

Introduction

Cryptography is what you have to use when the data type that you are using does not have within its methodology a one-way function in secure communications between individuals. Being one-way means this function is irreversible to everybody except the person using it and that of course makes it ideal for securing secret messages. Being one-way means that it has no general mathematical inverse function and it can only be reversed by human intervention on the part of the 'owner' of the function. That in turn means a transfer of data from a human memory, the owner's, to a computer memory which is something that no computer will ever be able to do on its own.

So, a person has a choice. You may look for data that has just such a function or you may resign yourself to the second prize that is – intensively intellectual cryptography.

One-way functions are almost a myth because of the scarcity of these. Our number system for instance does not have a known one-way function within its methodology and to date, intensive cryptography has therefore become the norm for securing communications when using numbers as the raw data in encryption transformations in which plain text are turned into more difficult to read cipher-text.

A great benefit of a one-way function is that Alice (the industry standard pseudonym for the sending entity) has a much easier task when preparing a secret message for sending to Bob (industry name for a receiving entity) because she does not now have to build in huge intractability into her secret message so as to foil Eve (industry name for an illegal cryptanalyst adversary) who is almost certain to intercept her message as cipher-text and attempt to read it. Instead Alice lets the one-way function provide this intractability in her algorithm and she gets on with the more benign task of information management preparing and formatting the message for sending to Bob.

In the cryptography being expounded here, three-dimensional vectors are used as the raw data type for the encryption transformations that Alice will use for her secure messages to Bob. Happily, this data type does have within it the almost mythical one-way function that is described earlier. The vectors are the type used to represent physical quantities such as displacement, velocity, etc. A case is made for using vector cryptography as a replacement for scalar cryptography. The concepts of structure and entropy as building blocks in all cryptography, both vector and scalar, are also discussed. Vector cryptography is being promoted as new cryptography.
