lexicon, grammar and translation rules while the latter systems learn patterns automatically by the computer from texts. Some of the data-driven systems learn wholly automatically, and other systems are hybrids, adopting some mixture of manual development with automatic learning.

Statistical NLP approach to syntactic and semantic analysis is different as well. It concentrates on the lower levels of grammatical processing. Semantic analysis resides in the distribution of contexts over which words and utterances are used. Statistical NLP approach seeks to solve syntactic and semantic disambiguation by automatically learning lexical and structural preferences from corpora. Manning and Shutze (2002:19) believe that

> statistical models offer a good solution to the ambiguity problem: statistical models are robust, generalize well, and behave gracefully in the presence of errors and new data. Thus, Statistical NLP methods have led the way in providing successful disambiguation in large scale systems using naturally occurring texts.

Therefore, linguists started to see a prospect in statistical methods which provide practical solutions to real problems. This advancement is simply the reason that prevented traditional methods of achieving any major success.

2.7. Probability Theory

The Statistical approach is based on the probabilistic theory which deals with predicting how likely it is that something will happen. The current research will not delve into such theory in details as it believes that it is related to another discipline (mathematics). Brown et al., (1993) explicates the statistical approach and the probability theory work together in MT designed to translate French into English. Since the current research is on a different language pair i.e. English and Arabic, a modification to their explication is sought for (the example is on an attempt of the statistical MT to translate an Arabic sentence into English): When