

**16. Understanding References/Relationship.** Read the following text<sup>1</sup> and:

1. Underline the linking words
2. Look at the passage and classify the linking words according to their function (i.e. cause, consequence, contrast, etc.)
3. Can you replace them without changing the meaning?

## FOREWORD.

The main purpose of this book is to establish aspects of analytical photogrammetric concepts and procedures, the backbone of which consists of various Mathematical Models. (...). A mathematical model provides insight into the underlying chain of events. There is, however, no mystery about the way in which this insight is achieved. Mathematical models have no scientific values until and unless they have been adequately validated with factual data through experience or research.

Mathematical models are often, in a way, 'crippled' by a lack of informational backgrounds, and the task of making the connection to reality is difficult. In this respect, the involved people, both the scientist and the mathematician, strive for 'generality'. The mathematician is concerned with generality in the form of the statement, and the scientist with generality in its content. The former objective -the generality of language, and the latter- one of fact can be incompatible in some cases. Such differences in the goals of mathematics and sciences may lead to differences in strategies of model-making. Traditionally, this task of model-making has been carried out by mathematically minded individuals, often yielding headway in non-productive directions.

The strategy for a productive direction is simple. Firstly, one seemingly correct mathematical model is set up. Secondly, implications of the model are explored. Thirdly, outcomes due to the model are compared with reported results. If the first theory fits the facts, it provides scientific validation. Whatever its mathematical virtues may be, the model has no specific value unless it has been validated. (...). There is no mathematical-scientific approach that can guarantee fully successful results in the complex circumstances of major problems. The user of ideas presented in this book must be aware of this reality of practical life. (...).

Furthermore, in the science-engineering generality, it is the content and not the form of the mathematical statements that matters. The reader, therefore, often may benefit from modifying a mathematical model such that the form is adaptable to the circumstances without really changing its basic contents. Numerous suggestions in this direction are included in the text.

This book (...) [is] intended for graduate students, researchers and practitioners in photogrammetry and remote sensing; this book presupposes a good background in physics and mathematics as generally required in undergraduate education at American or European universities.

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<sup>1</sup>By Sanjib K. Ghosh (1979). *Analytical Photogrammetry*. Pergamon Press. New York. (pp. foreword). Pergamon Press Inc. Maxwell House, Fairview Park, Elmsford, N.Y. 10523 - USA