

The Renegade Mage's Technomancer Notes on Magic & Society

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Agriculture

The invention of the Hair Growth/Haircut spells and magic items by the American Wool Company (AWC) simply wiped out the raising of animals for wool. When one sheep under Suspended Animation in a factory in Arkansas produces as much shorn wool in a year as a *million* sheep being raised in the open, it's impossible for farmers to compete. For a while, AWC kept the spells a trade secret and made great profits, but their research was successfully duplicated and then licensed to all comers by Mexico's Lana Internacional.

Now, wools are the bargain fibers of the world, with alpaca, angora, camel, cashmere, guanaco, horsehair, llama, merino, mohair, qiviut, shahtoosh, and vicuna production sufficient to meet almost any demand. Grades of wool that not long ago would have been considered high-end for garments are now dismissed as only fit for use as building insulation, plastic filler, and slow-release nitrogen fertilizer.

The somewhat-reduced global sheep farming industry is now entirely focused on the demand for mutton, while a number of endangered animals (for example, Tibetan antelope and rhinoceros) are now safe from poaching, demand for their products (shahtoosh and rhino horn, respectively) filled by a handful of peacefully-sleeping animals.

Labor

One effect of Mexico's greater development is substantially reduced immigration to the United States. Not only do a lot fewer Mexicans come to the US looking for work, but migrants from Central and South America tend to prefer Spanish-speaking Mexico to the more foreign United States. While this has partially been offset by increased immigration from Asia (the Philippines and India in particular), much work has been taken up by golem labor.

Golems do often require fairly extensive human supervision, but the modern US military produces lots of people trained and experienced in directing them. Golems have some difficulty with IQ-based skills, but this can sometimes be overcome by competent supervision – note that Carpentry skill includes a “+5 if . . . supervised or assisted by someone with skill 15 or better”, and some other skills benefit under similar conditions. Further, narrow techniques can help; a PVC golem created with 2 points in Gardening skill and 8 points in Fruit-Picking technique is quite effective at harvesting fruit.

“Household automatons” – usually PVC golems with Housekeeping-12 – are moderately common in upper middle-class households in the United States (a significant minority of these are “anatomically correct” models also programmed with Erotic Art-13). Golems require too much direct supervision to be very useful as maid staff at hotels and motels, though they can be found down in the laundry.

The textile sweatshop is as obsolete as the blacksmith shop. A 4'5” (SM -1) PVC golem with Sewing-16 costs under \$11,000 (when purchased in wholesale lots, like when staffing a garment factory), and can work continuously, 24 hours a day, seven days a week, for decades. That undercuts the costs of even Third World labor while avoiding negative publicity about working conditions. Leatherworking and Professional Skill (Weaving) are also natural jobs for golems.

Historically, golems had a hard time making it in the taxi business, as it required too much changeable Area Knowledge. But now, GPS-based turn-by-turn navigation systems have largely solved the issue. People use a ride-hailing app on their smartphone, then are picked up by a mana-engined car (to eliminate fuel costs) driven by a golem with Driving-14, Computer Operation-9, and a technique in the company's navigation and payment system at 13. Your app will connect you to a human customer service representative if you have any issues.

Law and Order

The Oath spell has revolutionized pretrial release, parole, and probation. In the former case, an Oath to report to court generally obviates any need to post bond. In the latter cases, parole and probation officers regularly ask the subject, under Compel Truth, whether he has violated or intends to violate the Oath to adhere to his parole conditions. The result has been a substantial reduction in the number of people held in jails and prisons. Violating an official Oath is itself a crime, and limits future eligibility for Oath-conditioned bond, parole, or probation.

Medicine

Alter Body

The relative ease of using Alter Body for gender confirmation and its reversibility (Remove Curse) have resulted in a social expectation that people who want to be treated as members of a given gender will undergo a confirmation transformation, and further that it is correct to treat people's gender as matching their current physiological sex. There are dissenters from this position (some insisting people should be treated as their gender identity regardless of current physiology, some insisting that magical alteration does not actually change a person's "real" sex), but they don't seem likely to budge the current "common-sense" consensus. The biggest area of political debate is over the ability of pre-teens to consent to and receive such treatment, where the *physical* reversibility doesn't resolve debates over psychological harm.

Alter Body is somewhat more controversial as a treatment for body dysmorphia, such as people who identify as another race, as amputees, or even nonhumans ("My soul is the soul of a Seelie"). But in general, it is accepted that adults may do what they like, particularly since it isn't very hard to undo.

Surgery

The obsolescence of conventional surgery remains more predicted than real. Certainly, trauma is handled with magic, but cancer remains stubbornly difficult for spells to distinguish from healthy tissue. Individual spells targeting specific cancers have been developed, and the use of Bane-tuned necrolasers helps, but cutting tumors out (instead of simply killing them in place) remains a front-line treatment. Magic substantially helps survival rates, between the safety of magical anesthesia (Strike Numb) devices and the use of healing magic to speed recovery.

Youth

The single biggest change in medicine in the last 25 years has been the improvement in Youth spellcasting. Previously, the spell was decidedly inferior to the potion; it only reduced age by 1d months and came with a substantial risk of complications (critical failure). The development of the theory behind stabilizing skills has significantly reduced the latter, while improvements to the spell itself have made it a reliable way to de-age a full year, just like the potion. As a result, NEMA-powered Youth castings are now the affordable way to de-age, at a typical price of \$3,000 per casting.

In response to this, the United States has been phasing out its government old age benefits systems (Social Security and Medicare) with eligibility for government-paid annual Youth spells starting at age 50. The replacement of defined-benefit pensions with defined-contribution retirement plans in the private sector is entirely complete, and taxpayers' revolts have eliminated or sharply limited perpetual pensions in the public sector.

Metals

The use of the spell Earth to Stone to produce pseudo-nickel-iron is fairly common, though safety regulations bar the use of the resulting metal where human life might be threatened by a Dispel Magic. Food cans are a fairly common use for it. Most magical metal is actually produced by steelmakers, since it's easy to pour slag into molds and then convert the convenient-sized stone, and they're already in the business of processing, selling, and shipping metal.

Seabed manganese nodules have proven a marginally-profitable source of nickel, copper, and cobalt when gathered by golems. The United States dominates the business; Hawaii is the closest land to the rich Clarion-Clipperton Zone, and as a non-party to the United Nations Convention on the Law of the Sea, it hasn't been impeded by the squabbling in the International Seabed Authority.

Psychology and Psychiatry

The development of the Oath spell has reduced the number of cases where the much more difficult and dangerous Great Geas is considered appropriate (at least by mainstream psychologists in free countries). Relieve Addiction hasn't been as useful as initially hoped (dealing with only the physiological dangers doesn't eliminate the desires that drove use in the first place). The unmaintainable, short-term Relieve Madness is seen as more a down payment on a future Cure Insanity, though it does help resolve issues around informed consent from patients who otherwise are nonfunctional.

Sports

Alter Body

The question as to whether Alter Body is improper magical performance enhancement is a live issue in a number of sports. Originally the universal position was that it was banned; boxers looking for extra reach and basketball players looking to be closer to the hoop were cheaters. But the use of the spell for gender confirmation, and whether players could play in the league matching their new sex, reopened the discussion. That body mass is conserved simplifies the issues in some respects (Alter Body won't turn a jockey into a linebacker or vice-versa) and complicates it in others (particularly when players who went through male puberty try to join women's teams).

Currently, the world's biggest sports leagues (Liga MX, Major League Baseball, the NBA, the NFL, the NHL, and the Premier League) and the Olympics ban Alter Body, but some second-tier leagues do not. The EuroLeague (basketball), for example, simply imposes a universal height limit of 230 centimeters. In boxing, the IBF, WBA, and WBC ban Alter Body, while the WBO does not, on the grounds that such body alterations are "self-limiting".

Mystic Martial Arts

Rumors of the existence of supernatural martial arts distinct from spellcasting were common for years, rooted in ancient legends. But it took a long time for the actual skills to be refined out of the traditional martial arts, and political interference (the closing of temples in China's Cultural Revolution, the Korean government influence in unifying taekwondo) didn't help. So, for a long time, tales of the "mystic martial arts" were dismissed as delusions or fakery, with overt supernatural performances attributed to the action of mages. "Respectable" martial artists tended to take the line of Bruce Lee, who said he'd never seen any evidence of magic power related to the fighting arts.

Still, the practitioners of the arts were sure they were doing something real and refined their techniques and training. When the first Ultimate Fighting Championship was held in 1993, George Dillman famously took down Royce Gracie in the first few seconds of the final with his "no-touch knockout" (a Flying Fists attack boosted by Power Blow). This well-watched event resulted in massive worldwide interest in, and subsequent development of, the mystic martial arts.

Ulama

In Mexican Spanish, *ulama* is the overall name of several modern versions of the Mesoamerican ball game. In modern Merlin English, however, "ulama" almost always means *ulama de escoba*, the "broomstick ulama" invented in Mexico in the 1970s. Though officially claimed as an adaptation of *ulama de mazo*, in practice this ulama closely resembles box lacrosse played on broomsticks, even using lacrosse sticks and balls. An increasingly popular spectator sport, the biggest issue with broad uptake is that the Flying Carpet spell requires Magery 2 to learn, while the minimum enchanted 'stick runs \$120,000.

Transportation

Gasoline

One thing that might surprise out-time visitors is the slowness of the phaseout of gasoline containing tetrahedral lead in Merlin. Using Purify Air meshes for pollution control both eliminated lead in auto exhaust and avoided concerns about lead fouling catalytic converters. The start of the phaseout of leaded gasoline (driven by concerns about small device engines and water pollution from gasoline leaks) accordingly was delayed into the 1980s in developed countries and still hasn't been completed in poorer parts of the world. Further, lead has not been reduced in aviation gasoline.

Maglev Trains

The ability of the Cold spell to reduce things to absolute zero allowed use of superconductors without having to handle liquid helium (or, later, liquid nitrogen). Combined with Earth magic making it easy to run tunnels (for safety and noise abatement), this resulted in several maglev “bullet train” systems with speeds of 300 mph being built beginning in the 1970s. The first systems were the French TGV, the Japanese Shinkansen LMC, and the TeslaTrains system in the Texas Triangle (connecting Dallas to Houston, Dallas to San Antonio, and Houston to San Antonio).

Since the 1970s, the TGV has become the core of a European maglev system from Lisbon to Warsaw, the Shinkansen LMC lines cover most of Japan, China has built its own network, and South Korea and Vietnam have built their own lines (Seoul-Busan and Hanoi-Saigon). In the US, New Mexico, the Walt Disney Company, and TeslaTrains built an Albuquerque-Disney Land of Enchantment-Las Cruces line in the 1980s; a California effort is long-delayed, far over budget, and still hasn't completed its initial Bakersfield-Merced segment; and various plans in the northeastern US have failed to get off the drawing board.

Water

The most enchantment-cost efficient ways to make fresh water with magic are:

1. Purify Water hoop with two points of power (1,050 energy). Purifies two gallons/second, or 164 gallons/day per point of enchantment cost. That comes to \$0.61 per gallon/day capacity.
2. Rain wand with four points of power (4,600 energy) used in a place where rain is “natural”. Causes an inch of rain an hour over a 40-yard radius, causing approximately 147 gallons/day of rain per point of enchantment cost. That comes to \$0.68 per gallon/day capacity.
3. Create Water wand with two points of power (1,200 energy). Creates 72 gallons/day of water per point of enchantment cost. That comes to \$1.39 per gallon/day capacity.
4. Rain wand with four points of power (4,600 energy) used in a place where rain is “unnatural” (a desert being given as the example). Radius is halved to 20 yards, cutting area and thus total rainfall by a factor of 4 (approximately 37 gallons/day of rain per point of enchantment cost, or \$2.72 per gallon/day capacity).

It initially looks like the cheap thing for an oceanside community is a Purify Water desalination plant, but the costs of pumping seawater to be processed are sufficiently high (based on real-life desalination plant costs) that it will usually be cheaper, over years and decades, to directly Create Water. Direct creation also has a lower environmental impact, as sea life is not being pulled into the system. Including interest payments, the amortized cost of a capital investment in Create Water over 25 years comes to around 0.03 cents/gallon, which is cheap enough to be useful in particularly dry areas (like deserts and some semi-deserts) while too expensive to bother with in wetter areas.

In places where rain is “natural”, forced rain into constructed elevated basins with outlet pipes *potentially* can undercut direct Create Water, but such areas generally can acquire natural water more cheaply than making it with Power-enchanted always-on Rain wands.