

Revolutionary chefs? Not likely, shows physics research

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However much the likes of Jamie Oliver or Gordon Ramsay might want to shake up our diets, culinary evolution dictates that our cultural cuisines remain little changed as generations move on, shows new research, published today, Thursday, 10 July, 2008, in the Institute of Physics (IOP)'s *New Journal of Physics*.

The research, 'The non-equilibrium nature of culinary evolution', shows that three national cuisines - British, French and Brazilian – are affected by the founder effect which keeps idiosyncratic and nutritionally ambivalent, expensive and sometimes hard to transport ingredients in our diets.

Using the medieval cookery book, *Pleyn Delit*, and three authoritative cook books from Britain, France and Brazil, the *New Penguin Cookery Book*, *Larousse Gastronomique* and *Dona Benta* respectively, the researchers from the University of Sao Paulo, Brazil, compiled statistics which could be compared to see how time and distance effect the three different national cuisines.

Time, the number of ingredients used, the number of recipes published in each cook book and the ratio between the number of ingredients and the number of recipes in the books were used as variables to assess how our diets have evolved.

Three editions of *Dona Benta*, from 1946, 1969 and 2004, were evaluated to see how the Brazilian diet has changed over the past half

century, amidst the change from a regional to a more globalised food consumer profile, and found that the rank and importance of certain idiosyncratic ingredients, such as chayote, an edible plant that is a frequent ingredient in Central and South American diets, remained much the same.

Ranking the importance of certain food types by their frequency of use in each national cuisine and comparing them to ingredients which have an equivalent rank in one of the other two foreign cuisines led to patterns emerging which suggest that all our menus evolve in similar ways.

So, whether it's the Irish with potatoes, the French with frogs' legs, the Germans with sauerkraut, the Ghanaians with plantains or the Japanese with fish stock, it seems a global food culture has not shifted some die-hard culture-based eating habits.

As the authors, from the Department of Physics and Mathematics at Sao Paulo University, write, "Some low fitness ingredients present in the initial recipes have a strong difficulty of being replaced and can even propagate during culinary growth. They are like frozen "cultural" accidents."

Source: Institute of Physics

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