

Steganography is no laughing matter

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It is possible to hide secret messages in simple jokes, according to US research published in the latest issue of the *International Journal of Security and Networks*.

Encrypting a message with a strong code is the only safe way to keep your communications secret, but it will be obvious to anyone seeing such a message that the sender is hiding something, regardless of whether they are encrypting their emails for legitimate or illicit purposes.

Steganography on the other hand can hide a secret message in plain sight. Often a message is secreted within the binary strings of 0s and 1s in a compressed image or music [file format](#). Prying eyes see only the original image or hear the song, whereas the recipient, knowing that a message is within uses software to extract it. Nevertheless, a putative [interception](#) might still take place; this kind of disguise also has the problem of requiring large file sizes.

An alternative to such steganography would be to hide a message in plain sight within a plain text document. Unfortunately, despite the much smaller file sizes that would be possible, secreting a message within normal text usually disrupts the grammar and syntax or the spelling and so immediately looks suspicious. Now, an approach that is far less obvious and is tolerant of poor grammar has been developed by computer scientist Abdelrahman Desoky of the University of Maryland in Baltimore County, USA and is described in the latest issue of the *International Journal of Security and Networks*.

Desoky suggests that instead of using a humdrum text document and

modifying it in a codified way to embed a secret message, correspondents could use a joke to hide their true meaning. As such, he has developed an Automatic Joke Generation Based Steganography Methodology (Jokestega) that takes advantage of recent software that can automatically write pun-type jokes using large dictionary databases. Among the automatic joke generators available are: The MIT Project, Chuck Norris Joke Generator, Jokes2000, The Joke Generator dot Com and the Online Joke Generator System (pickuplinegen).

A simple example might be to hide the code word "shaking" in the following auto-joke. The original question and answer joke is "Where do milk shakes come from?" and the correct answer would be "From nervous cows". So far, so funny. But, the system can substitute the word "shaking" for "nervous" and still retain the humor so that the answer becomes "From shaking cows". It loses some of its wit, but still makes sense and we are not all Bob Hopes, after all.

Other examples where substitutions are possible might include the equally funny: What do you get when you cross a car with a sandwich? A traffic jam, which might use a well-known sandwich bar brand, "Subway" as an alternative answer. Similarly, Where is Dracula's American office? The answer being the Vampire State Building. The question could be substituted as Where is Dracula's American home? With the same answer. There are endless puns any one of which might be used in a similar setting. A collection of such jokes sent in a message with the non-obvious answer substituted for the wittier version could conceal a message using Jokestega. Desoky suggests that 8 bits of data might be hidden in a simple joke of the type discussed.

More information: "Jokestega: automatic joke generation-based steganography methodology" in Int. J. Security and Networks, 2013, 7, 148-160

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