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Observer Effect

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Why Yet Another Magic System?

The power of belief is a very important concept to a culture that lacks a scientific basis for its world-view. It's a concept so central to being human that I want to explore creating a magic system based on the idea.

Furthermore, I've noticed a distinct lack of magic systems (both in Fudge and in the RPG community at large) that use something other than mana as a power source for magic.

Writing Fudge Observer Effect gave me the opportunity to address both of these issues. I hope you enjoy reading (and using it) as much as I did writing it! So without further ado, let's get into the thick of things...

What is the Observer Effect?

Scientifically Speaking

Quantum physics tells us that if a tree falls in the forest and there's no one there to hear it - then it doesn't fall at all. The tree is stuck in a superposition, the state of being in all states at once. Essentially, the tree has fallen in all directions and in all ways simultaneously, and all of these interactions mutually cancel each other out (called quantum interference), so nothing ends up happening. But when the environment interacts with this falling tree, be it an air molecule, a leaf from another tree or a neuron firing in the brain of an observing animal, then the superposition ends and one of the many possible realities becomes true.

Scientists call this the Observer Effect, since an observer is required to interact with an object in order for events to occur. I admit that it's a strange concept, and even I have trouble believing it, but apparently it's true. An additional point regarding the observer effect is that the observer truly doesn't need to be intelligent or even visible to the naked eye. Any interaction whatsoever with an event causes the probability wave to collapse, ending the superposition and making reality take its course.

Magically Speaking

Fudge Observer Effect is only loosely based on the scientific meaning of the concept (it was included mostly for color and to make me look smart). The idea of anything being considered as a valid observer is the first thing that needs to be changed. Since primitive people didn't know of the existence of the microscopic world, it won't play a part of this magic system. Instead, people will play the role of observers to spells.

This magic system is founded on the following two principles:

- Certain special people (let's call them magicians) can edit reality with the power of their belief.
- When a magician attempts to change reality in this way, the transformation is subject to the opinion of every sentient observer that witnesses the event, including the magician.

There are several important consequences of these statements:

- Assuming the conditions are right (see below), spells are cast nearly instantaneously. All the caster needs to do is spend one turn (typically 3 seconds of game time) concentrating and voila!
- No skills are needed to cast spells, since for the magician belief comes as easily as breathing.

- Any spell effect is possible (i.e. if the magician can imagine it, it's possible).
- When the magician is alone the only observer of his spells is himself.
- If the magician moves from place to place, his observers will change and so will the conditions of the spell. Similarly, if observers come from elsewhere and are newly able to observe the spell's effect, they will be able to challenge its existence.

Magicians cast spells through the use of the Observer Effect supernatural power. How the GM allows characters to get this gift depends on his style. Typically, someone using objective character creation will pay two gifts for the power. No skills are required to use the Observer Effect to cast spells, although many skills will come in handy, as will be shown later. I recommend that characters not be allowed to buy the Observer Effect power in the middle of a campaign with earned experience points. It really should be a defining trait that a character is born with.

Spell-casting

Casting a spell is a function of the magician being able to convince the spell's observers that what he is doing is really possible. As such, every spell has a Plausibility that represents its inherent believability relative to a particular set of observers. Similarly, the observers of a spell have an inherent Skepticism based on their worldview and the effects that the magician is attempting to create. Both of these concepts are represented via the standard Fudge 7-tier skill system (i.e. they typically range from Terrible to Superb).

In order to have a chance at success, a spell's Plausibility needs to be at least equal to the observers' Skepticism. This is where a magician's subsidiary skills see use. If the Plausibility is less than the Skepticism (something which will often be the case) then the magician needs to convince the spell's observers that it is actually possible. The better the techniques used by the magician, the more likely he is to successfully cast the spell.

Every magician has a Casting Threshold (CT) of Fair. When a spell's Plausibility is equal to the Skepticism of its observers, the magician is allowed to make a Situational Roll (Fair + 4dF). If the rolled degree is equal to or greater than the caster's CT then the spell is successfully cast. For every level that Plausibility exceeds Skepticism, the magician gets a +1 bonus to the roll. Every time that a magician attempts to cast a spell and fails, his CT goes up by one level. Eventually, it will become virtually impossible for the magician to cast any spells. Fortunately, after a good night's rest the magician's CT returns to Fair. The relationship between Plausibility and Skepticism is illustrated on the table below:

Plausibility minus Skepticism	Casting Roll
-1 or less	Impossible
0	Normal
1	+1 bonus
2	+2 bonus
3	+3 bonus

Tweaking the Observer Effect

The GM can adjust the power of the Observer Effect by modifying the default level of the Casting Threshold. By allowing levels below Fair, the GM makes magic more powerful, while increasing the basic CT decreases the power of magic. Similarly, allowing magicians to regenerate their CT more or less often than 24 hours will make a difference to their power level. The GM could make Gifts and Faults available that modify these traits instead of changing the overall standard. This way different magicians could have varying power levels.

Plausibility

When a magician casts a spell, his player must tell the GM what effect he is trying to create. Based on his knowledge of the spell's observers (and on the desired power level of the Observer Effect in his game world) the GM determines a Plausibility rating for the spell. The lower the rating, the more spectacular the spell effect. A sample table is provided here to make the GM's job easier:

Plausibility	Typical Comment by Observer
Great	"That is so true!" "It's just like my mother always said."
Good	"I can believe that." "Yep."
Fair	"Hmmm. I didn't think that was possible." "I guess I wasn't paying attention."
Mediocre	"That's not possible." "Huh?"
Poor	"Something really weird is going on here." "I want my mommy!"
Terrible	"Holy #\$@*!!!" "Somebody pinch me, I must be dreaming."
Terrible -1 or less	"The sky is falling! The sky is falling!" "The Day of Judgement is at hand!!!"

Skepticism

Determining the Skepticism affecting a spell is a little more involved than figuring out the Plausibility. In order to make it as simple and comprehensive as possible, I will propose several different methods that can be used as desired to find the Skepticism depending on the situation.

First of all, I need to more closely define the word "observer". An observer is any sentient being that is able to witness the spell being cast, or the spell's effects with any of his senses. Typically these senses will be sight and hearing. The magician casting the spell is always an observer to his own spell, and his Skepticism always defaults to Fair. If the spell is observed indirectly (such as through a satellite image, binoculars, a telescope or a video camera) the person watching is still considered to be an observer!

Secondly, I'm providing a table that indicates the typical skepticism for various types of people:

Skepticism	Type of Person
Superb	Crotchety old man
Great	Scientist, doctor
Good	Student
Fair	City dweller, the magician
Mediocre	Farmer, sailor, peasant
Poor	Primitive tribesman, child
Terrible	Newborn infant

These normal values for skepticism can be modified by current events. For instance, during a magic show it would be normal to give a +1 to Skepticism, whereas during a wild festival a -1 to Skepticism is also reasonable.

Next, the GM must determine the typical Skepticism for all of the spell's observers. There are several ways to determine this:

Median Value

Use this method when you want to know exactly what the Skepticism is, and there are a small number of observers.

The typical value can be exactly calculated by finding the median of all of the observers' Skepticism. Simply list every value, in order from least to greatest and find the middle value. This is the typical Skepticism. In the event that there are an even number of observers (and thus two values lie in the middle) then take the average of these two, rounding toward Fair.

For example: Timmy is casting a spell using the Observer Effect. There are 6 observers including himself. Together, everyone's Skepticism is: Poor, Fair, Fair, Superb, Superb, and Superb. The middle values in this list are Fair and Superb. Averaging these values and rounding toward Fair, we get a typical Skepticism of Good.

Random Roll

Use this method when there are too many observers to bother figuring out the Skepticism manually, but the observers follow a normal distribution (i.e. there are many different types of observers). Start with a Skepticism of Fair, and add the result of a 2dF roll to it. If there are 100 or more observers, only roll 1dF. If there are 1000 or more observers, assume that the Skepticism is Fair and don't bother rolling.

Fudge It!

Use this method if the crowd of observers is not varied or typical (e.g. a group of scientists), or because you find the other two methods irritable. Simply choose a level of Skepticism that makes sense for you, and consult the table if you're having any difficulty. Always remember that as the number of observers goes up, Skepticism inevitably gets closer to Fair, so reserve extreme values (like Poor or Great) for small groups or groups with an unusual make-up.

Sample Spells

Here are some sample spells created using the basic rules described so far:

Timmy to Monkey

Timmy, an Observer Effect magician on modern Earth, decides that he wants to shape-change himself into a monkey. There are no other observers nearby. The GM tells Timmy's player that this spell has a Plausibility of Poor. Unfortunately, because Timmy's inherent Skepticism for his own spells is Fair, he cannot cast the spell.

Frustrated, Timmy drives to a hospital. He finds his way to the maternity ward, and sneaks into the infant section (you know, the part where all the newborn babies are). Timmy tries to cast the spell again, with all these infants around. Ruefully, the GM admits that the Skepticism has been reduced to Terrible, so he

may cast the spell with a +1 bonus. Timmy's player makes a Situational Roll, if he rolls a Fair or better result then he successfully casts the spell and turns into a monkey. Otherwise, he fails and his Casting Threshold (CT) increases to Good.

The Magical Fruit

Let's say that Timmy failed the monkey spell on his first try, but succeeded on a second try. His CT is now Good, and he's also a monkey. While wandering the halls of the hospital amusing himself screaming monkey obscenities at passerby's, Timmy is spotted by a burly orderly. The orderly starts running toward him! Thinking quickly, Timmy decides to conjure himself a banana.

After the GM stops laughing, he tells Timmy that because he's a monkey, the spell has a Plausibility of Great. The spell's observers are Timmy, the orderly, and a crotchety old man in a wheelchair. The GM determines the Skepticism for the spell using the median value method. The Skepticism values per person are Fair (Timmy), Fair (orderly) and Superb (old man). This gives a typical Skepticism of Fair. Timmy gets to make a Situational Roll with a +2 bonus to cast the spell, and he needs to roll Good (his CT) or better. Timmy successfully casts the spell, quickly gulps down the banana, and then throws the peel on the ground between himself and the lumbering orderly...

Increasing a Spell's Plausibility

This is where a magician's skills come in. It will happen fairly often that a magician wants to cast a particular spell, but the spell's Plausibility is less than the observers' Skepticism. While there's always the option of relocating to a more hospitable location, for really implausible spells there's nowhere the magician can go that will be adequate. An alternative solution is to convince the spell's observers that it's more plausible than it really is. Let's call the methods of convincing observers plausibility elicitation techniques.

Bluff

The basic idea of this technique is to fast-talk the spell's observers into believing the spell is plausible. Skills like Acting, Fast-Talk, Hypnosis, etc. can all be used to bluff observers, although many, many other skills can be used. The appropriate skill to be used depends on the situation and the angle the magician is taking. In all cases, the magician is trying to convince the crowd through implication. He's saying that because he's demonstrated that A is true, B is also true. Appropriate props will be a great aid to the magician, and should give a bonus to the Bluff roll. Examples of Bluffs include: drinking a potion marked "Strength" before attempting a feat of strength, making the claim, "I am a Dragon" before trying to turn into one, running through a bonfire before trying to make oneself immune to fire, etc.

Bluffing a large crowd (more than about 30 people) can be much trickier than bluffing a smaller number of observers. As any stage performer knows, it's ideal to "warm up" a crowd before going into the main part of the act. When a crowd is "cold", it's not really paying attention and will be less responsive to whatever the magician is trying to accomplish. The GM should levy a penalty to any rolls by the magician to Bluff a cold crowd, while he should give a bonus if the crowd is hot. Obviously, stage performance skills (public speaking, singing, dancing, etc.) will greatly help a magician get the crowd's attention.

If the Bluff is successful, the observers have been swayed and the magician's spell gets a +1 to Plausibility. If the Bluff was carried out exceptionally well, the GM can grant a +2 bonus to Plausibility.

Seeing is Believing

This elicitation technique focuses on people's assumption that if an entity looks (or acts, or sounds...) like

something, then it probably is that thing. For instance, someone dressed up as the abominable snowman would be much more likely to be mistaken for one than someone without the costume. Similarly, a very lifelike statue of a dog could be mistaken for a real dog. Someone who can make a call just like a crow would be expected to be a crow. The important difference between differentiating Bluff from Seeing is Believing is that a Bluff is orchestrated through implication (A implies B) while Seeing is Believing uses similarity to convince observers.

In order to take advantage of this technique, the magician will need to use craft skills or acting skills to build costumes, make props, convincingly behave like someone or something else, etc. In general, if the skill roll used to elicit plausibility succeeds, then it gives the spell a +1 to Plausibility. Exceptional attempts can give a +2 bonus at the GM's discretion.

Resonance

This technique takes advantage of a society's shared mythology and culture. Even though observers from that culture might intellectually know that a given thing is impossible, the fact that they have exposure to the idea (and that it makes sense, at least metaphorically) gives the thing more plausibility.

For instance, while European observers might find it very hard to believe that someone can fly by flapping their arms, if someone were to build wings from feathers and wax and flap those, it would play on the myth of "The Flight of Icarus", thus making people more willing to believe it's possible.

Similarly, in China mythology holds that dragons can shape-change at will from the size of a grain of sand to the size of a mountain. Therefore, if a magician could convince his Chinese observers that he's a dragon then he would gain some plausibility for shape-changing from resonance with their mythology.

If a magician takes advantage of Resonance when casting a spell, he gets a +1 to Plausibility. Like with the other techniques, if a technique Resonates particularly well (perhaps on multiple levels) then a +2 bonus is in order.

Elicitation Backfires

Sometimes a magician's attempts at eliciting Plausibility will not only fail, but fail spectacularly. In cases like this, the magician will actually decrease his spell's Plausibility! For instance, if a magician runs through a bonfire to Bluff people into thinking he's immune to fire, and then his clothes and hair catch on fire, nobody is going to believe him! Similarly, if someone tries to make an abominable snowman outfit, and when actually used it makes him look like a teddy bear, it's not going to help convince his observers.

When a plausibility elicitation technique backfires, it gives the magician a -1 penalty to Plausibility. If the magician really, really screws up and the GM is in a bad mood then he can levy a -2 penalty.

Summary

The elicitation techniques are summarized on the table below. Please note that because there are three techniques and they each normally provide a +1 to Plausibility, it will be unusual for a spell to get more than a +3 bonus. It's possible for magicians to get up to a +6 bonus to Plausibility, but if this happens often either the GM is doing something wrong, or the players are doing something very right.

Elicitation Technique	Plausibility Bonus if Successful	What's the Catch?
Bluff	+1 / +2	Implies that since A has been demonstrated to be true, B (a logically related concept) is also true.

Seeing is Believing	+1 / +2	Uses similarity to increase believability.
Resonance	+1 / +2	Draws on a culture's history, mythology and current events to increase receptiveness.

Useful Elicitation Skills

- **Acting:** Useful both for Bluffing and Seeing is Believing. Can allow the magician to seem like someone or something he isn't.
- **Athletics:** Used to Bluff observers into thinking the magician is more strong, agile, etc. than he really is.
- **Comedy:** Effective at warming up a crowd. Can also make it hostile if done poorly.
- **Craft skills:** Used to build props for any of the elicitation techniques.
- **Fast-talk:** Very useful for Bluffing people with all sorts of foolishness.
- **History:** Used to create spells with Resonance.
- **Hypnosis:** This is a difficult skill to use correctly, but it can be very effective. You can't just hypnotize someone off the street, the person has to be responsive. It takes a lot of time, generally at least 10 or 20 minutes, and relatively quiet conditions. Finally, people's hypnotizability is very variable and has nothing to do with their intelligence or personality. The GM should secretly make a Situational Roll to see how difficult it will be to hypnotize a particular person. If hypnosis is successful, a person's Skepticism to magic is reduced to Terrible. Please note that a magician's Skepticism to his own spells is always Fair, he can't change this through hypnosis.
- **Musical Instrument:** Used to warm up a crowd. Playing a particular song could take advantage of Seeing is Believing or Resonance to elicit plausibility.
- **Mythology:** Used to create spells that Resonate.
- **Pop culture:** Knowledge of what's popular now in a culture will make creating Resonating spells easier.
- **Public Speaking:** Can be used to warm up a crowd, and possibly to Bluff.
- **Singing:** Used to warm up a crowd. Sometimes used for the Seeing is Believing technique.

Duration

As a general rule, spells created through the Observer Effect last for as long as they're needed. There are two things that can end spells prematurely: sleep, and a challenge to the spell's validity.

Spells that don't have a duration per se, such as spells that instantly teleport or hurt someone, are effectively permanent. It's up to the GM to determine which spells last forever, and he can be as generous (or stingy) as desired.

When a spell with a duration ends, only the immediate effects created by the spell (magical flight, fire-immunity, etc.) cease, any indirect effects (e.g. people injured) remain.

Sleep

Everyone needs to sleep eventually. When Observer Effect magicians go to sleep, their Casting Threshold is restored to its original level. At the same time, all spells that they cast previously cease to exist. As the wizard's mind enters the oblivion of sleep, so too do his spells disappear. Being knocked unconscious will cancel all of a magician's spells, but not restore his Casting Threshold (it's hardly restful now is it?).

Challenging a Spell

It's certainly possible for the conditions a spell was successfully cast under to dramatically change. For instance, a spell originally cast in a room full of toddlers could come under the scrutiny of a bunch of teachers. "Why is this man floating in the air?" they might ask. When situations like this occur, it constitutes a challenge to the original spell.

The following must be true in order to constitute a challenge to a spell:

- The Skepticism of the spell's observers must become greater than its original value when the spell was cast.
- There must be something that registers as "wrong" about the spell. A monkey or a banana doesn't challenge someone's beliefs. A man floating 3 feet off the ground certainly can.

When a spell is challenged, the GM should recalculate the Skepticism of the new observers. If the Skepticism increases to more than the spell's Plausibility, then the spell will end unless the magician (or someone else) is able to convince this new set of observers in order to increase the spell's Plausibility so it's at least equal to the Skepticism.

If the person succeeds at convincing the new observers, the spell remains (no new casting roll required), if he fails then the spell ends.

More Sample Spells

Watch Me Pull a Rabbit Out of a Hat!

This is a common trick pulled by stage magicians to impress unruly youngsters. But what happens when Houdini has forgotten his rabbit at home? In most cases, probably nothing interesting. However, in this example we'll assume that Houdini has the Observer Effect supernatural power.

Houdini is attempting to pull a non-existent rabbit out of his top hat. Given the situation, the GM decides this has a Plausibility of Fair. Under normal circumstances the Plausibility of conjuring a rabbit would be much lower, however, it's almost expected for a magician to do this.

The magician's observers are a group of 12 children (Poor Skepticism) and 3 parents (Fair Skepticism). This would normally give the spell a Skepticism of Poor, but in this case the GM gives a +1 to Skepticism because this is a magic show and people are actively trying to figure out "how did he do that?". Therefore the Skepticism against the spell is Mediocre.

Because the Plausibility is one level higher than the Skepticism, Houdini makes a Situational Roll with a +1 bonus. If his roll is equal to or greater than his Casting Threshold, the spell is cast successfully. Otherwise the spell fails and Houdini's Casting Threshold increases by one level.

Strength Tonic

A magician named Darrel wants to impress his friends by showing them his immense strength. Of course, he doesn't really have a lot of strength, he just has an Observer Effect gift and some time on his hands.

Darrel wants to lift a small car over his head. Because it's a light car, the GM tells him this spell has a Plausibility of Poor. Before trying the feat of strength, Darrel shows his friends his new bottle of "Strength Tonic". Darrel quickly gulps down the bottle's murky looking liquid. Unfortunately, his stomach doesn't like the contents as much as his eyes, and he quickly regurgitates the tonic. This sets Darrel's friends laughing. Since his attempt at a Bluff has just backfired, Darrel suffers a -1 penalty to his spell's Plausibility, reducing it to Terrible.

Fortunately, Darrel didn't really stand much of a chance anyway, since his friends' collective Skepticism of Fair would have made it impossible to cast the spell even if he had succeeded. (Succeeding at the Bluff would have brought Plausibility up to Mediocre, one level too low to have a chance at victory.)

We're Only Happy When it Rains

A group of mid-Western farmers are suffering through a serious drought, and as a result they've hired an Observer Effect magician that specializes in rain dancing. Their Skepticism is Mediocre, but because they really want to believe the rain dancer can make it storm, their Skepticism is at -1 for an end result of Poor.

When the rain dancer arrives, he's dressed like an Amerindian. This has Resonance with the farmers' belief that natives can call rain by dancing, for a +1 to Plausibility. The rain dancer attempts to call a rain storm. According to the GM this has inherent Plausibility of Mediocre. With the Resonance bonus that gives the spell an overall Plausibility of Fair.

The magician is now able to make a Situational Roll with a +2 bonus to see if he can cast the spell and make it rain like there's no tomorrow.

Tropical Antarctica

One day, a magician named Joe decides that it's high-time he colonized Antarctica. He travels there by boat to stay at an abandoned camp, and brings along some necessities: warm clothes, a powerful heater, some posters and a tape deck (plus lots of batteries to power the appliances). The posters show vibrant jungle scenes, and the tape deck contains a tape of jungle sounds. After several days of running the heater at full blast, looking at nothing but jungle scenes, and listening to jungle noises, Joe is about to go insane. He's also almost convinced that he's currently in a jungle through Seeing is Believing.

Joe tells the GM he wants to cast a spell to make the surrounding area a tropical jungle. The GM tells Joe that he's done such a good job at convincing himself that he gets a +2 bonus to Plausibility thanks to the Seeing is Believing technique. The spell's basic Plausibility (that Antarctica is really a jungle) is Terrible, but with the bonus it climbs up to Mediocre, still not enough to succeed against Joe's inherent Fair Skepticism.

Frustrated, Joe whips out his secret weapon: hot peppers. He decides that if he starts sweating profusely, he must be in a jungle! After Joe eats as many peppers as he can stomach, his mouth is on fire and sweat is running into his eyes. The GM, amused by Joe's antics, decides to reward him with a +1 to Plausibility for a successful Bluff. Now that Plausibility and Skepticism are both Fair, Joe can attempt to cast the spell! Let's assume that he successfully does so, and when he steps outside he's greeted by the warm humidity of a tropical rainforest.

Unfortunately for Joe, a few hours later a pair of NASA scientists are observing the results of their latest satellite scans of Antarctica. The results are very anomalous to say the least. A large dark region in one of the image swaths indicates the presence of vegetation. The scientists scratch their heads. "This isn't possible" one of them mutters. Indeed, it isn't.

Joe's spell has come under attack, and is being challenged by the NASA scientists. Using the median method to determine Skepticism, the GM lines up the Skepticism values in order: Fair (Joe), Great (scientist 1), Great (scientist 2). Taking the middle value, the GM determines that thanks to the NASA personnel the spell's Skepticism has just skyrocketed (pun unintended) to Great. Unfortunately, Joe has no way to convince the scientists that his jungle has a right to live, and it pops out of existence.

The scientists write off the anomalous image as a satellite fault and demand a retake. Joe nearly freezes to death when his warm tropical jungle suddenly turns back into a frosty arctic plain.

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