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# The Magic of Science and the Science of Magic: Polygraphy, Deception, and National Security

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Abstract. This article highlights philosophical problems on the road to identifying deception.

Is science the royal road to identifying deception? This seems to be the case when confronted with a security shortfall in government and business. The scientific sword of polygraphy is often unsheathed and brandished as that most formidable weapon. This is so even if it already has been unsheathed, brandished, and then defeated. As importantly, the predictable recourse to the scientific sword occurs even if polygraphy may not be scientific.

Those who view polygraphy as scientific usually are referring to the superficial trappings of some scientific procedure: equipment (e.g., mechanical, electrical, and computer), observable procedures, systematic data collection, and some prescribed mixture of quantitative and qualitative data analysis. More crucial elements of science, such as reliable and valid measures and predictors based on a well-researched nomological net, are missing from polygraphy according to a consensus of behavioral scientists--as opposed to polygraphers.

Besides the scientific shortfall of polygraphy, there are some disturbing comparisons between science and an endeavor seemingly far removed from it: magic. Some students of the human search for knowledge--the epistemological quest--have cited a qualitative discontinuity between the procedures and substance of magic and that of science. These students attribute arbitrariness to magic's procedures and ontological invalidity to magic's substance. The same students attribute something called rigorous inductive and deductive logic to science's procedures and ontological validity to science's substance. Yet in the context of knowledge yielded by variants of polygraphy, the qualitative discontinuity between magic and science seems to either disappear or never have been.

Are there differences between magic and science as to arbitrariness and logic when detecting deception? Imbuing faith in reading the entrails of slain animals--or those immobilized and feeling no pain through curare, waiting for a sign from the Gods or a spell to appear or be dispelled, or in viewing changes or the lack thereof in respiration, blood pressure, and electrodermal activity all come founded on theoretical rationales. These rationales each constitute specific perspectives on the linkage of predictor to that to be predicted--each perspective imbued with a worldview about cause and effect, association and correlation, correlation and causation, and the competitive advantages of rationalism, empiricism, and experimentalism. Magic and science both seem to best develop, maintain, and increase imbued faith--even in the face of disconfirming information--in matters less of the physical than of the psychological. Reading entrails and making attributions based on several discrete and putative psychophysiological indicators share a congruent logic once their different theoretically founded linkages are accepted.

Magic and science both seem to share an equivalence bearing on ontology. That is, both assume that there is something that is knowable, exists, and waits to be discovered. With deception as an object of knowledge, all three aspects of the something are problematic. Is an individual, from the perspective of polygraphy, lying, thereby inadvertently stating the truth? Telling the truth but thereby speaking an

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untruth? Lying to self but not others? To others but not self? Is a particular truth immutable or changing with context, situation, and numerous inner and outer states?

In the context of comparing science and magic, one might surmise that supporters of polygraphy--ethically, morally, or otherwise--are basing their stand on protecting their careers, expressing biases towards scientists or magicians who are from ivory towers as opposed to the street, and exuding the notion that security issues are somehow divorced from the empirically derived laws of human behavior. Polygraphy's detractors might share the penchant for career protection but differ from supporters in otherwise harboring converse biases.

The philosophical waters on which magic and scientific quests to identify deception must walk are murky with little buoyancy. Beyond situations wherein an individual who believes in the magic of science and the science of magic sincerely relates some truth as a truth, one may conclude that, in matters of deception, epistemology has made little if any advance. Magic and science quests to identify deception succeed only in deceiving those who seek to identify. (See Honts, C.R., Devitt, et al. (1996). *Mental and physical countermeasures reduce the accuracy of the concealed knowledge test. Psychophysiology*, 33, 84-92; Iacono, W.G., & Patrick, C.J. (1997). Polygraphy and integrity testing. In R. Rogers et al. (Eds.). *Clinical assessment of malingering and deception* (pp. 252-281). The Guilford Press; Kircher, J.C., & Raskin, D.C. (1992). Polygraph techniques: History, controversies, and prospects. In P. Suedfeld, P.E. Tetlock et al. (Eds.) *Psychology and social policy*. Hemisphere Publishing Corporation; Lykken, D.T. (1988). The case against polygraph testing. In A. Gale et al. (Eds.). *The polygraph test: Lies, truth, and science* (pp. 111-125). Sage Publications, Inc.; Park, R.L. (July 12, 1999). Liars never break a sweat. *The New York Times*, p. A19; The psychophysiology of detecting lies: More problems. (November 7, 1997). *IBPP*, 3(15); Validity of polygraph procedures: Postmodernist and strict constructionist approaches. (April 10, 1998). *IBPP*, 4(14).) (Keywords: Deception, Polygraphy, Truth.)