

## Preface

**H**ave you ever noticed that research findings can sound quite definitive and then be startlingly short-lived as facts? Did you ever wonder why? *The Tao of Research: A Path to Validity* explains the ways by which research is a human activity that regularly succumbs to human failings. Without untoward motivations, simple mistakes, lack of the right knowledge, impediments to the research, or an unconscious bias often result in wrong “knowledge” becoming part of shared cultural beliefs that can persist for years. Eventually, enough observations contradict those beliefs and prompt a reexamination of the evidence. The process by which we uncover evidence and then, through a context, turn that evidence into new knowledge is called research.

Research—the word itself puts us on the path to understanding its mission and its methods. Say it slowly . . . re-search. Research is looking again, trying once more to find something that was not found before. At a fundamental level, it is a search for truth, and nothing is harder to find or more tenuous to hold.

Although sometimes difficult to accept, knowledge in human terms is composed of both fact (the truth component) and supposition (guesses that fill in the gaps) because of the methods by which our brains process information. Sometimes, the supposition component is so small as to be trivial and can be rightfully ignored. Yet the notion that our knowledge is truth simply breaks down when examined very closely. Faulty or incomplete knowledge, plus unknown prejudices (from society’s pervasive conditioning beyond our awareness), predestines a most human condition whereby the part of what we know that is supposition allows the rest of what we know to make

sense to us. In other words, faulty yet often-accepted “knowledge,” plus our unknown prejudices, yields what we truly believe is a complete understanding, when it simply is not. Notice that the uniquely individual aspect of filling in the gaps is what allows knowledge to make sense to each of us, separately. To the extent that supposition is minimized, our knowledge is more enduring, useful, and universal because it is closer to the truth.

Adhering to research principles makes our results more useful because the results do not depend as much on the unique conditions and assumptions under which they arose. The path of research approaches knowledge by safeguarding its factual component and minimizing the suppositional component in fundamental ways. This approach sets landmarks that most good research must pass on the path to knowledge creation. By minimizing supposition, validity (i.e., the truthful component of knowledge in the sense of contextual correctness or accuracy) is better assured.

Minimizing supposition is far easier said than done. The reason is that validity (i.e., appropriateness for a given purpose) involves judgment. In real-life research, results tend not to be as strong as researchers would prefer to see them. With only a modest strength to their evidence, even small flaws in research methodology can substantively alter results and our new knowledge. Even seemingly innocent choices in sampling or statistical techniques can have ramifications that find their way into “common knowledge” and then into policies that affect people’s lives.

Just as with memories and judgment, the sufficiency continuum that we know as validity varies from person to person. Functionally, validity can be both arbitrary in the way it is implemented and arrogant in the way it is presented. Validity has an arbitrary component because it is often based on unrecognized suppositions. It can seem arrogant in that it too often considers its results as truth, rather than converging on more accurate knowledge. Whether in physical or social science, new evidence that contains proportionally larger factual components can overturn widely held and long-term beliefs that at the time were known simply as truths.

This book approaches the topic of research through an exploration of the issues that threaten validity in the process of knowledge

generation. The strengths and weaknesses of research from a wide range of disciplines become clearer through an understanding of some basic principles through which science tries to minimize supposition and thereby maximize fact. This process is commonly known as ensuring validity. It would be more correctly called ensuring sufficient validity for a given purpose. Throughout the book, readers will notice facets of validity that might seem to be the hidden secrets of research, its version of skeletons in the closet—perhaps rightfully so.

As we traverse the landscape of research, we will be assisted by three guides. Readers familiar with *The Tao of Statistics: A Path to Understanding (With No Math)* (2006) will already be familiar with two of them, their questions, and their data. One guide is a high school principal in a midsized town. The second guide is the director of public health for a mid-Atlantic state. The third guide is a professor of sociology at a small liberal arts college. We will see that the choice of professions is of little consequence to understanding the concepts presented in the book. The concepts span a vast array of research activities, types of questions, and policy-relevant issues. Nonetheless, we will see the ways by which the high school principal uses his knowledge of research to better understand his school's needs. The director of public health uses her knowledge of research to help maximize her department's impact on the neediest citizens in her state. The sociology professor uses her knowledge of research to deepen our understanding of human nature.

We will see that the guides need to understand each concept within the contexts of their own localized environments. They combine their topic knowledge and an accommodation of local conditions with knowledge of research methodology to refine their research problems to fit their specific needs. This process is the heart of research, and understanding its implications for generated knowledge is the heart of this book. As the book progresses, readers will see that a research perspective is useful in many aspects of life. It opens our eyes to the frailty of our knowledge, humbles us to accept its limits, and challenges us to learn just that small amount more that brings us closer to an actual truth.

Importantly, our quest for knowledge is not only restricted by our suppositions, but it also actually requires these restrictions because

of the nature of conducting research. As we will see, these restrictions are propositional, ethical, structural, functional, and technical. This organizing structure assists in understanding how the various aspects of research unite to form an overarching perspective on generating new knowledge and assessing its worth. Just sit back in a comfortable chair, in a place where the world can pass you by, and let yourself be led through a world where knowledge is a commodity that is often aggressively pursued but eventually spoils. It is a world where humility and arrogance appear as two sides of the same coin, a world where we know that what we know is not exactly so.

In finding a balance, to know which parts are likely “not exactly so,” let the Tao act as a guide. The Tao is an eastern philosophy that promotes compassion, moderation, and humility. These are important characteristics for ethical research that can and should beneficially coexist with Western scientific methods.