Known Cover Attack

The attacker knows the original cover-text and the stego-text and can detect pattern differences between them. This can be used to discover patterns which can be identified in future suspect objects [13].

Known Message Attack

The attacker only knows the message. This attack involves the analysis of know patterns the correspond to hidden information. This is very similar to the stego-only attack in difficulty.

Chosen Stego Attack

The attacker has access to the steganography algorithm and the stego-object. This can be used to discover typical outputs of the algorithm, which can then be identified later on in future objects.

Chosen Message Attack

The attacker uses an steganography algorithm to generate stego-objects. He then analyses these and uses this information to identify patterns that can indicate the usage of the algorithm in future objects.

Known Stego Attack

The attacker knows the algorithm, the original object and the stego-object. With this information the attacker would have little trouble reverse engineering and discovering exactly what the algorithm does to the original object. He could then use this information to easily detect objects which have had the algorithm applied to them.

These six methods can be used for automatic analysis. In some cases a human will be able to perform the analysis. For example, with linguistic text steganography a professional linguist would be able to spot any unusual semantic or syntactic features. And as previously mentioned there are reports of audio specialists being able to here the data hidden in audio.

2.3 Current Research

Shirali-Shahreza and Shirali-Shahreza [32] proposed a novel method of synonym-based text steganography which makes use of the differences between American English and British English, for example the difference between the words "football" and "soccer". The basic idea is that to hide bits, whenever an word has a different word for American and British English is found, the word is replaced by either its American (for a 0) or British (for a 1) alternative. As with the other mentioned algorithms, they report a very low bitrate, but