

How to distinguish between fact and fiction then fight the lies and BS in your life...

If you check out the latest in the world of politics, its impossible not to feel a big butterfly flapping its wings in hour belly, no matter on what side of the political arena are you at the moment.

We are inundated and practically drown in information hitting us at the speed of light from all directions. We all have the feeling that most of it is simply BS, meant to pull us to one side or another of a conversation, which most of the time makes little sense and even more, you have no idea how all this will impact your life in the future. "Most likely in a negative way", you think, if you are the "half empty kind of person", positive if not and yes most of us are simply confused most of the time.

Most of the confusion comes straight out of our inability to discern between fact and fiction. Yes, we can smell it, but can't really put our finger on it, the regular BS, the one you smell, when let's say some ruthless sales person picture the products they try to shove your throat and take your hard earned money, then vanish beyond your ability to ever meet them again. At least with sales you know (and possible respect) that most of them must make a living, as you do, put food on their table and they are pushed by their businesses, to make more profit at any human cost. Of course, (hopefully) we all have a job and probably there is a sales person (if you are not one of them), which you need to thank that you can take your hard earned money home, twice a month, if you work for an organization bigger than your own basement.

But then, there is the big BS, the one which is simply there to damage you, your reputation, your life, used as a weapon against you and the entire society by some few BS experts (some people call these artists, but I think it is wrong, artists create fiction not BS).

It is hard to exactly tell, how much damage the confusion generated by BS creates at the social level, but I feel its impact is huge. If so, can we do something about it? I've studied this issue for some time now and found that before the age of computers, (the things we

now can have and tuck in our pocket) there was no real solution, however, now we do have a chance to fight against BS and give ourselves the gift of being able to distinguish between fact and fiction and reduce if not eliminate the BS from the world.

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So, well, how do we do this?

First, we need to be able to distinguish between fact and fiction. To be able to do so, we need to clearly understand what fact and fiction are. You may believe you know, but please stay with me for a while and I may change your understanding of what they actually are (at least in the context of this article).

The definition of facts.

A fact is any piece of information created by a sensor of any kind measuring one or more parameters, from a well defined position in space-time and whose content can undoubtedly be authenticated by a quorum of “witnesses” at any moment in time and space, after the measurement, upon request.

Once the definition of fact is clear the notion of fiction is simply created by

exclusion.

Any information which is not fact is fiction!

OK, good, but then what is BS? In this context BS is linked how the fictional information is used to influence human minds.

BS is fiction disguised as fact and used to manipulate human minds mostly to engage in what I define “destructive competition”.

Yeah, I know that is darn mouth full and probably may have confused the heck out of you, yet it contains all the “requirements” for distinguishing the fact from fiction and allow for required devices to be built in order to actually make it reality. Let’s try bring that awful definition down to our world.

Why our own brain is not a good place to find facts?

You may ask yourself why the humans using their natural sensors eyes, ears, nose, skin plus our marvelous brain can’t be used to produce facts. The main issue is that our natural memory is simply designed to be flexible and adaptive. As such it will distort information stored in time based on the future experiences and human activities. The other part is the impossibility to “calibrate” the natural sensors so there is no way to tell if the information sensed by a human is same as by others when sensing an external phenomena. The last but not the least is that the information stored in our brains can’t be “extracted” (at least for now) and compared with information stored in other brains. Additionally the brain stores in same way and around same place fictional information (essential for life to exists) which can and usually do taint the sensed information in our minds. If you do not believe (and I do not ask you to) the above explanation start reading about what we already know about how human memory works. A great book I’ve read is “The memory illusion” by Dr. [Julia Shaw](#) ([Amazon](#)) .

I believe that both factual and fictional information is valuable.

I love fiction and I trust facts.

Fiction, is an essential process by which our minds “test” the future (and, in a wilder version, creates it) in order to define the present. Without it we would not be able to exist, we must always “guess the future” by using intuition (which is a form of fiction) to be able to do even the simplest tasks. In technical terms this is called “feed-before” as opposed to “feedback” which is reacting to events. Just to make my point imagine you are a boxer and you can only “react” to the punches of the adversary, it would be for sure a short fight...

Only when certain minds try to disguise the fiction as fact, the fiction turns in BS as a would be reverse alchemy process turns gold to shit, sorry for the expression but is an excellent analogy generating a mental image of what BS is.

Unfortunately, the reverse alchemy of BS is sometimes, or maybe too many times, a unconscious process. Without fighting hard against BS we can all generate too much of it and in time risk drown into it. This is even more obvious these days when we can generate more information than ever, yet the average person is basically unable to process almost any of it. On top of that, the digital information is notorious for how easy is it to be changed without leaving a trace. And this is a heaven for BS.

These days you can easily find on the internet pictures or movies which are almost impossible to tell if they were actually the originals the video sensor captured from the reality or were tinkered with. Some changes are subtle and technical in nature as changing the contrast luminosity of the picture, other are more insidious but kind of benign, like erasing pimples from your face, eliminating the “red eye flash” or even “thinning” your middle a bit to make you look better (at least to today’s standards). But then there are those changes which if used in justice may incriminate you without a cause like adding your face in a porn scene or depicting you smoking crack. The image editing tools are getting better

and better and already is just a matter of time to create a perfect “fake”.

When it comes to justice (or injustice via the justice system) some ill minds can use the system in their advantage in order to damage you, your life and the life of your beloved ones. By using BS in computers any of us are exposed to the digital bullying via skewed justice systems.

Why are facts defined as only the information we capture via sensors, and what is a sensor anyway?

If you pull your smart phone out of your pocket and take a look at what “sensors” are available you’ll probably find the following:

- **Sound sensor (the mike of your phone)**

Those sensors measure the movements of a thin membrane which is moved back and fourth by the air around the phone. When we speak, or there is sound around the phone, vibrations of the air are creating variation in pressure on the mike’s membrane sides. The membrane then moves with the sound and transmits that movement to an electronic subsystem converting the movement in electric currents. The amplitude of the membrane movement is converted proportionally in voltage or current. Next a digital subsystem measure this electric value (voltage or current) and generates a series of numbers at equal time intervals. Each number is represented by using a number of bits, and the more bits per number the best the “quality” of the sound. In a regular phone 12 to 16 bits are used. A bit is simply the basic unit of digital information is a ‘0’ or ‘1’ or maybe ‘true’ or ‘false’ or ‘exists’ or ‘not exists’ kind of thing. **These bits have no “smell” no weight, you can’t see them directly they are just darn simple numbers! And numbers can be changed without living a trace** unless we can do something about that! (see further down this article).

- **Video sensor (your camera)**

The video sensor works in principle in the same way (from fact/fiction perspective). The light is sampled by an array of microscopic sensors each sensor generating a

number representing the intensity of the light it measured at a moment in time. For the same location (x,y) (top,down) on the array there are three sensors “specialized” for Red, Green and Blue spectral domains. The sensor generates an image which from digital perspective is the same kind of string of “bits” as in the case of the sound sensor, the difference is that the image sensors generate way more data in the same time interval and how we interpret the bit string is different. **Yet again those bits can be changes without living a trace!**

- The GPS

The GPS measures your position on the surface of the earth and gives you a stream of three coupled numbers (longitude, latitude, height from sea level)

- Accelerometer

Generates measures and provides a stream of three numbers representing the acceleration your phone has as you handle it on three directions (x,y,z). As with the other sensors same digital bit representation same fake-ability issue.

- Magnetic sensor

Also a tri-axial (x,y,z) stream of numbers measuring the magnetic field strength around your phone. Same digital issues as with all other sensors.

So, all the sensors you have in any device around you (smart phone, tablet, computer, watch etc) all have the same problem. They generate bit streams which are fake-able once they exit the sensor chip. Even worse, once the information is stored in your phone’s memory it can be “attacked” by malicious software executing on your phone or when you publish pictures or video via public sites that information is stored in those server memories (disk, etc) and are accessible to be changed by few but not zero amount of people.

This means that ALL the information currently generated by the any of our digital sensors can be subject of modification by us or other people for various reasons. Clearly some information may be more valuable than other and its value can change in time. To get a sense of that just look at the 2016 US election drama and see how information was used to attack the each opponent. Also see how video from cell phones was used in various police shootings. Things are getting serious, away is the time of innocence when only cute pets

were the subject of attention.

More, these days you start to hear buzz words like “big data”, “cloud”, “machine learning”, “artificial intelligence”, etc. All those new technologies are wonders and can help everyone if used right, or lead to something I coined as “**Informageddon**” if not. The key for all those systems is the ability to differentiate between fact and fiction and maybe later weed out the BS. At this moment in time though they can’t and that can lead to miss-use and abuse.

“Enhance”!

By now you must have seen already a bunch of sequences in movies where low resolution images are first shown only to give the lead character in the movie the chance to say “enhance”. An so, we are brainwashed to think that we can create information out of nothing! Yes that is exactly what “enhance” is. Let’s make it clear, if a sensor measures some parameter with a given precision then there is no way you can retrieve the missing information other than by using interpolation, which is a mathematical way to guess. But guessing is guessing and when you “enhance” you must be aware that you are mixing fiction (the interpolated info) with facts (the actual data). The resulting info is not factual any more! The same issue is when the sensor measurements overflows or measuring overlapped output of multiple activities.

What can we do about it?

The same technology which generates the issue, can if used fix it and backed by the existing digital cryptography technology and the force of multiple devices on public networks can help differentiate the fact from fiction.

Why do all this anyway? What is so bad what can happen to me?

Imagine the scenario where someone posts a picture or movie of you taking part of a criminal activity. Without a way to verify the authenticity of the information the authorities will at least need to contact you and you’ll have to spend some time explaining and trying to defend yourself. Even if you can prove the picture was “doctored” or edited by other means you still had to waste some of your time (and lots of money) as well as the officers who were

mislead in the first place. This scenario is more and more plausible and if you are a public figure part of an election process or in a position of power then it is more probable you may experience this type of issue. However, all of us can be impacted sooner or later and that should be enough to worry you.

You may say, well its simple I don't need special apps I can simply choose to live offline to stop using those dreadful devices and it will all go away. Unfortunately this will not work unless you'll start living under a rock, literally. If you stop using the technology the others around you will most likely not and you can be a target without even knowing it! How is that going to save you? The only solution is to understand the dangers posed by technology, use it correctly and in your advantage.

The solution or... How can it be done.

The bits and pieces required to solve this issue already exists. The cryptographic technologies notable, the so called "public key cryptography", the existing armada of smart phones and the newly emerging cloud solutions are the very components we can use to finally give ourselves the gift of distinguishing fact from fiction.

Of course, things are slightly more complex (as usual) but there is no "show stopper" here. We just need to get down to business and create the actual systems. How would this "look and feel" for the regular (non IT literate person). As with any other case you'll need to download an app into your phone for regular usage or buy some small box you plug it in your phone or your home network for a "rock solid" secure case. Then you enable and keep all your phone sensors working, or have a more "power smart" way to select what sensors are used when. The phone will record and keep the sensor info secure (encryption) "distillate" chunks of it based on well defined time intervals and "share" the distilled information with other phones which so will "witness" it (your data/facts). The cloud can "save" all this info for later use all under your "key" to keep the privacy strong.

Then when someone will claim you were in a bad place or a bad company, or you simply wish to send some pictures or movies to a group of friends or the media they can now verify

if the info you sent is fact or fiction (you changed it, or someone else did without your consent).

Since you save the information in the cloud and keep it there forever. You can come back to it and prove your innocence even after you are no more! However this info can be used by yourself for many other proposes than avoid prosecution.

The experimentalists scientists will now have a tool which can be used to validate experimental data as it too can be subject of “doctoring”.

What if someone gets a hold on your stuff from the cloud? How secure is this?

By using strong encryption and strong encryption key management you will always be in control of who can access your information. By using this technology in fact you are safer than if you don't use it as unprotected information can be changed and you can't prove it.

Unreliable media!

Hmm... Media, we really have no clue what to believe these days. One thing is clear, media is a business and for any business the first pillar is to maximize its profit. If you think otherwise you should take a hard look at your thinking cause is, well... flawed. So, any business, in order to survive and even more to thrive must truly understand its market its customers. With media, that is, what you are looking to hear or see. Unfortunately most of us are biased towards bad, hype, buzz, abuse, and yes fear. We simply choose to be “informed” more about what can hurt us than what can help us, we tend to watch the half empty than the half full and yes media MUST give you what you are most likely to consume. Are you still surprised that WE ALL ARE THE REASON all this crap hits us everyday?

When people are asked what they wish from media almost all of us say we want FACTS! Unfortunately, there was no reliable way to distinguish between fact fiction and BS, until now...

The future of the media is clearly split in two main roles, first as an information of any kind collector second as processor and distributor. Nothing new you'll say they already do that. Yes they did but the way the information is acquired has changed. The media can't control (good thing) the collection or production of information. These days you can "Google" or use other search engines (smart thing to do) to find almost anything. The media these days has the problem of information overload and on top of that our ability to distinguish between fact fiction and BS is on a historical low.

So, the solution I'm proposing will give you the solid foundation for finding and proving facts. This is a fundamental ability which media can use to build its analysis on and generate predictions based on simulations of the potential future paths for all of us. When this happens we will at least be able to separate the fact from fiction and eventually decide when that fiction gets to close to the stink of BS and discard it.

Even more important our abilities to process vast amount of information will improve by starting to use the "Cloud" and "Big Data" abilities which all big information technology players in the market are starting to make it available for use.

Many-to-Many!

The future is bright!

If we will be able to distinguish fact from fiction, we can accomplish a lot and make big steps towards a global democracy. The issue is that **the democracy only works when we all are able to listen, understand and appreciate each others distinct abilities, when we all nourish our differences as global strengths and not as weakness.**

In order to do so we need to master the "many-to-many" type of communication. If you think of a scheme which classifies communication based on volume we can identify four classes of communication "**one-to-one**", "**one-to-many**", "**many-to-one**" and "**many-to-many**". We think we mastered the "one-to-one" kind yet when we look at the aftermath of many of ours one-to-one discussions we realize we are at best mediocre in how much information are we

able to receive and understand or verbalize and transmit. We toy around with “one-to-many” in media and I say “toy” as we now know that most of us do not trust media any more. That is a monumental failure of our ability to handle the “one-to-many” type of communication. The “many-to-one” is even more questionable as the main use of this pattern is elections, pooling and “en mass” espionage. When it comes to “many-to-many” we are really losing it for good. There is not even “a thing” in most minds let aside to try tackle it. **Yet this is the only way we can become “something rather than nothing” at the cosmic and universal scale. You may think this is not important but somehow down there in your soul you know it is the most important thing you’ll ever be part of.**

The future is bright!

... only if you stop chasing BS and give facts and fiction their right places in your mind...

Just For Fun!

John Oliver: Last Week Tonight on Scientific studies..

Real Time with Bill Maher: New Rule – Lies Are the New Truth (HBO)...

[BS definition from Wikipedia](#)

[Article verification](#) original: [here](#)

The original post had the mistaken title “Fake, Fiction and BS”, the browser editor “auto correct function” and my temporary stupid state made it possible. I fixed the title, though the signed version still has the original mistake, as it is a fact now! ☐ ...

For further studies and examples of “what on earth” on how people can produce information that passes as “factual” ([Example1](#))

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