What is the role of a maker who uses software as the intermediary between idea and form? Objects reify a moment in space and time. How an object is made signifies and reflects the culture of the maker and the tools with which that culture is made. The use of software destabilizes these modes of production. Every tool comes from the primary human impulse to create form from material. Each mode of production emerges from this human drive. What does using software as a tool reflect about us? A reflection not only mirrors ourselves, but is a way of seeing through what we take as solid reality and presence. As a magician looking into a dark glass, we see what projections the mind offers.

What is the hidden work of making through software? What is this leap that digital fabrication offers from bits to atoms? Like the Fool of the first Tarot card stepping into the void, this leap offers a new view that holds as much danger as promise. Bringing materiality to code is magic, bridging the gap between the seen and the unseen. Magic disrupts linear descriptions of the way the universe works. Likewise, the materiality of 3D printing presents a foil to distinct binary poles of cool digital logic and linearity. It is a disruption to the way objects are traditionally made. Is it also a disruption to how objects make us? What are the new roles we inhabit, and what possibilities do they offer?

Software operates under magical propositions. Underneath the visual readability of software interfaces lies a system of mathematical order that only the initiated may ever understand. It presents the promise of order, a world built on the predictable logic of numbers interacting. The initiate to a magical order attempts to learn or interpret the discernible order of the universe. Their belief is that among the seeming chaos there are certain systems at work. Perhaps in learning these systems, one can learn to tilt them to ones will. To hack reality, so to speak. To create a script for oneself, rather than running the script written by

another.

Digital fabrication closes the circle between software and the space of magic. The action of digital fabrication creates a bridge between the unseen formlessness of the mathematical construction of code and the formness of material objects constructed from this information. Through digital fabrication words (code) are transformed into things. The magician makes a similar assumption, that words can be imbued with transformative power. Not just that language is powerful, but that language can be transformed into a tool, an instruction. Both the coder and the magician choose certain words or letters to signify certain actions for the script they write.

For instance, in ASCII STL, a common coding language for digital fabrication "vertex 0.0 0.0 0.0" signifies where the point of a cube should originate:

```
solid cube_corner
facet normal 0.0 1.0 0.0
outer loop
vertex 0.0 0.0 0.0 vertex 1.0 0.0 0.0 vertex 0.0 0.0 1.0
endloop
```

In The Golden Dawn's Supreme Invoking Ritual of the Pentagram, "Exarp" in the language of
Enochian magic invites the energy of air:

Face East. Make Qabalistic Cross.
Make Equilibriated Active Pentagram of Spirit.
Vibrate Exarp in making Pentagram.
Vibrare Eheieh in making Wheel.
Finish with 5=6 Signs

Digital fabrication troubles the distinction between ideas and things, thus between the

thinker and things, the person and the object. The digital fabricator is the link between this seen and unseen world, the object and the place from which the object came. They insinuate themselves in the pattern of code, the enacted script. This code is an opaque system based on obscure and secret arrangements of numbers and words imbued with agency to produce specific results. The magician peers into a similar veil, using numbers and words to reproduce creation. They create a hack, not eliminating the underlying system, or destroying it, but twisting it for their own ends. They may use it for purposes it wasn't designed for, distort the boundaries of the possible, or create a new language with which to speak it into being, a new code.

The object created by this magician/fabricator becomes a fetish. It signifies the magical status of the object, and the process from which it came. The object signifies that the gap between the seen and unseen, the internal and external, information and self, is not clear. That dichotomies of self and object are not distinct and enforceable. The binary quality of code doesn't translate into the objects created by these means. The act of physical creation disrupts this linearity. Materiality, the insertion of the senses, of embodiment, disrupts this.

Digital Fabrication introduces the possibility of inserting an alternative narrative of materiality and embodiment into cool digital logic. The origin of the objects, the software itself, relies on the execution of commands, and of ceding power to the executor of the commands. The physicality of the object complicates this execution, it troubles this arrangement. Anyone who has produced an object through 3D printing or other tools of digital fabrication knows that promises of digital slickness are abruptly challenged by material execution. Its glitches follow physical laws that elude the pure world of mathematics on which software is based.