unless stated otherwise, all items were measured on a 7-point scale 1 = lowest to 7 = highest.

Populist beliefs (α =0.806 M=5.18, SD: 0.97): the items on this six-item scale were developed by the authors and were based on the definition of populist beliefs outlined in the introduction. They measured how much participants thought that British society was divided between "the elite" and "ordinary people" and how much they felt ignored by the elite (e.g., politicians) in the country (e.g., "Britain is divided into two: "the elite" and ordinary people.", "Politicians only pretend to listen to ordinary people when it is election time.").

Trust in politicians: (α = 0.70ı, *M* = 3.08, *SD* = 1.24): this three-item scale was adapted from the trust in politicians and science scale used by Dohle, Wingen, and Schreiber (Dohle et al., 2020) (e.g., "I can trust the information provided the British politicians.")

Scientists as Part of "the elite": (α = 0.64ı, *M* =3.2, *SD* = 1.05): the items on this three-item scale were developed by the authors and assessed the extent to which scientists were seen as part of "the elite" (e.g., "Scientists are part of 'the elite'").

Trust in scientists: (α = 0.82ı, *M* = 4.3, *SD* = 0.90): this three-item scale was also adapted from Dohle, Wingen and Schrreiber's (2020) trust in politicians and science scale (e.g., "I can trust the coronavirus related information provided by scientists in Britain").

Vaccination intentions (*M* = 5.1, *SD* = 2.3): a single item measure, developed by the authors, of the intention to get vaccinated when one became available ("Getting the vaccine for coronavirus if one becomes available").

Mask wearing (*M* = 6.6, *SD* = 0.8): a single item measure, developed by the authors, of the frequency of wearing facemasks ("Wearing facemasks when entering enclosed spaces (e.g. shops, supermarkets, museums, hair salons etc.)").

Social distancing (α = 0.87ı, *M* =5.9, *SD* = 0.92): the items on this five-item scale were developed by the authors and assessed the frequency of compliance with social distancing regulations (e.g. "Avoiding physical contact with people").

Compliance with track and trace (α = 0.74ı, *M* = 5.2, *SD* = 1.9): the items on this three-item scale were developed by the authors and assessed the frequency of compliance with rules concerning the "track and trace" system [e.g. "Allowing the government to track my location (to track and trace)"].

Results

We present the results of the study in two sections. The first section provides preliminary analyses on (a) the impact of demographic factors on our variables, and (b) the structure of compliance behaviors. The second section provides the main analyses relating to our hypotheses.

1 This study was part of a more extensive survey conducted for a PhD thesis. This means that there were other variables measured during this study which were not included in the list of variables because they were not relevant to this analysis.

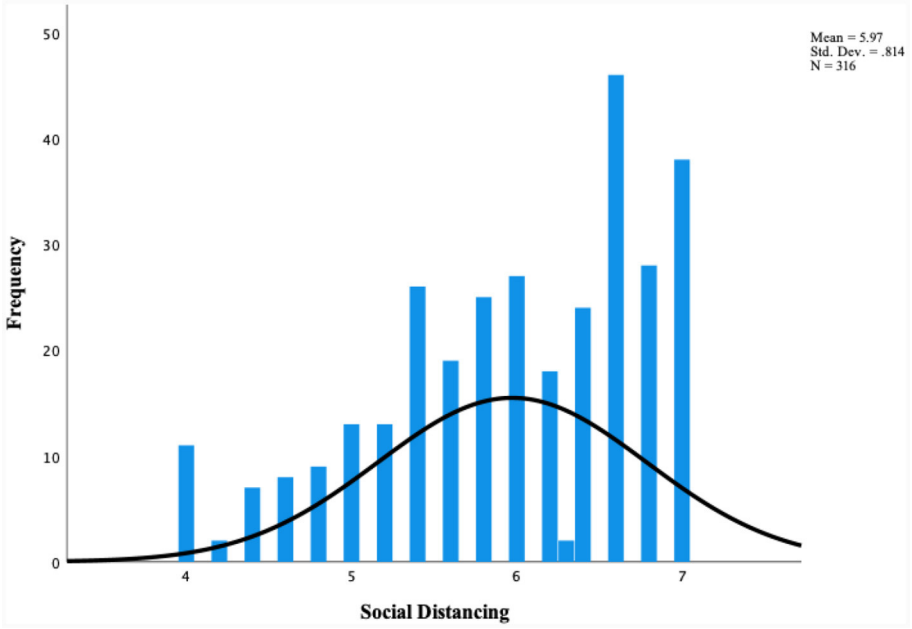

FIGURE 1
Histogram of the compliance to social distancing measure after Winsoring method has been applied.

Preliminary analyses

Impact of demographic factors

We conducted MANOVAs with each of the demographic variables of gender, education, employment, nationality, ethnicity, vote in the EU referendum and vote in the 2019 general election as fixed factors and populist beliefs, trust in politicians, scientists as part of "the elite", trust in scientists, trust in traditional media, intention to get vaccinated, mask wearing, compliance to social distancing, compliance with track and trace as dependent variables. MANOVA revealed a significant effect of gender [Wilk's lambada = 0.87, $F_{(22,600)} = 2.01$, $p = 0.45$, $\eta^2_{partial} = 0.05$]; employment [Wilk's lambada = 0.63, $F_{(66,1,806)} = 2.20$, $p < 01$, $\eta^2_{partial} = 0.08$]; vote in the EU referendum [Wilk's lambada = 0.82, $F_{(22,600)} = 2.93$, $p < 01$, $\eta^2_{partial} = 0.10$]; vote in the 2019 general election [Wilk's lambada = 0.67, $F_{(44,1,138)} = 2.89$, $p < 01$, $\eta^2_{partial} = 0.10$]. There was no effect on the remaining variables. Accordingly, age, gender, education, employment, political orientation, vote in the EU referendum and vote in the 2019 general election were added as covariates in all of our main analyses.

Structure of compliance behaviors

The four scales addressing the various dimensions of COVID-19 compliance (vaccination intentions, mask wearing, social distancing, track and trace) contained 14 items. In the case of wearing masks and intention to get vaccinated, these are specific behaviors/behavioral intentions which were measured by a single item and hence we made an initial decision to include these items in our subsequent analyses. In the case of social distancing and test and trace, these were domains of behavior measured by multiple items.

We started the analysis by checking on the distribution of the variables to test violations of normality. Mask wearing was both a single-item measure and highly skewed distribution (with 79% of the responses falling at the top of the scale, and 93% responding with a 6 or 7 on the 7-point scale). This was un-correctable skew of 3.7, and in effect restricted the empirical range of the scale. We therefore dropped this item from subsequent analysis.

Intention to get vaccinated also showed some skew here (with a spike of compliance at the top of the scale). However, this was not as drastic and was balanced by a spread of scores across the full range of the scale. The measured skew of this item was $< +/-1$ (-0.83). On balance, therefore, we kept this variable in the analysis.

Social distancing and compliance with track and trace both showed some small visual indication of skew. In the case of compliance with track and trace, the effect arose from a response spike at the top of the scale (full adherence), but this did not exceed a third of the responses, and the rest of the responses were spread across the rest of the scale. The absolute skew of this variable was just under 1 (-0.97), which is generally considered to be in the safe range. However, the social distancing measure had a skew of -1.3. Visually the distribution looked quite normal over the range 4–7, but had a small number of cases (3%) in the tail that might have been considered outliers. Since we could not be sure if they were outliers or a skewed tail, we used the Winsoring method to address this and recoded the 3% of values <4 to be 4. This reduced any impact of skew or potential outliers, while keeping the interpretation of the scale the same (see Figure 1).

The final scale characteristics of all our measures put them within the range where correlation-based analyses have been found to be robust, and therefore a parametric analysis is appropriate (Havlicek and Peterson, 1976; Norman, 2010). We therefore conducted a principal axis exploratory factor analysis (EFA) to

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TABLE 2 Factor loadings after rotation for compliance items.

	Factor Loadings	
	1	2
Factor 1: compliance to social distancing		
2. Avoiding crowded public places.	**0.76**	0.15
3. Keeping a distance of at least 2 meters (6 and a half ft) from others when I am inside places.	**0.78**	0.26
4. Avoiding unnecessary travel.	**0.73**	0.22
7. Refraining from visiting other households.	**0.73**	0.22
8. Avoiding physical contact with people.	**0.80**	0.21
Factor 2: compliance with track and trace		
5. Self-isolating as soon as they experience any of the symptoms associated with COVID-19.	0.25	**0.64**
9.Reporting COVID-19 symptoms to the government if I had them (to track and trace)	0.16	**0.87**
10. Allowing the government to track my location (to track and trace)	0.27	**0.58**
Items that did not load significantly on any of the factors with Eigen values above 1		
12. Donating plasma in the case that I get sick and recover from COVID-19	0.03	0.42
13. Informing the authorities if I see others breaking the rules to fight COVID-19	0.27	0.47
1. Keeping good personal hygiene habits (e.g., washing hands frequently, using hand sanitizer when outside).	0.45	0.28

The bold values signify that the items factor loading value is higher than the criterion value of 0.5.

examine whether the remaining items fell separately into the scale dimensions that we expected.

First, the factorability of the 12 compliance items (excluding mask wearing and vaccination intentions) was examined. All items met our criteria for inclusion (measure of sampling adequacy (MSA) above 0.6 and significant Bartlett's sphericity test), with the exception of one ("*Holding or attending celebrations (such as parties) where it is difficult to maintain social distancing*"). This item was therefore excluded. Once this was done, the overall Kaiser-Meyer-Olkin measure of sampling adequacy was 0.821 and Bartlett's sphericity test was significant (χ^2 (55) = 1,222.28, $p < 0.05$). Given these overall indicators, factor analysis on the remaining 11 items was deemed suitable.

The analysis produced two factors with an eigenvalue above 1. These explained, respectively, 31.79 % and 14.26% of the variance, and produced a scree plot that also suggested 2 factors. We proceeded with the two-factor solution given the conceptual coherence of these factors and their relevance to our hypotheses (Table 2). The first factor contained five items loading at above the criterion value of 0.5 which all related to the various aspects of distancing behavior and which require little engagement with authority. The second factor contained three items loading at above 0.5 relating to compliance with various aspects of the track and trace system and which all involved engagement with authority. Three items loaded on neither factor at the criterion value of 0.5 and were therefore also excluded from further analysis.

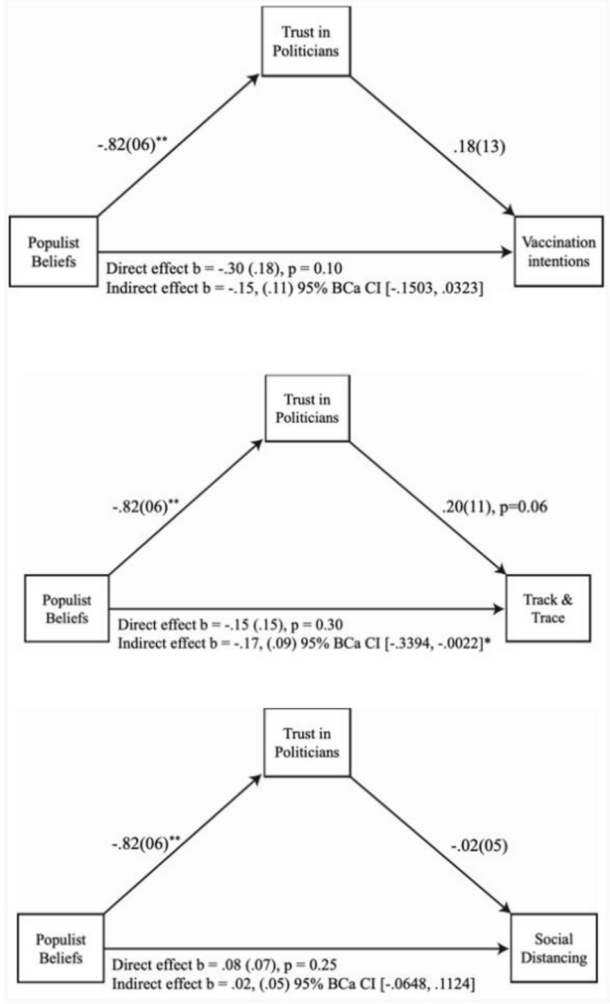

FIGURE 2
Mediation path model with populist beliefs as X and trust in politicians as M.

For the main analyses, we also included our single item measure of intention to get vaccinated given its obvious centrality in debates about pandemic behavior. However, as explained above, we excluded the measure of mask wearing given its un-correctable skew. This gave us a total of three constructs as opposed to the original four. These were social distancing (5 items), track and trace (3 items), vaccination intentions (1 item)—a total of ten items.

We computed the mean scores of the items comprising the multi-item scales and we used Cronbach's alpha to check to indicate internal consistency of these scales (as reported under the Variables Section).

Main analyses

Populist beliefs, trust in politicians, and compliance

In order to address hypotheses 1a and 1b, we conducted separate analyses to test whether populist beliefs impact the four domains of compliance through their effect on trust in politicians.

Accordingly, we used Model 4 of the Process macros (Hayes, 2022) where the predictor variable (X) was populist beliefs, the mediator was trust in politicians (*M*) and the dependent variables (Y) for the respective analyses were intention to get vaccinated, compliance to social distancing and track and trace. The number of bootstraps for each analysis was set to 5,000. Age, gender, education, employment, political orientation, vote in the EU referendum and in the general elections of 2019 were entered as covariates (see Figure 2).

Intention to get vaccinated as the DV: There was no direct of effect of populist beliefs on the intention to get vaccinated $b = -0.30$ (0.18), $p = 0.10$. There was no indirect effect either: $b = -0.15$, (0.11) 95%CI [−0.3619, 0.0775].

Social distancing as the DV: There was no direct effect of populist beliefs on compliance with social distancing methods: $b = 0.08$ (0.07), $p = 0.24$. There was no indirect effect either: $b = 0.02$, (0.05) 95%CI [−0.0648, 0.1124].

Compliance with track and trace as the DV: While there was no direct of effect of populist beliefs on social distancing $b = -0.16$, (0.15), $p = 0.30$, there was a significant indirect effect −0.17, (0.09) 95% CI [−0.3394, −0.0022]. However, the relationship between trust in politicians variable and compliance with track and trace was only marginally significant ($b = 0.21$, (0.11), $p = 0.06$).

Overall, then, the analysis provide weak support for H1a and H1b insofar as we do get marginally significant evidence of an indirect effect of populist beliefs on compliance via trust in politicians (H1a), but the only domain in which this occurs is that requiring the most direct engagement with politicians (track and trace).

Populist beliefs, trust in scientists and compliance

In order to address hypotheses 2a and 2b we again conducted three separate analyses for the three domains of compliance. In each domain we tested a moderated mediation model whereby populist beliefs have an indirect effect on compliance via trust in scientists and the path from populist belief to trust in scientists is moderated by the perception of scientists as part of "the elite".

Accordingly, we used Model 7 of the Process macro (Hayes, 2022) to carry out these moderated mediations. The predictor variable (X) was populist beliefs. The mediator was trust in scientists (*M*) and the continuous moderator (*W*) was seeing scientists as part of "the elite". The dependent variables (*Y*) were intention to get vaccinated, compliance to social distancing and track and trace. The number of bootstraps was set to 5,000. Age, gender, education, employment, political orientation, vote in the EU referendum and in the 2019 general election votes were entered as covariates.

This model explicitly tests the moderating effect on the predictor to mediator path. An index of moderated mediation was used to test the significance of moderated mediation, i.e. the difference of indirect effects between levels of seeing scientists as part of "the elite" (Hayes, 2015). Significant effects were supported by the absence of zero within the confidence intervals. The number of bootstraps was set to 5000.

Seeing scientists as part of "the elite" was found to moderate the effect of populist beliefs on trust in scientists (unstandardized interaction $b = -0.07$, (0.04), $p < 0.05$; see Figure 3). In other words, participants who held populist beliefs were less likely to trust in scientists, and this reduction in trust was greater to the extent that they considered scientists as part of "the elite" (see Figure 4).

Intention to get vaccinated as the DV: There was no direct of effect of populist beliefs on intention to get vaccinated: b = −0.23, (0.15), $p = 0.13$. The overall moderated mediation model was supported with the moderated mediation index b = −0.05 (0.02) 95% CI [−0.0953, −0.0065]. As zero is not within the CI, this indicates a significant moderating effect of seeing scientist being part of "the elite" on the indirect effect via trust in scientists (Hayes, 2015). Populist beliefs had an indirect effect on intention to get vaccinated through trust in scientists at all levels of the moderator. (84^{th} percentile, b = −0.20, (0.06) 95%CI [−0.3250, −0.0801]; 50th percentile, b = −0.15, (0.05) 95%CI [−0.02528, −0.0607];16th percentile, b = −0.11, (0.05) 95%CI [−0.0219, −0.0364]).

Social distancing as the DV: There was a direct of effect of populist beliefs on social distancing: b = 0.16, (0.05), p <0.01. The overall moderated mediation model was supported with the moderated mediation index b = −0.02 (0.01) 95% CI [−0.0330, −0.0019]. As zero is not within the CI, this indicates a significant moderating effect of seeing scientist being part of "the elite" on populist beliefs on the indirect effect via trust in scientists (Hayes, 2015). The conditional effect was strongest in those who had a higher tendency to categorize scientists as part of "the elite" (84th percentile of scientists as part of "the elite", b = −0.07, (0.02) 95%CI [−0.0763, −0.0127]; 50th percentile, b = −0.05, (0.02) 95%CI [−0.0910, −0.0200]; 16th percentile, b = −0.04, (0.02) 95%CI [−0.0763, −0.0127]).

Compliance with track and trace as the DV: There was no direct effect of populist beliefs on the compliance with track and trace: b = −0.17, (0.12), $p = 0.18$. The overall moderated mediation model was supported with the moderated mediation index b = −0.03 (0.02) 95% CI [−0.0758, −0.0046]. As zero is not within the CI, this indicates a significant moderating effect of seeing scientist being part of "the elite" on populist beliefs on the indirect effect via trust in scientists (Hayes, 2015). The conditional effect was strongest in those who had a higher tendency to categorize scientists as part of "the elite" (84th percentile of scientists as part of "the elite", b = −0.14, (0.05) 95%CI [−0.2544, −0.0539]; 50^{th} percentile, b = −0.11, (0.04) 95%CI [−0.1987, −0.0411]; 16^{th} percentile, b = −0.09, (0.04) 95%CI [−0.1625, −0.0264]).

Overall, then, there is consistent support for H2a and H2b across all three domains of compliance. Even though there is only a direct effect of populism on compliance in the case of social distancing, in every domain the moderated mediation model was supported. That is, there is an indirect effect of populist belief on compliance via trust in scientists (H2a) and the path from populist beliefs to trust in scientists is moderated by perception of scientists as part of the elite (H2b).

Discussion

The aim of this study was to investigate the relationship between populist beliefs and compliance to the various types of rule and regulation related to COVID-19. The core of our argument was that populism positions authorities as outgroup thereby lowering trust in them, and that lowered trust in turn decreases compliance.

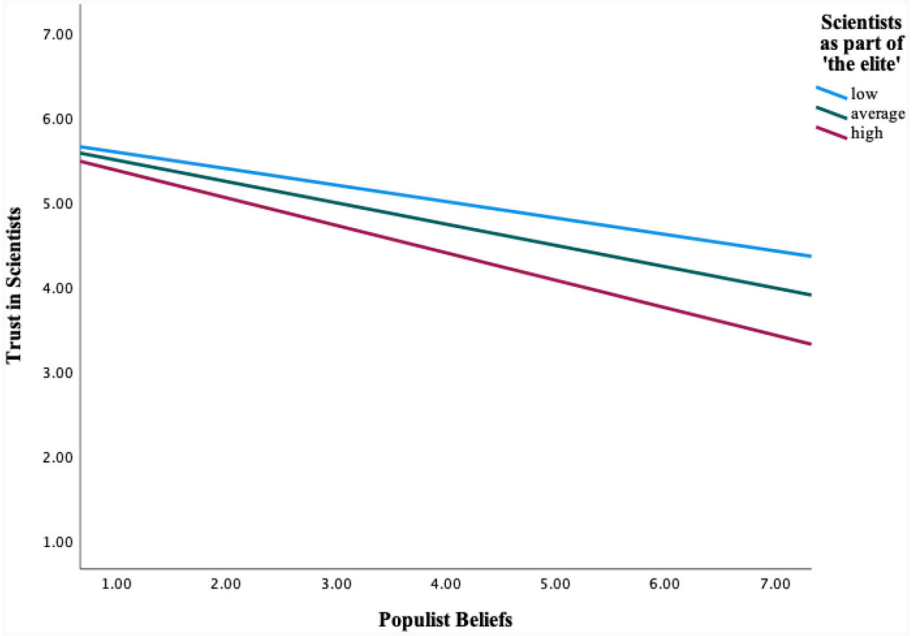

FIGURE 3
Moderation effect of seeing scientists as part of "the elite" on the relationship between populist beliefs and trust in scientists (16th percentile =low, 50th percentile =average, 84th percentile = high).

However, our argument, supported by our findings, is that these relationships are not straightforward and require a more nuanced approach to the core constructs.

First of all, we need to beware of treating compliance with COVID-19 measures as a unitary construct. The factor analysis of different compliance items makes this clear, with no factor accounting for more than a third of the variance and different types of compliance—such as choosing to provide the names of one's contacts to the track and trace system and choosing to keep 2 m distant from others in indoor spaces—being weakly related if at all.

What is more, the antecedents of different types of compliance are themselves very different. What leads people to give information to the track and trace system is different from what leads people to keep their distance from others. One simply cannot talk of the determinants of compliance as if one size fits all. This is certainly true when it comes to the role of trust, and, more specifically, trust in authority, in determining compliance.

A second complexity, then, is that we also need to beware of treating trust in authority as a uni-dimensional construct. We need to consider what type of authority we are talking about, because trust in different types of authority has very different implications for compliance.

In this respect, our findings replicate previous work which shows that trust in scientific authority and trust in political authority impact on compliance in different ways [e.g., Ayalon (2021), Pagliaro et al. (2021)]. This is not just a matter of the strength of the relationship. As in previous work, we generally find that trust in scientists has a greater impact on compliance than trust in politicians. Indeed, we only find a marginal impact, if any, of trust in politicians. It is also a matter of the forms of compliance which are affected. To the extent that trust in political authority has any impact, it is on participation in the track and trace system. By contrast, trust in scientists has an impact on all forms of compliance: getting vaccinated, social distancing as well as participating in "track and trace".

This pattern of findings makes sense if one regards trust less as a general disposition and more as rooted in specific social relationships (Gratz et al., 2021) and if one also regards the relationship between trust and compliance as rooted in the relevance of these relationships to the specific behavior. To be more concrete, trust in politicians may not have a strong effect on compliance in general as long as one still believes that there are real risks from COVID-19 and a need to act to defend oneself and one's community. Indeed, as we argued in the introduction, especially in cases when the politicians who make the rules themselves are seen not to comply with COVID-19 regulation, one may comply in order to differentiate oneself from the rule makers.

The primary areas where we might expect trust in politicians to impact on compliance are those which involve a direct engagement with a political authority in a way that could be used against you. Thus, giving information about one's contacts to the track and trace system is personal and sensitive information that could be misused for the purposes of state surveillance and control. The same is true of vaccine passports (which only became an issue after our study and hence were not addressed here), which were seen by many who distrusted the Government as a "trojan horse" aimed to facilitate the introduction of ID cards and the curtailment of civil liberties (Figueiredo et al., 2021). It is telling that in countries of high trust in Government (such as Denmark), vaccine passports did not arouse such controversies (Drew, 2022).

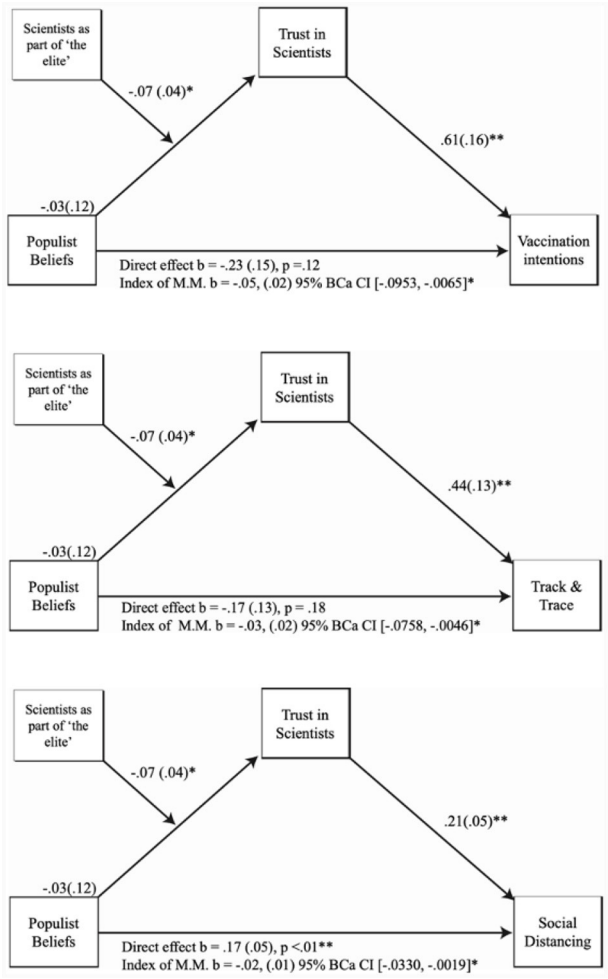

FIGURE 4
Moderated mediation path model with Populist Belief as M trust in scientist as part of "the elite" as W.

By contrast, if one does not have trust in scientists; if one does not believe them when they say there is a dangerous pandemic going on; if one doubts that there is anything to mitigate against; then there is no reason to comply with any mitigation measure, whatever it might be. This explains why, in contrast to trust in politicians, trust in scientists was linked to all of the domains of compliance that we examined.

When we widen our focus to consider the entire argument—considering populism as well as trust and compliance - a third complexity arises. That is, there are different variants of populist ideology which include different constituencies within the outgroup elite and hence with different implications for trust and compliance. To recap our argument from the introduction, whereas a core aspect of all populist belief is that politicians (at least those from established parties) form part of "the elite" and hence are not to be trusted (Mudde, 2004); there is less unanimity as to who else is part of the elite: does it include professionals, business leaders, cultural leaders; and, most relevant to the present discussion, does it include scientists? Are scientists part of "the people" or are they outsiders who seek to control us? As our findings show, this question is critical to determining whether or not populist beliefs will lead to distrust in scientists and hence undermine compliance in general.

To put it more technically, the relationship between populist beliefs and compliance is mediated through trust in scientists, and the relationship between populist beliefs and trust in scientists is moderated by the perception of scientists as part of the outgroup elite. Indeed, one of the strongest and most consistent findings in our data is the interaction whereby populist beliefs only lead to lowered trust in scientists when scientists are included as part of this outgroup.

Putting these various points together we can conclude that populist beliefs do indeed have an overall impact on compliance and that this link is achieved through trust in authority. However, we cannot conclude that adopting populist beliefs will have an impact on any particular act of compliance. Whether it does or not will depend on the particular type of populist belief (does it include scientists as part of the elite), the particular type of authority (politicians or scientists) and the particular form of compliance. However, as a corollary, one cannot conclude from a failure to find any link between populism and a particular form of compliance that compliance has nothing to do with populism.

There is one final complexity in the relationship between populism, trust in authority and compliance that we must acknowledge. That is, especially as regards our analyses of the role of trust in scientists, our effects—while clear and consistent—are mostly indirect and we have little indication of direct effects. This suggests that while trust in scientists does indeed play a part in explaining how populism impacts compliance, it is not the only process involved. There must be other processes involved which work in a different way to counter the impact of trust in scientists. We do not know what these are but plainly we have more to do in uncovering the full richness of this populism-compliance relationship.

There are further limitations to our study. Participants were recruited through the online platform Prolific resulting in a relatively small and strongly non-representative sample. Most obviously, our respondents are predominantly female and predominantly left of center, Labor voting and anti-Brexit. This would be a major problem if our aim was to examine the levels of populism, trust, and compliance in the population; but it is not. Rather, as political psychologists our focus is on the general relationship between variables. Even when we control for gender and political orientation, amongst other things, the relationships we have described above still hold, showing that these cannot be reduced to these demographic variables (which is not to say that demographic variables, such as political orientation don't matter and don't impact populist beliefs, trust, and compliance; but rather that this is not the focus of our argument).

Nonetheless, we still need to be cautious about making general claims from such a skewed sample. In particular, there is an issue in studying the impact of populist beliefs in a sample where populists are likely to be severely under-represented (given that, in the UK, and the West more generally), populist positions are generally associated with right-wing politics (Markovits and Van Dyck, (n.d.)). Having said that, one might expect that a sample which under-represents populists would thereby under-represent the impact of populist beliefs on trust and compliance. This makes the

fact that we have found clear relationships all the more telling and suggests that, if anything, the links we have found would be stronger in a more representative sample. Nonetheless, there is a clear need to do more research involving larger representative samples.

Additionally, we need to exercise some caution in our claims due to the nature of our measures. Most obviously, our measure of mask-wearing had to be dropped due to its un-correctable skew and the others retained some level of skew even though this was within limits considered safe for the analyses we conducted. However, for the future we need to consider alternative measures of compliance. This is not just a matter of devising and validating more scale items. It is also a matter of going beyond self-report measures which inevitably raise the issue of whether what people say they (will) do is what they actually (will) do.

People with strong populist beliefs may well say they don't comply but do they break the rules when push comes to shove? Equally, people who reject populism may well claim that they obey the rules, but are they so conscientious in reality. Certainly, there is evidence that self-reports of COVID-19 compliance do not always match observations of actual behavior (Davies et al., 2022). However, it is difficult to see how such discrepancies alone could explain the nuanced pattern of relationships that we have described. However, once again, future research would benefit by addressing this issue.

Finally, the present research was conducted at one moment in time (early on in the pandemic (October, 2020): before we had vaccines and when there was widespread alarm at the rise in cases as we were going into winter) and in just one country, the UK. The fact that we only collected data at one time point means that it is impossible to make causal claims about relationships between variables or to investigate the mutual influence between populism, trust, and compliance (that is, the possibility that, as well as populism undermining trust and compliance, lowered compliance and lowered trust may increase populist beliefs). However hard it is to conduct, longitudinal research always repays the effort.

The fact that we only collected the data in one place raises questions about its generalizability beyond UK. But once more, it is important to be clear about the focus of our analysis and what claims we are making to generality. In terms of the level of key variables (say how much people embrace populist beliefs, trust politicians, and scientists and comply with COVID measures), we would certainly not expect our findings to generalize and indeed would expect variability across national contexts. Equally, when it comes to certain relationships (say between levels of populism and trust in scientists or between populism and compliance) we would expect national differences because the nature of these relationships depends upon variants of populism which lay more or less claim on scientists as part of "the elite".

In these regards, then, our findings very much reflect the specific political context in the UK—both the moderate strength of populism in the political system and the extent to which British populists have characterized scientists as part of the elite. However, at another level we are suggesting a generality of process; most importantly, that where a particular authority is positioned as part of the elite outgroup, people will lose trust in it and cease complying with it. Of course, we need further studies across a range of contexts to validate this. For now, it remains more a suggestion to guide research than a claim from research.

Conclusion

Even with all these various limitations and caveats, our study does point to three broad and important conclusions. First and foremost, our findings confirm the fact that there is a link between populism and compliance and that the link is at least partly to do with the way that populism defines our identities in such a way that certain authorities are positioned as outgroups; hence leading us lose trust in them.

Second, they indicate that we need a more differentiated understanding of all of our key terms—compliance, trust in authority and populist beliefs—if we are to understand the complex patterning of behavior. To ask about the psychology of compliance, the impact of trust in authority or of populism in general terms is to ask the wrong question and, as a consequence, the attempt to find an answer is bound to fail.

Third, and last (but very definitely not least), the ability to understand the complex relationships between populist beliefs and compliance depends on developing a social/political psychology of COVID-19 which is able to explain how human behavior is shaped by social identities and social relationships which in turn are shaped by political ideologies and practices. That, for us, is the most important thing we have sought to do in this paper.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by School of Psychology and Neuroscience Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

YU: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Visualization, Writing—original draft. KM: Writing—review and editing. SR: Conceptualization, Methodology, Supervision, Writing—review and editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2024.1279798/full#supplementary-material

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