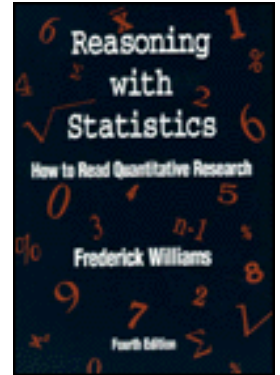




Reasoning With Statistics: How to Read Quantitative Research (5th Ed.)

Williams, Frederick and Monge, Peter
[Harcourt College Publishers](#), 2001.
228 pages



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Reviewed by: [Anthony P. Hurst](#), [Saint Louis University](#)
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Should women over 40 routinely have a mammogram? For many years, health professionals have believed that routine mammography could save the lives of women. Independent experts at the National Cancer Institute now question the validity of the research on which this belief was based. Even though the data has remained consistent, for more than a decade in some cases, interpretations have radically fluctuated over time. A reasonable question to ask, then, is, “why?”

Williams and Monge (2001) may not expect the readers of *Reasoning With Statistics: How to Read Quantitative Research* to wrestle with this particular dispute, but they do hope that their text will enhance their critical reading of quantitative research generally. The book is in its fifth edition, and has reached “tens of thousands of students” (p. v). In it, the authors offer a fat-trimmed serving of the underlying logic of statistics as it is implemented in quantitative research.

The text has six major sections. *Part One* provides the appropriate initiating information about quantitative research. It addresses when quantitative research is appropriate, it defines foundational terms (e.g., descriptive and sampling statistics), and it offers a reminder that statistics themselves do not make a study more or less scientific. The next five parts of the book build from simple levels of measurement through the analyses of complex differences and relationships--a necessary progression because of the incremental nature of statistical understanding. Understanding the logic of multiple analyses of variance, for example, requires a person to know the role of means, as well as indices of dispersion.

One limitation of the text is that some basic terms important to being a knowledgeable reader of quantitative research are presented through little more than definition. One example of this is in the introduction of validity, the extent to which we measure what we intend to measure. The authors illustrate questions raised by the concept of validity by employing a study that measures the amount of time it takes a person to read a certain text: Does the timepiece work? Can we reasonably tell when the reading starts and stops? If the researcher can adequately answer these questions, then the measure of reading time is valid.

But how is validity determined when the boundaries of what we are measuring are less clear? If a researcher is assessing a decision made by a group, how should we determine the validity of what counts as the decision? This is where theory informs the scholar, certainly, but validity is difficult to appreciate in such a brief discussion, one that does not mention the role of theory. In the mammography example noted above, the validity of previous research--already acted upon--was called into question. The continuing debate about

whether or not populations of women (e.g., certain age groups) will benefit or be harmed by routine mammography illustrates how measuring what a person thinks he or she is measuring requires insight into numerous underlying assumptions (e.g., scientific values, political considerations, economic constraint, etc.).

Finally, instructors may find it somewhat challenging to incorporate the text in class. It should not serve as a surrogate for a statistics course, and Williams and Monge state this plainly at the outset. Its primary purpose is to illustrate the logic of statistics as it is used in quantitative research, but as noted above there is a progression to understanding statistics. Should students read the whole book before they investigate quantitative research? One way to use this text might be to incorporate it into a communication theory course. It could serve as a reference when examining the relationship between data and theory building, letting students see and evaluate the logic behind research measured in a certain way.

However it is used, Williams and Monge provide a text that has an important place for students or anyone else wanting to be a better reader of quantitative research. It is pithy, friendly, and meets its objective of providing the logical underpinning of statistics.

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