Muggle Magic: Have They Caught Up With Us?

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'Transfiguration is some of the most complex and dangerous magic you will learn at Hogwarts' (*SS* 134). That is why I will not, in the time allotted here, attempt to teach you how to transfigure anything. Most of you already know how. You can turn a lump of clay into a useful bowl, ill-assorted food into a tasty meal, or a bucket of bolts and metal into a working machine. This is basic Muggle magic.

While the Wizarding World has been getting along nicely with spells and wand waving, the Muggles have bounded ahead with creations that surpass our magical dexterity.

Consider Arthur Weasley's fascination with electricity; even he has not envisioned the power of this natural force, but the Muggles have. Mr. Weasley is still at the low level of plugs and batteries, while the Muggles make daily use of generators; transformers; alternators; LCDs (that's liquid crystal displays) and LEDs (light-emitting diodes), both of which create the image on those computers you're holding; CPUs (that's what runs your computer, the central processing unit); and lasers.

By the way, the word LASER is an acronym. Who can tell me what it stands for? You won't be tested on this, but it means Light Amplification by Stimulated Emission of Radiation. In just the past four decades, incredible uses for the laser have virtually exploded in the Muggle World.

For example: the focussed intensity of a laser beam can travel to the moon and back in less than a minute. It can easily penetrate diamond, our hardest material, and cut tiny holes in rubies, refine countless intricate patterns in microchips, and move tiny particles around inside living cells. Laser beams record information on compact discs, and the laser-based CD player releases that data for the pleasure of Muggles. Lasers not only create holograms, but they also make very good potato peelers. The versatility of this particular Muggle invention is boundless (Townes 1-6).

The Muggles have put satellites miles above the earth to immediately and continuously relay messages around the globe. What do we have that approaches such a feat? Owls? Phoenix birds? Albus Dumbledore?

I fear that the Wizarding World has failed to — what is the phrase? — keep up with the Joneses. Muggles have conquered so many obstacles which we have taken for granted, that it may no longer matter whether they become aware that we exist. They don't need to come clamouring to us for magical remedies to solve their problems. They have learned to refine and combine so many natural elements that they have no need for our magic.

Look at communications. Muggles learned centuries ago how to send messages through wires, culminating in (they thought) the Trans-Atlantic Cable which carried information across the ocean through underwater wires. Meanwhile they began to fiddle with carbon particles which would convert sound into electrical impulses which were then transmitted by wire and … voilà! the telephone, which today is an indispensable tool of Muggle business and households (Macaulay 252-253).

With the advent of myriad forms of telecommunication using cable, radio waves, optical fibres and laser beams to produce things like pagers and cell phones and a host of other gadgets, Muggles can now communicate endlessly with each other, and even with a community of telephones (referred to as "conference calls"). This can be done with land-wired phones or wireless phones, all of which far exceeds anything that the Wizarding World has produced. We cling to the old ways which were effective in their day but which might now fall by the wayside in light of what the Muggles have accomplished.

What is equivalent to the telephone in the Wizarding World? A pinch of floo powder in a fireplace, so Amos Diggory's head could appear and tell Arthur Weasley about the trouble at Mad Eye Moody's place? Suppose none of the Weasleys were at home that morning? A video camera might have recorded his fiery message, but there are no video cameras in the Weasleys' house.

When Harry Potter tried to reach Sirius Black by fireplace, he found the event most uncomfortable, kneeling on the hard stone hearth. But perhaps Harry had not yet learned the niceties of fireplace discussions, where you could simply sit on the floor or bend over the fire taking notes, as Arthur Weasley did. However performed, it cannot hold a candle to a Muggle teenager sprawled on a couch with a telephone stuck to his head holding a conversation with someone distant, watching a soccer game on television, listening to his favourite music on a CD at the same time, and making occasional notes on his homework. Multi-tasking.

The Muggles starting diddling with radio, harnessing electromagnetic waves with radio frequency, still powered by electricity but now being sent — not through wires — but through the air. Initially static interrupted the flow of information, but as the Muggles worked their way through the range of kilohertz, megahertz, and gigahertz, static was virtually extinguished. Except for an occasional thunderstorm in the immediate vicinity, Muggle radio communication is virtually static free. Clear as a bell.

Well, so what if the Muggles can talk with each other electronically? *Wizards* can *levitate* things! That's true. With the proper swish and flick of a wand, the Wizarding World can move solid objects like feathers, books, pillows, even racing brooms to a designated place. However, when have you seen a wizard transport a large airplane filled with people *and* their heavy baggage across two thousand miles of land or water?

No, we use brooms and Apparition for short trips, Portkeys for longer trips, thestrals for unexpectedly fast trips and — yes, Muggle airplanes and ships for longer but safer journeys. The two worlds are overlapping in spite of our efforts to keep the Wizarding World hidden from the Muggles. They need us less, and we rely on them more.

You know that many Wizarding World places — like Hogwarts, Beauxbatons and the Quidditch World Cup stadium — are protected by numerous charms and spells that will prevent any Muggle from stumbling across them. Many of our homes are unplottable for the same reason. Our magic disables almost all Muggle artefacts. And I ask myself, 'Why? Why do we deprive ourselves of so many astoundingly useful articles that Muggles have invented?' And I answer myself, 'Because we consider ourselves superior to all other living creatures.' And that is obviously not true.

Do you still say we can match the Muggles one for one? I doubt it, even in wandless magic. I have more than once observed Muggles performing a silent *Silencio!* charm on small screaming children in public places, something the accompanying parent could not begin to do. Maybe there was wizard blood present that I was unaware of, but it seemed that eye contact and the simple pointing of a finger did the trick, and I was impressed. These were Muggles using our magic!

Did you know that the Disillusionment charm which Mad Eye Moody cast on Harry as they prepared to fly to Number 12 Grimmauld Place has already been duplicated by the Muggles? This grew out of concern that a doctor's hands often blocked his view of a surgical procedure. An electronic device was created that would bend light rays around the patient's body and reconnect them in such a way that the surgeon could literally see right through the patient, and thus have the ability to perform — if you will — virtual surgery (Komaroff 149).

How many of you have read Science Editor Roger Highfield's delightful book titled *The Science of Harry Potter*? For those of you who haven't, you are hereby assigned to read it from front to back. There you will learn clearly how Muggles have replicated an astonishing number of our magical procedures. In fact, I shall advise the Headmaster of Hogwarts to make Mr. Highfield's book required reading for all Hogwarts students. The day will come when the Wizarding World must be fully aware of any and all scientific progress in the Muggle world, for we must learn to either *use it* or to *block it*, and we can do neither with insufficient knowledge.

How about flying on magical brooms? Every child's favourite dream; just mount your broom and soar skyward. We do not expect to lose our desire for racing broomsticks, just as the Arabians will continue to cling to their concept of flying carpets. Yet again, there the Muggles have outstripped us. During their World War II, individually jet-propelled aircraft were developed that could be worn much like a rucksack, and people envisioned the sky being filled with businessmen flying to work each day. For unknown reasons, that intriguing concept didn't gel for earthly use, but it is now *essential* for work in outer space. When you have time, look up MMU: Manned Maneuvering Unit (Macaulay 145). The Muggles don't need broomsticks or flying carpets.

As Mr. Highfield explains in his book in Part I, Chapter 1, *Magnets, the Levitron and Levitating Frogs,* (Highfield 10) Muggles have now juggled quantum phenomenon to the extent that cannot be explained by classical physics, so that their experimental frog literally defied gravity and "soared" the height of their air-filled test tube. The frog was, in a sense, weightless and completely in control of which way it chose to move.

Basically, this means that when the knowledge of diamagneticism is refined and declared safe and do-able by any species, a person could simply reorganise his or her molecules and fly away like Superman. Is this the type of knowledge we want to block from the Wizarding World? Or should we embrace it?

Your rebuttal might be, 'All right, so maybe we'll tap into some of this Muggle magic, but remember Arthur Weasley's unfortunate experience using Muggle stitches to heal Lord Voldemort's venomous snake wounds.' As Professor Dumbledore would say, 'Ah, yes. I thought we might hit that little snag.'

You forget that the Muggle world is miles apart from Madam Pomfrey's magical healing, or even that of St. Mungo's Hospital for Magical Maladies and

Injuries. In the Muggle medical world, news of those unique snake wounds would have been instantaneously spread around the globe, venom experts would have immediately responded electronically their recommendations for a cure, and Trainee Healer Augustus Pye would have had enough sense to use anything the experts suggested to counteract the poisonous effects — none of which, I'm sure, would include stitches.

Let's take another look at communications. In the Muggle world, how would Arthur Weasley's symptoms have been conveyed to the global medical community? Ninety percent of the information would have been 'faxed.' That is, it would have been relayed electronically by thermofax, a technology the Wizarding World is apparently unaware of.

I'd like a show of hands: How many of you have ever sent or received information by 'fax'? Excellent. Now, who can explain to me how a thermofax machine transfers a printed page across thousands of miles in a matter of seconds? Come now, it's an everyday occurrence, just like lifting a jet airplane full of people into the air. How does this Muggle magic work?

The full name itself is your first clue. Thermofax. *Thermo* means heat. *Fax* is a short version of 'facsimile', or 'a likeness'. When a printed page is fed into a fax machine, an electronic bar reads the data — by reflection and absorption of heat — the difference between darker and lighter images. This information is transmitted electronically — often by bouncing it off a satellite — to a receiving fax machine, which also reads by heat transference the dark and light images. It then prints its interpretation of the message onto heat-sensitive paper so humans can read it

The process sounds simple enough, but it is truly representative of high technology in the Muggle World. I certainly could not have envisioned it nor evidently did anyone else in our carefully guarded Wizarding World. What do we have that parallels such a magical transfer of messages? The closest thing I can think of is the Goblet of Fire, and who among us can wait two or three hundred years for a piece of parchment to tell us yea or nay?

You and I are well aware of the ability of wizards to communicate rapidly with each other when under duress. The Death Eaters respond promptly when Lord Voldemort touches the dark mark emblazoned on any Death Eater's arm. Members of the Order of the Phoenix can also communicate quickly with each other under dire circumstances. Even Hermione's Protean Charm (*OotP-US* 398) on her fake Galleons could summon members of Dumbledore's Army. But Muggles don't have the patience to wait for necessity; they feel irrationally compelled to reach out and touch each other any time, any place.

While some wizards look on this compulsion as a Muggle weakness, you cannot deny that a preponderance of everyday circumstances being resolved by instant communication is an admirable asset.

True, our messenger owls usually out-perform the Muggle postal service, but they have their limitations; as Arthur Weasley observed when the Ministry of Magic switched to flying paper interdepartmental memos, 'We used to use owls, but the mess was unbelievable …droppings all over the desks…' (*OotP-US* 130).

So what can wizards do that Muggles cannot do? Well, we can Apparate — move from one place to another instantly — but Apparation is dangerous if not done properly. The Ministry of Magic takes a dim view of wizards who splinch themselves

while attempting to apparate, which is why testing and licensing is required.

We can train ourselves to be Animagi, becoming animals with a flick of the mind. Peter Pettigrew put this unusual ability to great use for more than 12 years, as did Sirius Black during his imprisonment in Azkaban. But few wizards attempt this magic, because it requires extensive intense concentration and an adaptation to the animal you become. Peter himself could not have accomplished the magic without the extreme help of Sirius Black and James Potter.

We can use Portkeys for instant transportation as well as floo powder, but these methods are not nearly as comfortable nor reliable as the Muggle aircraft, trains, buses, cars and bicycles which move people from one place to another in fairly good time without the unexpected and sometimes dire results of wizard transportation.

While we puff up our own Wizarding importance, let's keep in mind that the Muggles have walked on the moon, visually explored the planet Mars, sent back photographs of distant planets, and are now receiving images of remote areas of the universe that even the Centaurs cannot observe. In my opinion, not only have the Muggles caught up with us, they have far exceeded the narrow limitations of our magical world.

We have, in fact, adapted quite a few of their inventions. The modern plumbing at Hogwarts is an example, as are the telescopes used in Professor Sinistra's classes atop the Astronomy Tower, not to mention the Hogwarts Express train. We use a lift in a telephone box to access our Ministry of Magic in London, a department store window to enter St. Mungo's Hospital, wristwatches to tell time, radios that bring us news and music, and motorbikes to travel thither and yon.

Many of you spend holidays in the Muggle World, so you are familiar with an endless array of Muggle inventions, yet you do not bring these marvels with you to school because you know that our charms will disable most of them. Should it be this way? Surely your classes and dormitories would be more comfortable if the Hogwarts castle were insulated, if you could take notes on a laptop computer instead of using quills on parchment, if you could use lifts instead of the 142 stairways in Hogwarts, if you could… If you could come even close to being as creative as the Muggles, your education would be so much more complete.

Think on it. The Muggles do not need us. I think that the Wizarding World needs the Muggles. This does not mean that we should abandon our secret ways or magical influence. No, the Wizarding World shall always be kept apart, yet we should have access to whatever magic the Muggles next incorporate into their daily lives. There are still magical wonders we can perform, and these will be kept safe from the Muggles for a while. Accepting their innovations into our world does not mean that we open our world to them. With few exceptions, The Leaky Cauldron and Diagon Alley are still a significant secret part of the Wizarding World, and Hogwarts itself will remain completely protected from Muggle intrusion. It is, after all, the one place where any witch or wizard — including Harry Potter — can call home.

Because this is your first meeting of this class, I will not assign any homework, aside from the required reading of Mr. Highfield's book. Thank you for your attention. Off you go.

Works Cited

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