

# Email to test "six degrees of separation"

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By [Robert Matthews](#)

An unexpected e-mail from a US university over the coming months may not be spam – it could be from scientists investigating a fascinating social phenomenon.

According to urban folklore, everyone in the world knows everyone else via just a few intermediaries – an effect summed up by the phrase “six degrees of separation”.

The number six emerged from an experiment performed in 1967 by the social psychologist Stanley Milgram, who sent packages to several hundred randomly selected people in America’s Midwest, with the aim of getting them delivered to target people in Boston.

Each recipient was given some details about the target, such as their name and profession, and was asked to send the package to a personal acquaintance whom they believed was more likely to know the target personally. Milgram discovered that on average the packages reached their targets after passing through astonishingly short chains, typically comprising just six people.

## Small world

In 1998, mathematicians Duncan Watts and Steven Strogatz at Cornell University showed that Milgram’s finding can be explained by the “small world effect”, in which just a handful of people with very diverse friends can “short circuit” otherwise huge networks of acquaintances.

But attempts to replicate Milgram’s findings have had mixed results – and in any case, the original experiment fell far short of proving that the “six degrees” effect holds true for the whole world. So a team at Columbia University is now using the internet to attempt a global version.

Instead of a postal package, they are inviting people to use their network of acquaintances to get an e-mail message to targets spread across the world. According to Watts, who devised the experiment, e-mail is ideal for testing Milgram’s claim as there are well over 100 million e-mail users worldwide.

Only e-mails between genuine acquaintances will be deemed to complete a chain. People will not be allowed to short-circuit the sequence by just looking up the target’s e-mail address.

## Chain mail

Watts has set up a website giving details about how to take part, and how to volunteer to act as a target. “Ideally, we’d like to have, say, 100,000 people, each trying to reach around 20 targets,” he says.

The team is keen to have as many people take part as possible, not least because they suspect people’s mistrust of unsolicited e-mail might otherwise scupper their experiment.

Early tests show that barely one in four e-mails are being passed on. With such a high rate of attrition, many thousands of people would have to take part to give much chance of even one chain of acquaintances reaching the target if Milgram’s six degrees apply worldwide.

“Perhaps people can’t be bothered to pass them on – or perhaps Milgram was just wrong,” says Watts. “Either way, we need lots of people to take part so we can tell.”