

# Humans alter Earth's chemistry from beyond the grave

April 26 2017, by Mari  tte Le Roux

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A young man pays his respects to his ancestors at a cemetery in Shanghai

It's not only in life that humans leave their mark on Nature. In death, our decomposing corpses alter the chemistry of precious soil, scientists warned on Wednesday.

Whether our bodies are buried or cremated, they leach iron, zinc, sulphur, calcium and phosphorus into ground that may later be used as farms, forests or parks.

They are [essential nutrients](#), but human funerary practices mean they are being concentrated in cemeteries instead of being dispersed evenly throughout nature, according to new research.

This means that in some places the nutrients may be over-concentrated for optimal absorption by plants and creatures, while lacking in others.

Furthermore, human bodies also contain more sinister elements, such as mercury from [dental fillings](#).

"Chemical traces of decomposed bodies can frequently be very well distinguished in soil," said Ladislav Smejda of the Czech University of Life Sciences in Prague, who took part in the unusual probe.

"These traces persist for a very long time, for centuries to millennia."

The effects will become more pronounced as more and more dead bodies are laid to rest, Smejda said in Vienna, where he unveiled the research at a meeting of the European Geosciences Union.

"What we do today with our dead will affect the environment for a very, very long time," he said.

"Maybe it is not such a problem in our current perspective but with an increasing population globally it might become a pressing problem in the future."



Iraqis visit relatives' graves in one of the world's biggest cemeteries, in the holy city of Najaf

Smejda and a team used X-ray fluorescence spectroscopy to analyse soil chemicals in graves and ash "scattering gardens".

## Pushing up daisies

Using animal carcasses, they also measured the theoretical impact of an ancient practice called "excarnation", whereby the dead are left out in the open for nature to take its course.

In all three cases, the ground contained "significantly" higher concentrations of chemicals compared to the surrounds, Smejda said.

If there had been no cemeteries, human remains, like those of animals,

would be distributed randomly for the nutrients they release to be reused "again and again, everywhere," the researcher told AFP.

But concentrating them in certain places "is something that can be regarded as not natural. It's a human impact, we are changing natural levels," he said.

Now the question is: "Can we come up with a better idea (of) how to distribute these necessary elements across wider landscapes?" Smejda added.

"Certainly there is a potential to invent, to develop and to put into practice... new ways of human burial or new treatments that could be more environmentally friendly, more ecological."

He conceded this was a "taboo" topic for many, with funerary customs deeply rooted in culture and religion.

"It's a very complex matter and we are just at the start of this discussion, I think."

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