Unconscious biological roots of xenophobia and anti-immigration

The Editors

Immigration has become one of the most controversial and vitriolic issues of recent times, whether concerning illegal immigration of Mexicans into the US; economic migrants throughout the European Union; or refugees fleeing starvation or draconian political regimes throughout Africa and the Middle East. Tensions run high with repeated claims that such immigrants represent an uncontrollable tide capable of swamping the country of arrival; that immigrants take peoples' jobs and livelihoods away from them; that they pose a security risk because terrorists hide in their ranks; and that they impose unsustainable strains on health and welfare services. Of course all these arguments – misguided, ignorant or prejudiced though they be – are assumed to be the product of conscious thought processes even if they are motivated by deep-seated fears and even if they are fanned by right-wing reactionary commentators using inflammatory plague-like metaphors: We are being "swamped by a tide" or immigrants are sweeping across borders "like rats and cockroaches", for instance.

Now, three political scientists, Lene Aaroe and Michael Bang Peterson, from Aarhus University, and Kevin Arceneaux from Temple University, have attempted to broaden our understanding of such xenophobia by implicating totally unconscious processes set in train by our immune systems through their links to the brain and behaviour. Their paper is

published in *American Political Science Review* and titled "The Behavioral Immune System Shapes Political Intuitions: Why and How Individual Differences in Disgust Sensitivity Underlie Opposition to Immigration". The full paper is behind a paywall but a pdf of the paper exists in the public realm courtesy of the University of Aarhus. Using population samples from the US and Denmark they present and test, they explain, the way the behavioural immune system (BIS) connects disgust, a powerful basic human emotion, to political attitudes through psychological mechanisms evolved to protect humans from disease. These mechanisms work outside of conscious awareness, they say, and in modern environments they can motivate individuals to avoid intergroup contact by opposing immigration. Specifically, the more sensitive or hyper-vigilant the behavioural immune system is in any individual, the more it will underlie their opposition to immigration.

This is a very controversial area but we think it well worth airing it. Evmedreview invited Riadh Abed, the chairman of the Evolutionary Psychiatry Special Interest Group of the Royal College of Psychiatrists, in the UK, to write a commentary on Aaroe et al's paper, which follows, and we invite all readers to comment on this paper.

Riadh Abed:


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A new and interesting piece of research has been published this month in the influential ***American Political Science Review***. The research adds a further line of enquiry to the troubled and thorny question of attitudes to immigrants and to immigration. It looks at the potentially important but hidden factor that influences peoples' (and politicians') preferences when it comes to formulating or influencing policies dealing with immigration. The main thesis of the article is that the immune system has a behavioural component that aims to prevent exposure to pathogens and importantly this system (the Behavioural Immune System, henceforth BIS) operates entirely outside

conscious awareness. The BIS utilises the emotion of disgust to motivate avoidance of potentially infected objects and people. The system seeks to keep the 'unclean' outgroup members away from the 'clean' ingroup.

Of course, in such politically sensitive research into the presumed biological roots of xenophobia and intolerance, it is important to distinguish at the outset between description and prescription. Also, it is important to be aware of the scope for misunderstanding and misinterpretation of the application of evolutionary principles to ethnic differences given the negative historical legacy of Social Darwinism. The authors were clearly aware of the sensitivities surrounding their research and have given a detailed and cogent explanation of the value of such work.

The ideas and hypotheses they sought to test were not new in themselves. The link between disgust, pathogen avoidance and xenophobia has been known for some time. The evolutionary roots of linking outgroup members to dangerous pathogens most likely relates to the well documented fact that our immune system is most effective against local pathogens rather than exotic ones. One of the best known historical examples of the devastating effects that novel pathogens can have is the fate of the indigenous populations of the New World when invaded by the Spanish Conquistadors (for a detailed description see Jared Diamond's best-seller *Guns, Germs and Steel*).

The authors conducted a meta-analysis of 16 published studies that tackled the issue of pathogen avoidance and attitudes to immigrants and xenophobia in general. Most studies found a positive correlation between disgust, fear of disease and negative attitudes to immigrants but they concluded that the quality of the data was generally unsatisfactory due to a range of flaws in these studies' design. They therefore set out to address these flaws. The study populations were selected from 2 countries namely Denmark and the United States and the study involved both questionnaire and physiological data. Although both countries share a liberal democratic political system there are important differences. The US is a country of immigrants with a high level of diversity and relatively low levels of social

welfare (by western standards) whereas Denmark has a stable and homogeneous population with high levels of social welfare spending which makes immigration particularly costly.

They assumed that the sensitivity of the BIS varies across the population and they tested the hypothesis that individuals with high sensitivity are more opposed to immigration. They also, rather ingeniously, tested the hypothesis as to whether disease protection deactivates the link between anti-immigration attitudes and the BIS.

In answer to their first hypothesis their conclusion was that there was a robust positive relationship between a highly sensitive BIS and opposition to immigration and that this correlation held even after controlling for education and ideology and was evident on both questionnaire and physiological measures. To answer their second hypothesis regarding the possibility of deactivating the link between the BIS and anti-immigrant attitude they used a scenario that either included or didn't include handwashing, with simple handwashing being the disease protection behaviour. Interestingly, the simple addition of handwashing to the scenario appears to attenuate the effect of the BIS and reduce the degree of the subjects' xenophobia. Their conclusion was that the link between disgust and the BIS sensitivity and the anti-immigrant attitudes was not a spurious finding. Their third hypothesis was that cultural familiarity (as a proxy for ingroup membership) would reduce anti-immigrant attitudes and this was indeed supported by their findings.

The authors contend that their study has plugged a gap in the literature by providing high quality data in support of a link between a sensitive BIS (manifested through a high propensity to disgust) and anti-immigrant attitudes and demonstrated that it operates independently of education, income and ideology.

They also point out that the BIS can create obstacles in the face of attempts towards the emergence of tolerance and greater integration of new immigrants.

Can such research make a difference for educators and policy-makers? The authors believe it can but as with many interesting evolutionary findings in the biological and social sciences, such data may be one or two steps removed from practical application. However, if this is a real effect as the authors have contended in this well-designed study, then it would foolish not pay attention to it.