

COMMENT

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Lessons from Brexit

Britain's vote to leave the European Union is jeopardizing scientists' funds, collaborations, staff and students; it has left the nation reeling and Europe vulnerable. These schismatic times have researchers worldwide soul-searching over how best to contribute. Five experts offer their reflections.

JOHAN SCHOT Rethink social progress

Director of Science Policy Research Unit, University of Sussex

The popular rebuke to reason that was Britain's vote to leave the European Union is a wake-up call. Our world requires an urgent rethinking of social progress. The

sciences, social sciences and humanities should collaborate and open up their research agendas for public engagement and interdisciplinary dialogue to work towards a diversity of possible solutions to address the troubles of our time.

In the debate about the consequences of Brexit, the EU is often conflated with Europe. But the start of international governance with a strong European outlook came long before — during the nineteenth century — with industrialization and globalization. The EU is hence part of a greater 'Europeanization' process

involving a web of multiple organizations and dependencies. Leaving the EU does not mean leaving Europe.

The deliberations about Europe's future should therefore look more widely to the crucial question of how to organize and manage the international flows of goods, people, information, pandemics and pollution — inevitable in our globalized world.

Many have, rightly, criticized the EU for its technocratic character. Yet this is present in all international organizations — from the United Nations and the Council of Europe to the European Space Agency and ▶

► CERN, Europe's particle-physics lab. These bodies have been built on the belief in the rule of experts — people like us — our rational decision-making and, if we're honest, our preference for avoiding overt political and public deliberation.

It is time to reappraise these axioms of both European and global governance. Current designs reflect the old dream of building a European, or even global, state that would eventually surpass nation-states. Public support for this is clearly faltering: many issues need localized solutions. New constructs for local, national and international governance are needed that combine technocracy and democracy to reduce the democratic deficit of which Brexit is a symptom.

This is crucial if we are to address challenging interconnected issues such as rising inequalities, unemployment, growing migration, climate change, human rights, arms control, cyber-insecurity and terrorism. Brexit must not simply prompt organizations in Europe to engage in yet another round of navel-gazing discussion focused on the future of their own interests, particularly funding and trade.

Instead, we should encourage experimentation with a variety of new democratic models at all levels to create more participative forms of policy-shaping. We should focus less on stimulating research, development and innovation across the board, as if it were all positive. Instead we must open up the debate about how knowledge production contributes to social progress to address the societal and environmental challenges of the twenty-first century.

LEVENTE LITTVAY

Compare populist movements

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The campaign that resulted in Britain voting to leave the EU was a populist appeal to the basest instincts of the economically, socially and culturally disenfranchised, fuelled by misinformation and a dismissal of any sincere debate of the potentially cataclysmic consequences. It follows the rise of populist parties using similar tactics in the 2014 European parliamentary election, and the unstoppable appeal of Donald Trump. We need to improve our

understanding of these convulsions.

Systematic research on populism is still in its infancy. Social scientists are divided even on the definition, and on how it is distinct from more established phenomena such as the radical right, nationalism and xenophobia. Country experts often have good contextual knowledge of relevant cases — from France's Front National on the right, through Greece's Syriza on the left to the ideologically unidentifiable Five Star Movement in Italy. But scholars have only recently started to develop and collect high-quality data that are comparable across countries, such as the rhetoric of party leaders and the attitudes of their supporters. Such information will be crucial to understanding both the causes and the long-term consequences of populism.

In the short term, populist rhetoric may have the positive effect of engaging citizens in the democratic process. But these citizens rarely become informed. Responding to misleading emotional appeals, they can end up voting against their own interests — as with those in some UK regions who voted in droves to quit the union, despite being in receipt of the greatest EU largesse and having the smallest numbers of immigrants. In the longer term, populist politics can increase social polarization, erode trust and be profoundly damaging to society or the economy, as happened in oil-rich Venezuela, which is now practically a failed state.

It is possible that better institutional design and more effective responses to populist rhetoric could mitigate the powerful negative effects of such movements. In the absence of truly comparable data, we cannot yet assess what the most appropriate governance or communication strategies are to counter these politics. We do know what sort of research is needed.

It is crucial to develop measures that can be compared across countries. These should identify politicians who are populists, pinpoint which voters are susceptible and predict their responses to types of counter-messaging. Collection of such data is a resource-intensive task, but necessary to better understand the conditions under which populism rises, to chart whether its effect (even in moderation) is necessarily damaging, and if so, to work out how to defeat it.

In this way, we will be able to explore when and how past instances of populism — which have been studied for decades by Latin American scholars — are applicable today in Europe, the United States and beyond. Such studies will also determine to what extent one populist movement in Europe is analogous to another, even though they are often ideologically very different.

One promising effort is Team Populism (populism.byu.edu). This consortium of

researchers, directed by political scientist Kirk Hawkins at Brigham Young University in Provo, Utah, is working to improve comparative assessments of populism. It brings together researchers from different levels of analysis (individuals, institutions, countries), various methodological convictions (researchers of mass attitudes, behavioural experimentalists, scholars studying politicians and discourse analysts), and different areas of expertise (scholars of the radical right in Europe and the populist left in Latin America). Such endeavours should help us to tackle the alarming kind of politics that led to Brexit.

PETER TURCHIN

Mine the past for patterns

Professor in the departments of ecology and evolutionary biology, anthropology and mathematics, University of Connecticut

Getting people to cooperate in very large groups such as the EU is difficult. Understanding how humans have been able to create cooperative societies is also hard, because we cannot readily run experiments. Nevertheless, much progress can be achieved by taking a scientific approach to analysing historical data.

As an example, the EU's rapid expansion from the original group of 6 states to the current 28 has clearly contributed to its dysfunction. Historians have a name for it: "imperial overstretch" (a classic example is the bloated empire of Alexander the Great, which fragmented soon after his death).

Dysfunction arises because, first, it's easier for six people (or six heads of state) to converge on a mutually agreeable course of action than for 28 to do so. Second, expansion beyond the western European 'core' brought together people, and politicians, from diverse cultures with different values, taking incompatible paths towards cooperation. Such normative and institutional mismatch created extra barriers to collective action.

Would European integration be better served by a more 'modular', step-wise approach? For example, central European countries already have their own 'integration nucleus' — the Visegrad Group of Poland, Hungary, Slovakia and the Czech Republic. Perhaps the EU would work better as a nested set of such groups rather than one large one that relies on informal arrangements between the more powerful states?

Such hypotheses need testing, empirically and systematically — with massive

historical databases that thoroughly sample the historical record (see, for example, the Seshat: Global History Databank; seshatdatabank.info). Here are some of the questions that need to be asked.

What administrative arrangements and political institutions aided cooperation in large empires (which often started as confederations), such as Rome, the Maratha Confederacy on the Indian subcontinent and the United States? What can we learn from the fate of the Habsburg Empire — the previous, failed, attempt at a ‘European Union’, formed through a series of dynastic marriages? Does gradual, incremental construction result in a longer-lasting union? What kind of hierarchy of political units works better: a flat one with a single level, or a nested, multilevel one?

This sort of analytical, predictive history — known as cliodynamics — can inform the design of a better, more cooperative EU (P. Turchin *Nature* 454, 34–35; 2008). But there is a marked tendency among policymakers to deal with the economic and political crises of today as though they were unprecedented, leading them to repeat old mistakes.

The first step should be to invest massively in research on how human cooperation at large social scales has been achieved in the past. We all have a huge stake in European peace, prosperity and collaboration — even those outside Europe. We shouldn’t just leave it to the politicians.

STEVEN J. BRAMS

Offer more voting options

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Of the many things that the United Kingdom’s referendum has demonstrated, one is that voting, even by a plebiscite, need not be so crude. The stark choices offered to UK voters — remain in the EU or leave — belied the complexity of the issues involved. Instead, the British public should have been offered the choice of different levels of partial separation — three, say — bracketed by the two all-or-nothing options, giving them five choices in all.

True, more choices mean that a vote will be more finely divided, allowing one option to win with as little as 21% of the vote instead of the 52% that actually occurred. A system called approval voting obviates this problem, however, by allowing voters to indicate all courses of action they consider acceptable. The one with the greatest number of approvals wins.

The approach tends to find the most acceptable option over all, not the one with the strongest minority support that benefits from a divided field. Typically, the winner is a compromise, which receives support from voters on both sides of the ideological divide. It is one that most voters can live with, even if it is not their first choice.

Unlike voting systems in which voters can rank alternatives, which are used in such countries as Australia and Ireland, approval voting is a grading system — with only two grades (approve or don’t approve). It avoids a serious problem with ranking systems in which there may be a cycle of top choices (majorities prefer A to B, B to C, and C to A); these cyclical majorities leave unclear which alternative should be the winner. Under approval voting, if A beats B, and B beats C, A beats C. So, except for when the result is tied, there is always an alternative that is approved more than any other.

Approval voting is now used to elect officers in several major scientific societies, including the American Mathematical Society and the Mathematical Association of America, each with tens of thousands of members. At my university, this system is used by the politics and economics departments to choose a chair. All tenured professors are candidates; the vote invariably elects candidates who bridge factions in the departments. In the US state of Oregon in 1990, approval voting was used in an advisory referendum on financing education. Voters could choose from five different levels of sales and income taxes, but because it was advisory, no choice was mandated.

If Britain’s exit does precipitate referendums elsewhere in Europe, citizens should be given more than two options. This mimics the multiple choices that members of parliament typically have when they add and remove provisions from bills, promoting compromises. Shouldn’t voters be afforded the same opportunities as their representatives?

SIMON GÄCHTER

Study how groups collaborate

Professor of the psychology of economic decision-making, University of Nottingham

Britain’s decision to quit the EU can be interpreted as scepticism towards deep multilateral cooperation. This raises a

fundamental question for social-science research: under what conditions can groups of people cooperate for the common benefit? So far, behavioural economics has overwhelmingly focused on investigating people’s willingness to pull their weight for the benefit of their group — for example, how fishermen work together to secure the biggest catch for a village. But in a multilateral international cooperation, such as the EU, groups — or nations — work together to secure gains that exceed the possibilities of any individual nation going it alone. European research collaboration and the EU carbon market are prime examples.

Coalitions of diverse groups are necessary to address global challenges, but they are always jeopardized by the free-riding of groups who consider their self-interest — possibly fuelled by strong group identity — to be the only relevant criteria for collective decision-making. Witness the struggle to forge international climate agreements. Strong group identities can help people with a common sense of purpose to cooperate for example, in local communities, companies, universities, army units or sports teams. But such tribalism may undermine teamwork between groups, in particular when the costs of working together seem to be more salient than its benefits — as seems to be increasingly the case with citizens’ views of European cooperation.

New experimental studies should in particular investigate the influence of identity on collaboration within and between groups when collective benefit and self-interest are in tension, or seem to be so.

Urgently needed are good data to validate pundits’ hunches about people’s motivations in voting in the referendum, and how those motives interacted with sociodemographics and social networks on and offline. For example, how important were immigration and identity? Which other considerations mattered for whom, where and why? There is impressionistic evidence about some motives but there are not enough hard data from large-scale representative surveys. These might also include simple behavioural experiments to probe the role of basic behavioural tendencies such as impatience, risk aversion, reciprocity, altruism and trust in strangers.

Answers to these questions are immediately important for evidence-based policy responses in the United Kingdom and in the EU. More broadly, understanding the relative importance of economic, sociological and psychological determinants of people’s propensities to support transnational cooperation is crucial in an age of globalized challenges. ■