

Why do Western and Asian foods taste different? Study reveals they it's all down to chemistry

- **Researchers analysed 381 ingredients, 1021 'tastes' and 56,498 recipes**
- **Western food seeks out 'food pairs' with matching taste chemicals**
- **Asian foods take opposite approach and avoid 'pairing' ingredients that share flavours**
- **'Could lead to new avenues of understanding food' - researchers**

By [Rob Waugh](#)

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It doesn't take a food expert to say that Western and Asian foods taste different. But it does take an expert to explain why.

The idea of 'food pairing' isn't new - chemically analysing foods to see which flavour compounds they share has led restaurants to pair unlikely foods such as white chocolate and caviar.

But new research - analysing 381 ingredients, 1021 flavour compounds and 56,498 recipes - has found that east Asian food takes an entirely different approach. It actually avoids foods that match.



Pork chops with apple wedges and raisins: Thirteen ingredients - including pork - appear in 74.4 per cent of western cooking



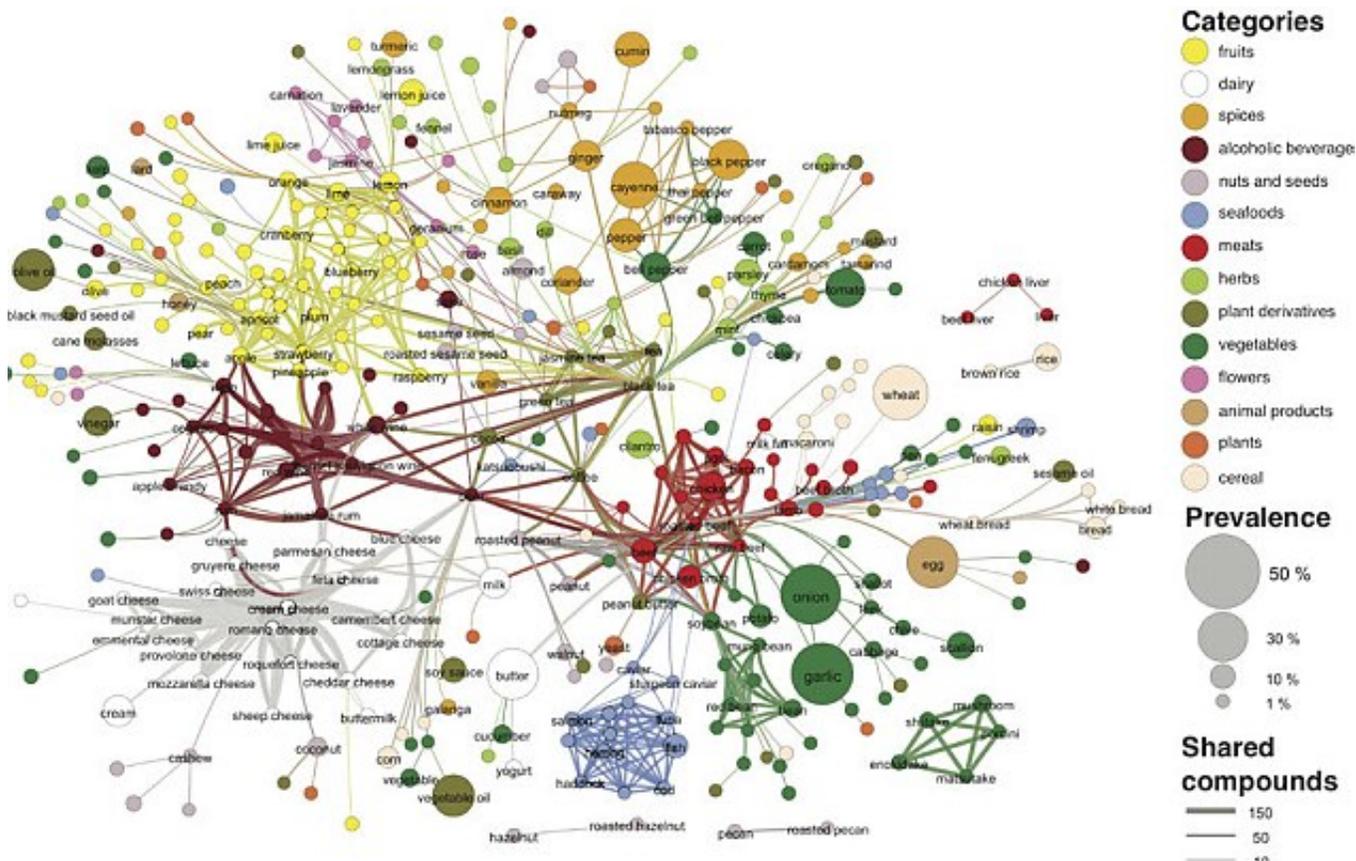
Beef and vegetable stir fry: While east Asian cuisine does have 'defining' flavours such

as garlic and soy sauce, its approach to pairing foods is different

'Flavour pairing' has led to some of the most exciting cooking of the past few years.

But it seems that 'pairing' foods isn't a hard and fast rule - and Western and Asian foods 'pair' flavours in completely different ways.

'Western cuisines tend to use 'pairs' that share many flavours,' say the researchers in a paper published in Nature. 'But east Asian cuisines tend to avoid ingredients that share them. This investigation opens new avenues towards understanding culinary practices.'

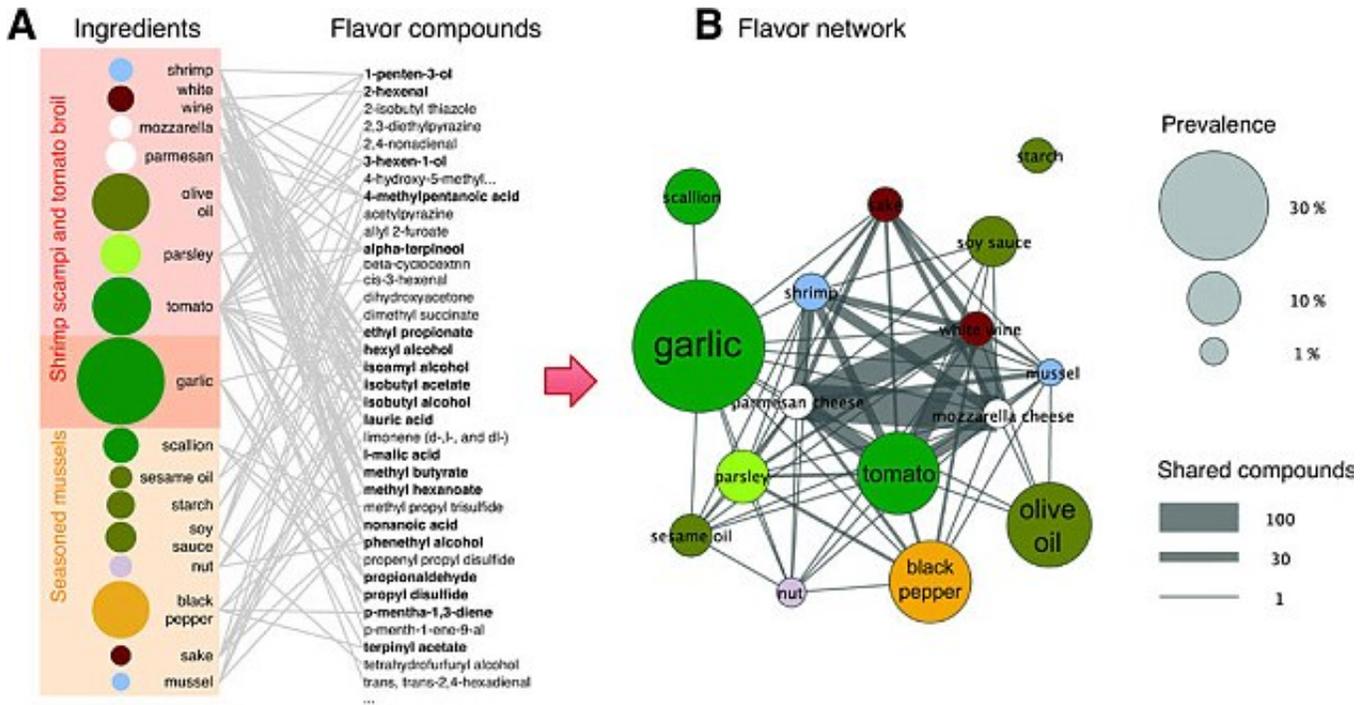


The thickness of the 'cords' connecting the flavours here shows how many flavours they share - Western cuisine is more likely to pair foods that share lots of flavours, whereas east Asian cuisine avoids obvious 'pairs'

This crucial difference in approach explains why food from different sides of the globe tastes so radically different.

Researchers including Sebastian Ahnert from the University of Cambridge analysed 381 ingredients used around the world, and 1021 flavour compounds found in those ingredients - networking them to show how many 'flavours' each ingredient shared.

They then compared the information with 56,498 recipes from Epicurious.com and Allrecipes.com, plus a Korean recipe site menupan.com to see which of five cultures - north American, western European, southern European, Latin and East Asian - paired flavour compounds that 'matched' each other most frequently.



Two recipes analysed: Distinctly 'western' pairings - such as tomato and parmesan cheese - tend to 'pair' foods that have a lot of matching flavour compounds. Eastern matches - such as garlic and sesame oil, don't share as many flavour compounds

'Western cuisines tend to use 'pairs' that share many flavours. But east Asian cuisines tend to avoid ingredients that share them. This opens new avenues towards understanding food,' say the researchers

The results were surprising. North American and western European recipes tend to pair flavours that 'match'. Both southern European and east Asian recipes tend to avoid recipes where the ingredients share flavours. The contrast with east Asian recipes was particularly marked, the researchers found.

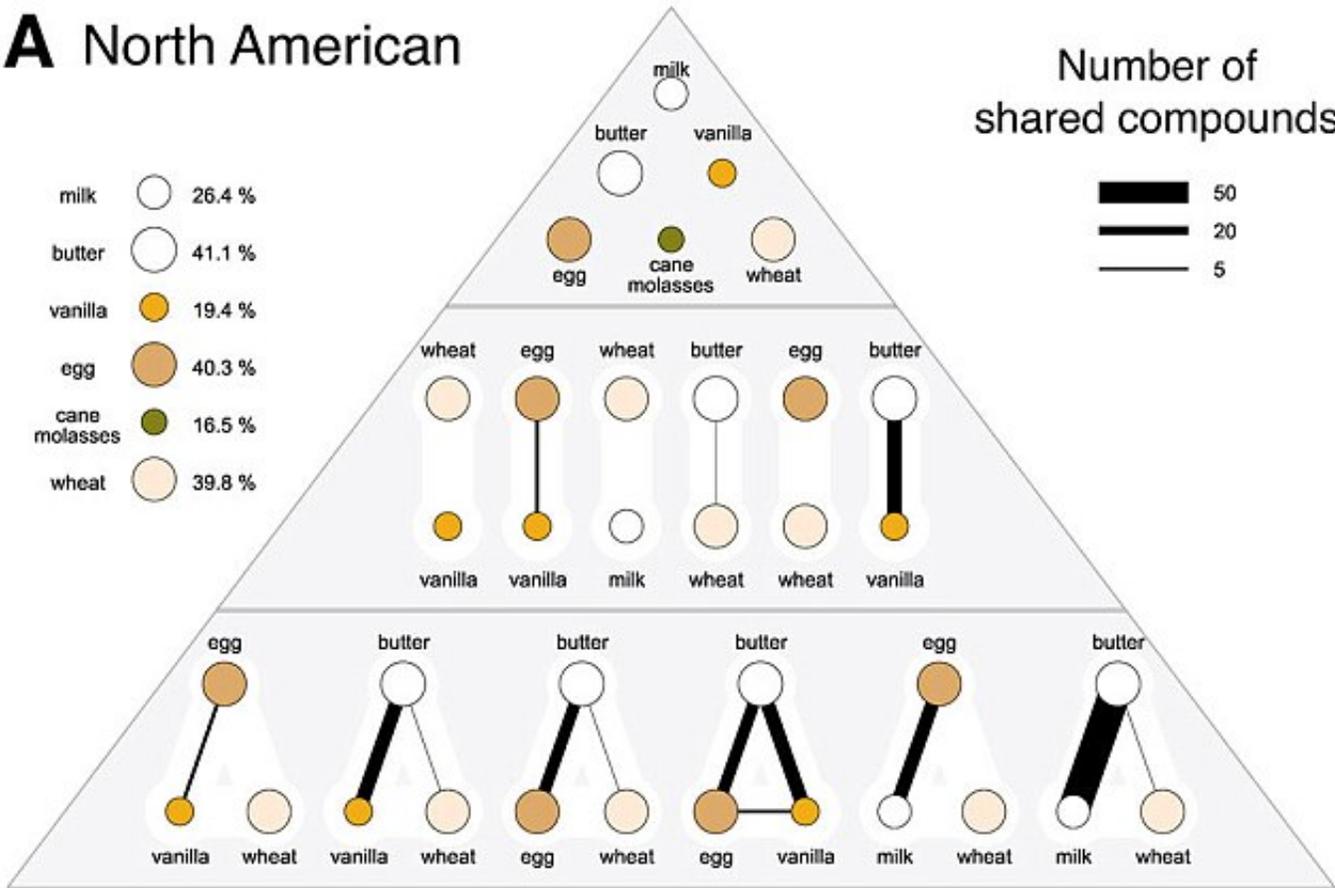
The more flavours two ingredients share, the less likely they are to be used together in east Asian cuisine - whereas 13 key ingredients, including butter, milk and egg, appear in 74.4 per cent of dishes in north America.

There are flavours that 'define' a cuisine - for instance basil in south European food, or soy sauce in east Asian - but the classic pairings of each cuisine, such as parmesan cheese and tomato (which share lots of flavours), and garlic and sesame oil (which share very few) show that 'food pairing' is a distinctly western idea.

A North American

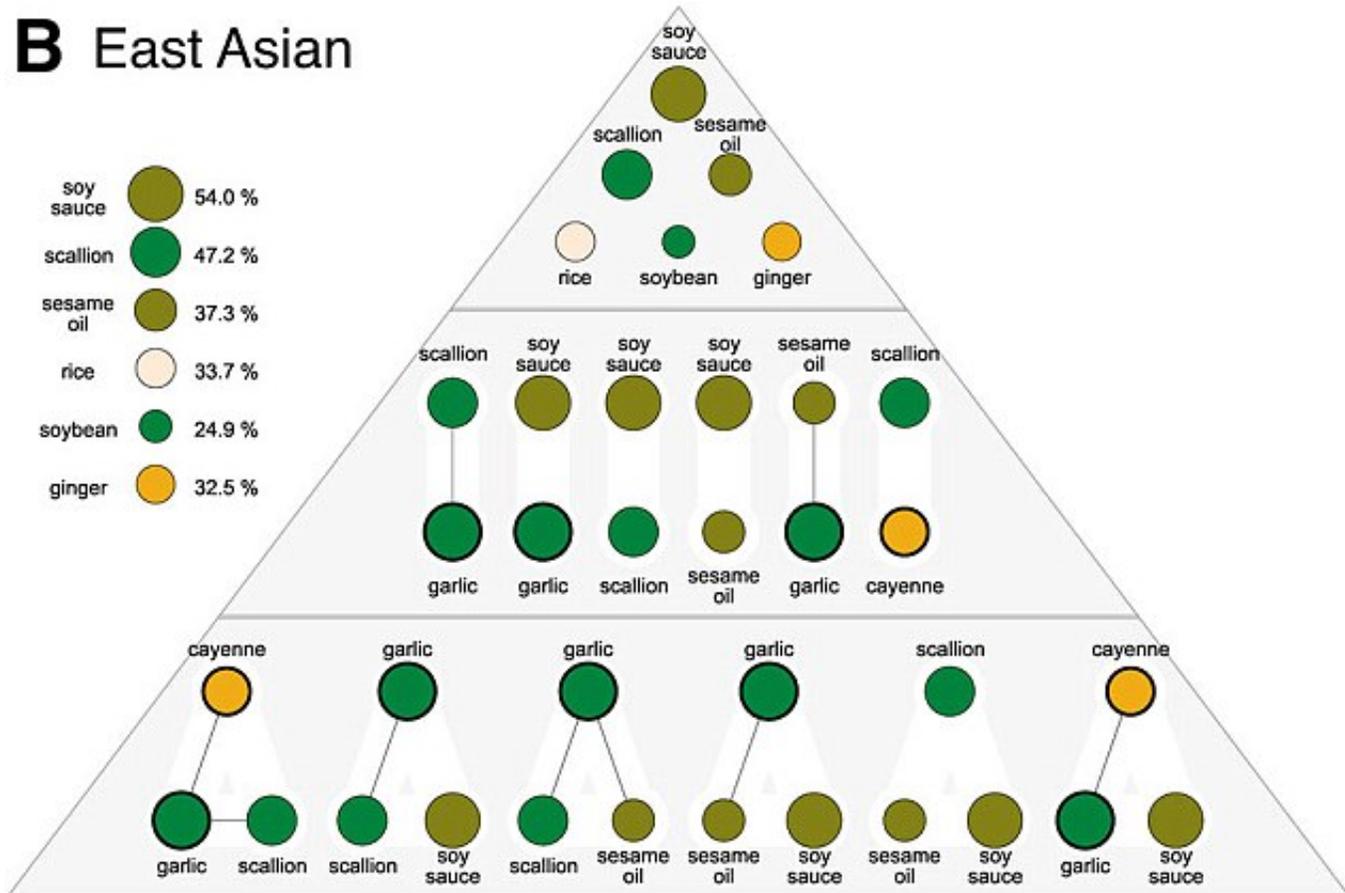
- milk 26.4 %
- butter 41.1 %
- vanilla 19.4 %
- egg 40.3 %
- cane molasses 16.5 %
- wheat 39.8 %

Number of shared compounds



B East Asian

- soy sauce 54.0 %
- scallion 47.2 %
- sesame oil 37.3 %
- rice 33.7 %
- soybean 24.9 %
- ginger 32.5 %



The 'flavour pairs' that define western and east Asian food take a totally different

approach - while Western food is built on similar pairs such as butter and milk, Asian food seeks 'clashing' pairings such as sesame oil and garlic

The idea that the difference in approach is so different is all new.

It also turns the whole idea of 'food pairing' cuisine on its head. If east Asian food tastes good by avoiding food pairs - rather than simply identifying, then pairing them - then perhaps this research paves the way for new avenues of experimental cooking.

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Ha ha ha ha ha - how much did this research cost?

- LizB, Manchester, 17/12/2011 19:16

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It took a team of so-called "scientists" to work out that countries where sweet & sour whatever is frequently on the menu tend to pair-up contrasting tastes? They need to get proper jobs.

- David Bourke, Rochester, Kent., 17/12/2011 12:38

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I simply love asian food ! Their chicken and mutton biriyani, chicken tikka, fochka, chotpati, daal, fish curry, shrimp curry and many other food items are mouth watering tasty ! In fact, Asians have got hundreds of different items compared to a few(20-25) in the western world !

- Taz, Jonesboro,USA, 17/12/2011 10:02

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The headline is absurd as EVERYTHING is 'down to chemistry' as everything is made up of 'chemicals' or chemical substances. Eastern cooking is very different in the way it blends 'opposites' like sweet and sour, spicey and mild, so you have ginger and coconut milk, honey and vinegar, for example. Most of the flavours of eastern cuisine are down to the spices used.

- The History Man, France, 17/12/2011 09:32

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Why on Earth do we need a study? What a waste of time and effort. I'm not unscientific but surely there are more pressing and important things that need investigation.

- Alex N, Vancouver BC, 17/12/2011 07:49

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..Also because westerners were primitive...their taste buds and brains didn't have the imagination to come up with such yummy cuisine ...England has the worst food...before the Indians went there the English would eat cold chicken and their baked beans hahahahaha....pathetic bunch...!!!!

- Kameeniaurat, Canada, 17/12/2011 07:44

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So the researchers say that it "could lead to new avenues of understanding food". What a load of nonsense! If it tastes nice you eat it!!!, End of!

- Steve, Brierley Hill, 17/12/2011 06:39

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. - gia, ca usa" Actually it's not a matter of European food being bland, but rather of your taste buds being incapable of distinguishing between wider ranges of flavors. It's what happens when you destroy your tastebuds by eating nothing but very spicy food. - Claire, USA, Haha, I am not saying that I agree with gia's comment but your reply does not make sense. I actually heard one other stupid person say this. She made boiled spinach and she thought adding salt to it was enough to give it taste. It was disgusting with or without salt. And when she realized that I was just swallowing that boiled spinach (because I can't stand the taste), she said exactly what you said. Only dumba's say illogical cr%p like this. Spicy food doesn't destroy the tastebuds (just because you say it doesn't make it true). Adding sugar and cream to everything (because that is the only way people like you know how to cook) will destroy your health. "wider ranges of flavors" hahahaha yea right..dream on

- pfreeworld, NJ, USA, 17/12/2011 05:25

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"You can't beat a nice Chinese chicken and mushroom takeaway curry and a big bag of their lovely chips.." - Pop, England, 17/12/2011 3:49 Oh yes you can ! The lamb rack with gratin dauphinoise at Le Gitan in Zermatt beats anything....

- Blewyn, Muscat, Oman, 17/12/2011 04:35

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I didn't read all of the pseudo scientific stuff, but I can happily confirm that, here at least, just about anyone can knock up something very good to eat using whatever fresh ingredients they have to hand, in 15 minutes or less using just a wok.

- Mike, Thailand, 17/12/2011 03:16

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