

**THE GRAIL AND THE GOLEM:
THE SOCIOLOGY OF ALEATORY ARTIFACTS**

By

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ABSTRACT

This thesis is a social genealogy of gambling. It examines both aleatory artifacts used to gamble, and the gambling ritual itself, its functions, and its expression of a cosmological viewpoint. I theorize that gambling is a specialized form of the interaction ritual ‘machine’ originally described by sociologist Emile Durkheim, comprised of an assembled group, a series of scripted actions, and a shared mood or emotion. The gambling ritual is called upon as a sacred or holy ritual, meant to access larger cosmological forces in order to determine outcomes in a moral order. In its original forms, gambling was directly practiced as sortilege, or mechanical divination, and called upon variously as a form of medicine or a means of ethical resolution in the face of conflicting or ambiguous moral values, such as the lots drawn by sailors to determine the guilt of Jonah. As aleatory artifacts themselves become refined over time, as well as the cosmological narratives they reify, they comprise a vital technology base for the transmission of cultural ideas, serving to regulate mental categories Durkheim describes as time, space, number, personality, and causality. Additionally, the collective efforts to systematically understand gambling as a mathematical problem were at the heart of the development of probability theory. The renaissance scholar Gerolamo Cardano in particular expressed the first modern version of chance and probability theory in an effort to understand dice throws, and communicated his ideas to other prominent scholars including Galileo, who was among the first to question why street gamblers were so well versed in applied probability. The distribution of dice throws was eventually applied by Simpson to a theory of errors in astronomical observation, ultimately laying the groundwork resulting in Laplace’s expression of the central limit theorem and Gauss’s development of the bell curve. In our contemporary moment, the study of zero-sum

games of chance led John Von Neumann and Oscar Morganstern to develop the mini-max theorem, a mathematical expression of the maximized self-interest of the economic rational actor. These techniques, along with the theory of normal distribution, afforded the possibility of computational 'Monte Carlo' simulation, instrumental in allowing Von Neumann and his team to use computers as an aleatory artifact to 'shuffle' neutrons and model their collision in the core of an exploding atomic bomb. I refer to this outcome of the study of gambling resulting in advanced weapons technology as a 'golem,' a term originally developed by Collins and Pinch. As advanced poker playing artificial intelligence is being deployed based on Von Neumann and John Nash's original work in optimal mixed strategy, I conducted participant observation ethnography of online poker players in an attempt to situate their expertise once again in interaction ritual chains, rather than as a form of advanced computational algorithm. I claim that expertise is cultivated by participating in the gambling ritual, allowing mental categories of time, space, number, personality, and causality to be encoded in human posture for expert play.