Nuclear weapons play a significant role in the international politics of today’s world. While there are nine nations that currently possess nuclear weapons (the United States, Russia, United Kingdom, France, China, India, Pakistan, Israel, and North Korea), there are other nations that continue to pursue that capability. As the debates concerning reducing and eventually eliminating nuclear stockpiles continue, the authors of *Trust in Nuclear Disarmament Verification* look at the impact of human factors and more specifically, the role that trust plays within the disarmament verification process.

In the first three chapters of the book, the authors introduce and summarize the nature of disarmament verification, provide an overview of past verification initiatives, and lay out some of the current challenges associated with verifying nuclear disarmament. These sections set the stage for the discussion in chapter 4 concerning the human factors of disarmament verification, most specifically, the element of trust. Chapters 5 and 6 summarize the research team’s development and execution of a fictional disarmament verification simulation to determine the potential role of human factors within the verification process. The final chapter provides conclusions and recommendations for additional work.

The authors assert that human factors can play a significant role in the dismantlement verification process, yet these factors and their resulting influences appear to be the least studied and in practice, the least considered elements within this process. While this book initiates a more detailed consideration of those potential impacts on the process, the authors state right up front that their conclusions are not exhaustive and acknowledge that further study is required in this area, especially in scenarios where the participants in the process are adversarial or where the potential for deception exists.

Nuclear disarmament can never be 100 percent observed due to the classification and sensitivity of potential design information, as well as concerns for security and nonproliferation. Since “compliance beyond all doubt” cannot be achieved through visual observation and verification of each step, there will always be an element of uncertainty in the process. The challenge of 100-percent verification and ensuring compliance beyond all doubt is the difficulty of “balancing the risk of undetected cheating with the duty to prevent the transfer of classified information” (p. 53). The authors believe this is the heart of the challenge in the verification process. This particular point is well supported, and “uncertainty” is the foundation of the human factors discussion.

In the absence of 100-percent verification throughout the disarmament process, blindspots are created that drive varying levels of uncertainty. These blind spots in the verification process create gaps between what can be visually verified and what cannot be physically observed. These gaps in the process (that which cannot be observed) may affect the perceptions of the participants. While observable and verifiable processes can generate confidence, trust must fill in the gaps within the process where observation and verification are absent but where perceptions can flourish. Confidence, then, is tangible and evidence-based while trust is an intangible, lacking any visual evidence.
The research team adopted a simulation-based approach in order to gather objective data and determine the potential impacts of human factors within the verification process. The authors provide solid reasoning for using a simulation as their testing methodology but also recognize the inherent weaknesses of simulations overall. They also appear to take reasonable care to ensure objectivity within the simulation itself in an effort to glean useful data.

The simulation was designed to replicate real-world conditions as much as possible in an effort to determine how the human elements of trust and confidence influence the verification process. The scenario involved an inspection team visiting a single, hypothetical dismantlement facility that experienced a “break in the chain of custody in a pre-existing verification regime” (p. 103). The scenario enabled participants (inspectors versus the inspected) to have a dialog concerning the causes of the custody break and negotiate its acceptability in the absence of visible observation.

After conducting the simulation, the authors found that human factors, most specifically the element of trust, play a “subtle but powerful role” (p. 151) in the verification process and “it would be reductive, and even dangerous to think of verification in terms of a solely technical and evidence-based process” (p. 145). During the after-action discussions, it appeared clear that human factors (trust and confidence) played a significant role shaping the perceptions of the simulation participants.

It is important to reiterate the authors’ caution that the conclusions are not exhaustive and further study is required in this area. One of the areas for further study concerns how adversarial relationships will affect the element of trust. While I believe the authors have made a solid case that human factors do influence the verification process and must therefore be considered, I can only imagine that the influence of those factors increases exponentially in the midst of an adversarial relationship where the opportunities for deception appear not only possible, but advantageous. The “gap” between what can be observed (confidence) and what must be accepted beyond observation (trust) may take on a much more significant role in real-world scenarios, requiring an even greater degree of consideration by both parties. Negotiating parties who fail to consider the impact of human factors, and then compensate for its potential influence, could easily undermine the overall disarmament process.

Overall, the book successfully explores a unique, understudied aspect of the verification process. The authors clearly articulate the influences of human factors in the process, and the simulations they conducted provide substantial insights into those influences, supporting the overall conclusions.