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Rumours and Lies : Science and Beliefs among the Flight of Claims in Homeopathy and Allopathy

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In this sociological study of rumours, it is important to look into the area of plentiful knowledge, where truth and facts are expected to be the foundation. The presence or absence of rumours depends on the possibility of the existence of lies in this realm. Science and research have led to the emergence of plenty of knowledge and verifiable facts. Where there is ample of verified or researched information or knowledge, the possibility of rumours seems unimaginable, though falsifiability is the essential character of science. But it becomes difficult to find out true information and false information since this area of knowledge is abundant and considered to be correct or exact. To analyze rumours and its existence in the area of plentiful knowledge, we have looked into the area of science by taking the cases studies, based on secondary data, of Homeopathic and Allopathic medicines, as

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there have been several works and research concerning the reliability and scientificity of the same.

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1. Introduction

Where the techniques used in finding any data, information or theory gives the utmost importance to proof, precision, verifiability and reliability, there the realm of knowledge is considered to be constituted of correct information and facts, and it is supposed to be closer to the truth. This vast area of well-researched knowledge is constituted by plenty of information, data, theories and discoveries. This area of knowledge is referred to in this study as the area of plentiful knowledge. It is trusted to be constituted of the correct, logical, well-researched, factual and hence flawless knowledge.

Trust can be based on many factors such as the reputation of a person, the appearance of a person, family, schooling, education, qualification or any authoritative figure. The questions that arise are how is this trust formulated and how information travel or is received by the people based on this trust. Usually, the information passed on orally is considered to be more distorted than the written or documented work. It has several reasons including memorization, passing it on to the audience in that form, and no chance of proofreading, as mentioned in detail by R. C. Culley (1963). But even with all the supposedly strong evidence and proofs, and arrival to the realm of Reason, we cannot be sure that the trust in science or documentation of something is unquestionable or undisputed, as it is Reason that enables us to question the validity of anything and everything. Not only Reason but reasoning also has an essential part to play in deciding what to be sure of and what not to be. In everyday lives, people tend to simultaneously work with Reason and reasoning, which can also depend upon sources they have trust in or the way they get socially conditioned.

Science and research have led to the emergence of plenty of knowledge and verifiable facts. Where there is ample verified or researched information or knowledge, the possibility of rumours seems unimaginable, though falsifiability is the essential character of science. Nevertheless, it becomes difficult to find true information and false information since this area of knowledge is very abundant and considered to be correct or exact.

2. Lies : Of Science and/or of Culture

Since rumours can pass off as truth or unverifiable traveller, it can be seen that they can be developed in many domains, and can be discernible as well as imperceptible. It depends on the domains which are prone to concoction and lies. According to Bailey (2019), people exercise their work and social life through basic lies. Barnes writes that the areas in which lies are found are science (natural and social sciences), cultures, warfare, politics, advertising, bureaucracies, history and tradition (Barnes, 1994). In the context of knowledge, this paper is aimed to look at the existence and role of lies and their relation with rumours.

Barnes (1994) defines lies with respect to the intentions of a person. He defines lies as false statements made by someone with the intention to deceive (Barnes, 1994).

> "Truthfulness and deception, on the other hand, belong to the moral domain of intention. If we intend to deceive, we are acting untruthfully; if our untruthful act consists of making a statement intended to mislead, we are lying" (Barnes, 1994 : 12).

He writes that it depends on the intention of the liar, who could have merely misunderstood the state of the world (Barnes, 1994). Barnes (1994) writes :

> "… allows for a statement to be perceived incorrectly as a lie by those who hear or read it, when in fact its originator had no intention to deceive... errors and misunderstandings do not necessarily constitute lies, provided they arise in good faith, even though in the speech of young children, and in some popular usages, they are sometimes labelled as lies" (11).

According to Barnes' (1994) definition, lies can consist of either true or false statements or statements that are partly true and partly false. Lying, hinged on people's molar intentions, is an embedded and internal part of their lives and the societies they live in. According to Barnes (1994), a lie is formed with the knowledge of a person and her/his intention to deceive, and a statement made without the intention does not count as a lie. Here, a statement told 'with the knowledge' of a person, or intentionally, to mislead someone is defined as a lie. Barnes' definition of a lie ignores the falsity or truth of the statement; he writes that a lie is not defined merely as the "opposite of telling the truth", but they can be either

true or false statements, or partly true and partly false (Barnes, 1994). He argues that the person delivering a statement could be mistaken about the state of the world or of her/his own mind, and explains this by giving the example of early chemists and scientists including Ptolemy who believed the idea of the sun revolving around the earth as true and expected people to believe that, which thereby did not make his ideas a pack of lies (Barnes, 1994). He writes, "errors and misunderstandings do not necessarily constitute lies, provided they arise in good faith, even though in the speech of young children, and in some popular usages, they are sometimes labelled as lies" (Barnes, 1994 : 11). His work draws our attention to many other definitions of lies given by various authors and the categories that exist on the basis of those definitions, such as social lies, benevolent lies, malicious lies, harmless and not-so-harmless lies (Barnes, 1994).

Many contexts and areas in which people lie or tend to lie are discussed in his work. The difference between politics and other domains is that in the political domain, a liar is not required to have a good memory and the lies do not need to be consistent (Barnes 1994). "In an election, each party accuses all others of trying to deceive the gullible electorate. The elector, suffering from a surfeit of propaganda from all sides, cannot distinguish between sincere promises and seductive lies" (Barnes, 1994 : 31). In the other domains, he draws our attention to the importance of good memory to deceive, since the liar should be consistent with her/his lies. He goes on to write, "In many other domains where deceit is attempted, an appearance of consistency is called for; liars should therefore have good memories, so that they avoid contradicting themselves and exposing their deceits" (Barnes, 1994 : 31). Because of the consistency in the lies or the verification of incorrect information as correct information, many times, the deception remains unseen while the people of society get deceived. So, a rumour remains a rumour or might become a fact for society or even a narrative at some point in time, depending on trusted and credible sources.

In many cultures, particular types of lies are institutionalized as they are normalized and not looked down upon. Barnes explains that there can be different values placed on lies with regards to the context and culture, by giving examples of Lebanon, Greece, Russia, France, India, industrialized community, non-industrialized communities and so on (Barnes, 1994).

> "In Greece, the practice of eavesdropping, gossiping about neighbours, inventing scurrilous explanations of events, lying to destroy another's reputation were common occurrences and were accepted as legitimate strategies to follow when defending personal secrets and uncovering those of other…but the victims of these ploys could appeal to the commonly accepted norms to condemn the deceit practised on them" (Barnes, 1994 : 72).

Many of these lies become rumours which can get converted into beliefs. Rumours also spread when there is a desire to prove the belief as real and true to oneself. It is difficult to accept a message or information which contradicts one's set beliefs or ideology and much easier and smoother to accept whatever coincides or overlaps with those beliefs. The perception of people is important to focus on. The question of why a story or information can become a narrative, regardless of being false or true, should be addressed.

Barnes (1994) explains that though we expect science to be the last place where lies and deceit could be found, the historians of science reveal that this is not the case. Weinstein (1979, quoted in Barnes, 1994) remarks that science is an institution where the value of always being in pursuit of truth dominates, unlike the other domains which consist of endemic lying.

In the following sections, it can be seen that there can be many arguments, claims and debates in the area of science and technology, which is otherwise expected to have clear-cut outcomes without any lies or obscurity. Science is an area, where there is a constant verification of the claims by the colleagues (Merton, 1984, quoted in Barnes, 1994), and hence it is believed to be a trustworthy area which is abundant with correct information. But Barnes (1994) goes on to give the example of Ptolemy (mentioned before) who "appropriated as his own data collected by someone else; he fudged his data as well to make them appear more supportive of his thesis that the sun moved round the earth and the planets travelled in epicycles" (55).

Newton and Mendel amended their data to gain more support for their theories (Barnes, 1994). Barnes (1994) writes :

> "Presenting data modified in this way as if they were the true outcome of observations might be deceitful, but is not necessarily so. The laity may be unable to see what the data mean until they are cleansed of the likely effects of measurement and other kinds of error" (55).

Babbage (1830) considers the process of 'trimming' not as harmful as 'cooking' the data (quoted in Barnes, 1994), for example, the incident which happened with Dr Beringer, where his academic opponents "manufactured spurious fossils to mislead him, was unmistakably deceitful and malicious" (Barnes, 1994 : 55).

There are cases of manipulation of data as well as plagiarism which even go unnoticed many times over a long period of time.

> "Four of the cases listed by Broad and Wade seem to have been instances of plagiarism, which is akin to lying, and though not all the others involved lying, they were all, if widely held suspicions are in fact justified, cases of deceit" (Barnes, 1994 : 56).

But there is a constant need of the natural sciences to be replicable and verifiable. It is the nature of natural science to deal with everything with precision and exactness. This is where it differs from the social sciences, as in the latter's case, it is very difficult to be replicable, precise, exact and verifiable all the time. Barnes (1994) writes that this is the reason that makes it a little easier to find out and claim falsity in natural sciences, whereas it is difficult to claim the same in the social sciences. So, what is it that leads to the presence of lies in natural sciences? Barnes (1994) writes, "The commitment of natural scientists to dominant paradigms, the emphasis on the priority of discovery, and the importance of early publication for professional advancement combine to provide incentives for deceit as well as for scientific progress" (57).

While natural science claims its superiority over the other disciplines and approaches to exactness and finding facts and truth, it is imperative to see whether this domain is in actuality only concerned with the exact knowledge, or if there is a possibility of lies and deceit to be present somewhere or the other, for various interests of the scientists or the scientific community, as suggested by Barnes (1994).

In this study of rumours, it is important to look into the area of plentiful knowledge, where truth and facts are expected to be the foundation. The presence or absence of rumours depends on the possibility of the existence of lies in this realm. Lies and deception are major aspects of rumours. Science and research have led to the emergence of plenty of knowledge and verifiable facts. Where there is ample of verified or researched information or knowledge, the possibility of rumours seems unimaginable, though falsifiability is the essential character of science. But it becomes difficult to find out

true information and false information since this area of knowledge is abundant and considered to be correct or exact. To analyse rumours and its existence in the area of plentiful knowledge, we will look into the area of science by taking the cases of Homeopathic and Allopathic medicines, as there have been several works and researches concerning reliability and scientificity of the same. There exists plenty of discussions, debates, claims and counter-claims in journals, books, newspapers, articles, audio-visual texts and so on. The existence of plentiful knowledge can be known from the plethora of works and researches done in these areas.

3. Truth or Dare : Homoeopathic and Allopathic Medicines

Another discourse that is very popular in the realm of science is about allopathy and alternative medicines like homoeopathy. Allopathic medicine is considered as evidence-based modern medicine. Allopathy "roughly refers to treating a symptom with its opposite" (Iftikhar, 2019) and is focused on treating the symptoms of a disease. It follows the procedure of having a hypothesis, followed by experimentation and then basing the conclusion on the result. Because it follows the methodology that is more popular and legitimate in the field of science, it is considered as more scientific and thus reliable in the realm of modern science. These medicines are considered to be very effective in the cases of emergency.

On the other hand, homoeopathy means treating "like with like" (Iftikhar, 2019), where minute quantities of those drugs are prescribed which can create symptoms similar to the disease itself. Vigano et al. (2015) discuss that medicines are personalized according to the patient as they take the premise that "...it is a 'holistic' medicine, programmatically aimed at the whole person in its entirety and individuality" (7) while trying to study the scientific basis of homoeopathy.

"The homeopathy treatment mode is a way of substances that identifies the symptoms of a disease and have a curative effect on a sick person, when the medicine is given in very dilute quantities" (More, 2016). These medicines are considered to be non-toxic, which improves the immunity of the body while gradually curing the root cause of a disease (More, 2016).

The therapy of homoeopathy was founded in the 18th century by Samuel Hahnemann (Vigano, 2015). The popularity of homoeopathy

increased in the 19th century, as it was proven to be very useful in curing people during the outbreaks of the epidemics (Vigano, 2015). In the succeeding centuries, this field of medicine has been surrounded by debates and controversies due to the contentions based on its scientific basis (Vigano, 2015). "Homeopathy is a clinical-therapeutic method which aims to restore the level of health of some organism (human, vegetable or animal)" (Vigano et al., 2015 : 8).

The principles of homoeopathy treatment were first laid down by its founder Samuel Hahnemann in very important work 'Organon'. These are the principles of experimentation or proving, similarity or 'law of similars' and the administration of minimal doses (Hahnemann, 1842, quoted in Vigano et al., 2015).

> "The homeopathic doctor's objective during a clinical examination is to find a remedy whose own pathogenesis includes the symptoms presented by the patient during his illness. To reach this objective the doctor uses two instruments: the Materia Medica and the Repertory. The first is a collection of signs and symptoms (physical, psychological and sensory) caused by administration of a given substance in a high percentage of healthy subjects during proving, while the second is in practice a list of symptoms and the homeopathic remedies associated with them" (Vigano et al., 2015 : 9).

Allopathy and homoeopathy are shrouded with the controversies around which of the strands is the real medicine or better medicine. There have been debates around whether homoeopathy is really science or just a myth or bluff. Many claims have been made about homoeopathy being unscientific and dangerous, just working on the 'placebo effect'. Placebo effect means that the beliefs of the people that the medicine of treatment would treat and cure them can itself lead to the healing process. While at Panjab University in Chandigarh, Ramakrishnan, the President of the Royal Society, and a Nobel prize winner in Chemistry, said : "No one in chemistry believes in homoeopathy. It works because of placebo effect" (Sharma, 2016).

Though the controversy around homoeopathy is "mainly because of its use of highly diluted medicines, but there is growing evidence that is not a mere placebo" (Vigano, 2015 : 7).

Scientists and scholars who vouch for allopathy claim emphatically that it is superior to all types of "alternative" or traditional medicines. They openly state that homoeopathy being

medicine is a myth. National Health and Medical Research Council (NHMRC) assessed the effectiveness of homoeopathic medicines and concluded :

> "Based on the assessment of the evidence of effectiveness of homeopathy, NHMRC concludes that there are no health conditions for which there is reliable evidence that homeopathy is effective. Homeopathy should not be used to treat health conditions that are chronic, serious, or could become serious. People who choose homeopathy may put their health at risk if they reject or delay treatments for which there is good evidence for safety and effectiveness" (NHMRC, 2015 : 6).

The scientists who discourage homoeopathic medicines also call it pseudoscience. Edzard Ernst (2016) wrote an article titled 'Reject the Pseudoscience of Homeopathy', where he writes about the Declaration on Homeopathy, Freiburg, which states a few points like, "Homeopathy is not medicine" (Ernst, 2016), "Homeopathy should not be given special status" (Ernst, 2016), "Self-deception by patients and therapists should be acknowledged" (Ernst, 2016), "Embrace science" (Ernst, 2016). Anthony King (2018) writes that homoeopathy is a 'bad science' as its benefits are based on the placebo effect. He quotes David Shaw, a bioethicist, who says that homoeopathy does not contain any active ingredient, and thus "It makes false promises about its efficacy" (King, 2018 : 128). In another article, 'The debate about Homeopathy is over. These Verdicts Prove It', Ernst (2017) presents an 'evidence-based' argument against homoeopathy, saying that homoeopathy does not follow science and it cannot be scientifically proven. Homoeopathy is dismissed as science and the medicines are claimed as just being sugar pills. On the other hand, some people claim otherwise and argue that homoeopathy has a scientific basis and is effective.

There have been counter-claims which consider homoeopathy as a more effective and a safer strand, as opposed to allopath which is seen to have side effects without causing the root problem of a disease (More, 2016). There are also claims that homoeopathy has been studied scientifically and their effects cannot be denied. "There is a significant body of clinical research including randomized clinical trials suggesting that homoeopathy has an effectiveness in curing many symptoms and in improving the quality of life of patients. Cohort studies, observational and economic have produced favorable results" (Vigano et al., 2015 : 7).

One of the researches done in the field of homoeopathic medicines to understand how it works is based on the theory of "memory of water" by "understanding whether and how water may be able to retain information" (Vigano et al., 2015 : 12). "More recent studies suggest that in appropriate circumstances, aqueous or hydroalcoholic solutions can memorize and transmit information about substances which have been progressively diluted in them" (Vigano et al., 2015 : 12). Another research involves hormesis, which explains the principle of similarity. "Hormetic responses are characterized by modest stimulation of a specific function at low doses and inhibition of the same function at high doses" (Vigano et al., 2015 : 12).

The Vigano et al. (2015) conclude with the suggestion that all types of methodologies should be employed to study the homoeopathic therapy and none of it should be undervalued.

There is a lack of trust in homoeopathy medicines. Though, in the cases where people tend to depend on it, in severe cases or cases of emergency, they resort to allopathy. However, recently, people have started inclining towards homoeopathy and herbal medicines because of the side effects of allopathic drugs or the lack of trust in those medicines too. They are distancing from the modern/ allopathic medicines because of reasons like "only symptomatic relief is experienced" (Jawla, 2009), " 'completion of treatment' is never a reality, more so in chronic ailments" (Jawla, 2009), "frustrating side effects" (Jawla, 2009), "high cost involved" (Jawla, 2009). They seem to be resorting to homoeopathy because of easy administration of doses and no side effects (Jawla, 2009). From the above discussion, we can find how ambiguity and controversy surround the areas of homoeopathy and allopathy.

4. Extrapolation : Science, Praxis and Hegemony

Praxis, simply, is the confluence of theory and practice. Freire's elaborate work on praxis is especially important in the quest to transform the education system, as his ideas centred on the awakening of human consciousness and the pedagogy that could help in the liberation of the oppressed and poor (Shih, 2018). According to Freire ([1970] 2005), action and reflection are the two components of praxis which help in bringing change, and praxis does not exist if either of the two components is absent. He writes, "But

human activity consists of action and reflection: it is praxis; it is transformation of the world. And as praxis, it requires theory to illuminate it. Human activity is theory and practice; it is reflection and action" (Freire, [1970] 2005 : 125). He further writes that human activity "cannot be reduced to either verbalism or activism" (Freire, [1970] 2005 : 125). Shih (2018) writes that Freire ([1970] 2005) emphasized that when there is an improvement in an oppressive situation, the individual's consciousness awakens, which in turn gives them the ability to perceive the living world. Explaining the work of Freire ([1970] 2005), Shih (2018) writes, "In the context of oppression, the oppressed cannot be conscious of awakening… when the oppressed are in an oppressive situation, they are less conscious of awakening" (66).

Freire ([1970] 2005) distinguishes between 'revolutionary praxis' and 'praxis of the dominant elites' as they are entirely in conflict and opposition with each other. Revolutionary praxis denies the idea of people absolutely following a leader, an idea which is the essence of the praxis of dominant elites. He writes :

> "Manipulation, sloganizing, 'depositing', regimentation, and prescription cannot be components of revolutionary praxis, precisely because they are components of the praxis of domination. In order to dominate, the dominator has no choice but to deny true praxis to the people, deny them the right to say their own word and think their own thoughts" (Freire, [1970] 2005 : 126).

When there are reflection and action working together, people make meanings, interpret and understand how they should act and how an action could be analyzed. This is a process of understanding and creating knowledge, and hence praxis is a very vital part of human society. It is important to transform reality by critically reflecting on what is going around and take action on the basis of that (Freire, [1970] 2005).

Bourdieu (1990) talks about praxis in relation to social action. He writes, "…it aims simply to bring to light the theory of practice which theoretical knowledge implicitly applies and so to make possible a truly scientific knowledge of practice and of the practical mode of knowledge" (Bourdieu, 1990 : 27). Taking from Bourdieu, praxis is defined as "an activity by which individuals produce and reproduce society in its cultural, social, and economic dimensions"

(Öztürk, 2005 : 144). Praxis lies in between an individual's action and development of her/his society, as "individuals' action by praxis becomes part of societal development" (Öztürk, 2005 : 144).

In the area of science, praxis is an essential part. Theory and practise are the concepts that are tried to be converged for the development of scientific knowledge. Understanding or analyzing and acting in relation to it and vice-versa is an important part of this realm.

While discussing the construction of an adequate science of practice, Bourdieu (1990) writes that the biggest barrier in front of it is :

> "the solidarity that binds scientists to their science (and to the social privilege which makes it possible and which it justifies or procures) predisposes them to profess the superiority of their knowledge often won through enormous efforts, against common sense, and even to find in that superiority a justification for their privilege, rather than to produce a scientific knowledge of the practical mode of knowledge and of the limits that scientific knowledge owes to the fact that it is based on a privilege….. All objectivist knowledge contains a claim to legitimate domination" (28).

In the present times, the most dominant authentic and credible source is the institution of scientific knowledge, as rationality is linked with the scientific approach of knowledge. Though scientific knowledge has been a victor to a great extent, there are many contestations, accusations and a lot of doubts and disbelief. Every individual has her/his own trusted source, and there are varying approaches of thinking which are consistently challenged while questioning the truth behind any scientific claim. For example, there have been suspicions about the dangers of harms of using some technique or technology. There have been ongoing conversations and debates about the concerns regarding environmental degradation. How would the common public decide if a technology is truly as safe as the scientists claim it to be, and is it truly worth taking a risk? Does the common public close its eyes and believe in a credible source without questioning its authority? The answer is not an unambiguous yes or no as the diversity of thought and socialization generally provides room for contestations. In the middle of this debate, many rumours emerge. Rumours emerge out of doubt and the inability to verify. The doubt is a product of various historical and contemporary

phenomenon, as well as the social condition of a person vis-à-vis occupation, religion, privilege/ disadvantage etc. It can also be the product of the critical mind which questions the claim of everything, as a rational mind would. Though rationality and science go hand in hand, a distinction is important to make. There is also the necessity of seeing the blurring line between rationality and irrationality. Weber gives the concept of the iron cage where he talks about how people act in a capitalist society where actions get shaped by the rational bureaucratic system (Weber, 1968). Ritzer (1992) talks about the irrationality of rationality, where he says that rational systems may not be reasonable systems as there have been many negative outcomes in the rational system. This trap encircles the people which in turn makes the rational system look irrational, as, after a certain point, people act not out of rationality but because of the compulsion and habit of acting a certain way. We might not realize when our rational actions trespass the line and enter the area of irrationality. So, every source is questionable and rumours can either channel those doubts, questions or distrust, or they can be the product of those doubts and suspicions.

With the overlap and distinction of the sources, we need to see how a piece of information travels, how different people react to different information according to their sources which might or might not be based on their prejudices. Factors like training, interaction, communication, local and general knowledge, go into the making of those sources. In the arena of science, everything has or should have a scientific explanation. In other words, whatever can be proved using experiment and observation becomes a fact, until falsified or modified using the same kind of systematic knowledge. However, the scientific field, which claims expertise in most of the fact-making and truth-making, is not immune to the production of false information or rumours, which has been explored in this paper.

There is a necessity to look at the level of importance that an activity, writing or utterance holds for the other people. Depending on their relevance, rumours can have direct, indirect and no impact on people. A rumour can be dispersed with dubious or malicious intent, or the dispersion can be nonchalant and out of curiosity. It can also keep getting diffused among people to fill their leisure time or become part of the conversation during the work-time to fill in silences, to strike a conversation merely, make a bond, or, as mentioned before, out of curiosity and human nature.

Rumours are forwarded using either systematic or unsystematic approaches. The systematic approach of creating a message or information here means applying a set of objective steps such as observation, data collection and research, as is done in disciplines which require training. The unsystematically formulated messages/information are those which are instantly or randomly formulated, without using procedure entailing objectivity. The former condition is suitable for formulating theories in the field of established schools of knowledge or disciplines. We investigated whether rumours can be created in this kind of knowledge centre where there is plentiful, well-researched knowledge. Scientific knowledge is supposed to always leave scope for being falsified, and this same characteristic makes it relevant and acceptable as a theory, as it increases its credibility. Popper rejects the idea that science is about confirmation; instead, he asserts that science is based on refutability, testability and falsifiability; and he calls the disciplines which are not based on them pseudo-sciences, which happen to 'stumble upon truth' (Popper, 1963). The disciplines which evade this falsification by building up a new theory in order to support the pre-existing theory become irrefutable and untestable, and evade falsification; Popper accuses them of using pseudo-empiricism (Popper, 1963). The Marxist theory of history, the psychoanalysis and individual psychology were his primary targets as pseudo-science. According to Popper's idea of science, falsifiability is the core of scientific knowledge. If we analyze the credibility of science on this basis, we would see that the correctability or having a scope for rectifying/correctifying itself after being falsified, makes it reliable/credible and closer to the truth and fact. Therefore, the area where there is plentiful knowledge is assumed and expected to be credible. So, how does this credibility of science come into question? It happens when science is not exclusive of the politics of truth, power and other political-economic factors. It can also happen when scientists choose to take the path of confirmation of theories rather than falsification. What else makes it less credible, is the false information, the deadlock among contradictory claims around a technology, policy or theory. As we have discussed the examples of genetically modified crops and Higgs Boson discovery, we can see that the credibility in this field can also come into question because of the rumours this can give rise to. The other trusted sources can drive or veer the thought process of the people. The theories or the

knowledge created through the systematic procedure can at any time be proved incorrect; however, this property cannot designate them as rumours. They are theories that are just falsified following a scientific and objective procedure. It can go through the stage of being a rumour when it comes in contact with the common masses. What we mean here is that a theory might not be a rumour, but it can become a rumour if it circulates among the common mass, where it could be distorted or misunderstood. It can be contested, debated, speculated about, exaggerated or distorted.

5. Trimming and Cooking in Science

Trimming and cooking are the two ways of lying or fabricating a discourse in natural sciences, as discussed by Barnes (1994). However, the major process involved in this debate is extrapolation. In the area of sufficient knowledge, verifiability, reliability and proof through experimentation hold the utmost importance. However, when there is obscurity, due to claims and counter-claims, people try to infer results. They start expecting a particular kind of result from whatever knowledge is available to them. This extrapolation is the basis for many conjectures or speculations that, in actuality, could be flawed and incorrect.

As we looked at the kind of prominence that science has with regards to knowledge, we discussed that there are many organizations and people who call the claims in the scientific field hoaxes; hoaxes which are meant to mislead people. Since there are many ways of constructing and acquiring knowledge, it is not possible for everyone to go into the sources employed in all the fields and disciplines. People trained in specific fields are closer to the sources and the process of creation of information. There are many accomplishments in the scientific or non-scientific fields which come to the notice of the public in general. However, it is imperative to verify those claims and find if they are reliable. There are many factions of people who believe that masses are being hoodwinked in these different fields of knowledge. A lot of obscurity clouds the capability of a person to differentiate a fact from a hoax. The (other) credible sources in a particular discipline are the alternate voices and sources within the same area of knowledge. For example, the only credible sources in the affairs of science are the scientific communities. Here, the speculations could become concrete especially if the claims are disputed by any reputed faction in the scientific community only.

The planets, satellites, space, extra-terrestrial objects, chemical reactions, electricity, atoms, technology and other plethora of affairs are the portfolio of the scientific community, and whatever reputed organizations discover, add or subtract from the scientific knowledge of the world is considered to be a fact. Still, we have to question if all of them are really facts. People always speculate about new discoveries and findings, which can be based on the scientific or unscientific knowledge acquired by them. They can find inconsistencies in these discoveries and findings, using this knowledge. The speculations can be based on the traditional/religious texts which give different arguments. It can also be objurgated because of any other bias or inclination towards the 'trusted sources'. The fact that the discoveries could be authentic or based on lies, makes us think about the reason why lies exist in the realm of science. One of the important reasons for the existence of lies in the realm of plentiful knowledge is to have hegemony. Here, a look at the concept of hegemony is important, as neither the scientific nor the non-scientific realm are excluded from it.

In the scientific world, empirical evidence is of utmost importance; hence, scientists work towards finding them, whereas it does not hold that much importance in the non-scientific arenas. This creates a tension between what is true and what is not, based on these areas. The evidence, for example- photographs, audios, videos- gathered to support the claims are crucial for making the claims close to being a fact because what is in contact with the sensory organs is more believable for the common masses. Media plays an important role in creating doubt or establishing a truth. It also depends on how credible media is for the people. Many people would be critical of the evidence, which would lead them to speculate. The speculation can also be backed by evidence, which can, as mentioned before, belong to any trusted source. The speculation could also be due to the timing of the formation of discourse too, as a very essential factor which gives rise to any claims, is the 'timing' of these claims. The formulation of a certain kind of knowledge needs a favourable situation. Oftentimes, a certain kind of situation is created for the making of certain kinds of knowledge. For example, there can be an atmosphere of a threat to women outside their homes created with the purpose of production of a particular kind of knowledge which favours patriarchy.

The debate that we can look at is the tussle between allopathic medicines and homoeopathic medicines. The hegemony of allopathic medicines is very obvious, because the faith in allopathic medicines of

many people may make it seem natural and rational. There are various debates around the topic, where it comes down to the faith of people in particular kinds of medicine. There is a clear hegemony of allopathic medicines, as the doubt is created in the minds of the public about the alternate medicines, by vehemently telling people to reject homoeopathy. Since medicines are associated with rationality and science in modern times, when seeds of doubt (about whether something is scientific or just a belief) are sown, people tend to not use it. When a reputed source from the field of science claims something as unscientific or scientific, then the trust leans towards that source. This also happens because of the hegemony of that reputed source, which might dismiss the other alternative source by calling it non-science or bad science, but at the same time hide its own faults and flaws. Allopathy has been claimed to have a lot of negative effects and side-effects, which are not addressed properly, and people might not be made aware of those disadvantages, and even if they have awareness, they might still trust it more than alternative medicine like homoeopathy, because of a conception that allopathy is scientific and effective, while homoeopathy is not scientific and hence ineffective.

There are debates around many other issues, such as respiratory inhalers, which are widely used since they are recommended by many doctors, at the same time discouraged by many others who find inhalers addictive, as they increase a patient's dependence on it, and they also refer to people who abuse those inhalers. Science Daily (2008) published an article 'Asthma Inhaler Misuse Widespread Among Anti-social Teens' which reported that with an intention of getting high, nearly one out of four teens use asthma inhalers and those with higher levels of distress use it more. Many other reports try to draw attention to the idea that many patients are sceptical about depending on inhalers with the fear of getting addicted to them. To counter the disadvantages cited by those sources by calling the claims a myth, there are many websites, papers and advertisements which dismiss the accusations as misconception and they promote the idea that inhalers have no disadvantages whatsoever. It is necessary for the patients to take inhalation medicines regularly and properly or their condition could become worse, and its consequences could be misuse and overdose (Ranaut et al., 2014). He writes that there is "misconception and misconception in general public regarding use of inhaler and cause of bronchial asthma, they keep on avoiding dietary and other items

which in fact have no role to play in either the causation or management of bronchial asthma…The most likely cause may be lack of training programmes regarding use of the inhalers, poor compliance and lack of knowledge" (Ranaut et al., 2014 : 6).

The disciplines which require training and specialization have an ample amount of knowledge regarding the areas they are focused on. The common masses who have some or no knowledge about the entire procedure involved in coming to the concluding report or statement, cannot verify the authenticity by themselves. This leads to a schism in society on the basis of the extrapolation on different/countering evidence and trusted/credible sources. The extrapolation and schism open up tributaries of rumours. For the people who rebut the claims, it is already a rumour, which has been spread among the people who entirely or to some extent believe it. The reason cited by them, for the spreading of such false claims, is the maintenance of supremacy or hegemony and the garnering of more trust and respect from the masses by these disciplines. Gramsci writes that the intellectual hegemony of the ruling class has control over the independence of the subaltern and the former is aware that to maintain hegemony over the subordinate class, it has to take care of their interests and make sacrifices in the realm of the economy (Hoare & Nowell-Smith, 2005). Here, it can be said that the other reason is the hegemony of the ruling class, which works in tandem with the knowledge-producing disciplines.

6. Conclusion

The belief about what is trustworthy and what is not is also made on the basis of the perception of different people. Perception is the concept which is central to what we experience and what we think. What we perceive from the basic unnoticeable level to the major phenomenon, is extremely important in understanding how we give meaning to the world. The perceptions of the public are formed via one or more than one medium, which includes the state, media or other agents.

There are two ways behind the arrival of technology, which the state adopts. One is the situation, where scientists and the state work hand in glove and the former works to meet the demands or the needs of the state. Second is the situation where there is an availability of technology, and the state has to decide whether to usher the technology and in what way to implement/use it. We can

say that a piece of message or information is a rumour when there is uncertainty about the truth around it, and it is unverifiable. So, the implementation of something by the state or the authority does not truly sanction its truthfulness to the public (citizens) even if it appears to be and is expected to be the case, considering the nature of the State, since the State is thought to be the ultimate credible source for its subjects. The identity of a person is in the hands of the State- from birth till death- as all processes of identification and documentation are either owned or approved by the state. It is supposedly a credible source, but it might or might not be a trusted source. Rumours can crop up from a small barn in a village to the highest legal authority like the State. The source can be any person, people or institution, but it gets lost in the chaos of rumours or is meant to vanish. It is believed that a source of a rumour cannot be identified or found, but that is not the case at all times. Many times it is not difficult to know the body where the source could be situated, if not the exact source. The exact source here means the initial source from where the information emerged. The un-verifiability, uncertainty or the falseness of information spreading among people makes it a rumour. Several times, it is realized that a message was a rumour, only after confirmation of its fallacy. Before that, people consider that to be true or having high chances of being true.

In the realm of science, where there is plentiful knowledge, there is no escape from rumours. The source can be situated in the field of science itself, producing rumours about its claims; or it can be around scientific achievements or claims, produced by the general public due to their suspicion. But anything that is systematically probed and set knowledge in a society, which turns out to be false is not always a rumour. Rumour is usually an unsystematically forwarded message which uses non-objective approaches, and there are no objective set of rules involved in arriving at the resultant message. But not all rumours are produced out of unsystematic (devoid of an accepted set of rules) procedure. Rumours can be produced even when the initial message follows those accepted rules.

Something is considered scientific when it can be verified to be true every time it is tested. Verifiability is an important factor of the scientific field, so is falsifiability. Popper (1963) argued that something that cannot be falsified could not be scientific. It means that any theory or finding is not ultimate, as it would be tested again and again until it is falsified or its alternative argument, theory or findings is

discovered. Verifiability and falsifiability are considered as important ideas in the realm of science, so rumours are not the immediate consequences of those. Lies are important to discuss while talking about plentiful knowledge. As mentioned before, Barnes (1994) defined lies on the basis of the intention behind a statement of any person. If the statement is made with malicious intent or with an intention to mislead people, then it is considered as a lie, but if the person's statement lacks the same intention, then it would not be considered a lie. In this study, we have seen that the area of science is not bereft of lies. Some of the examples show that lies can be circulated among people, which take the shape of rumours, and it becomes challenging to recognize those lies, especially in the field of science because of its hegemony in being considered as the flawless and correct knowledge.

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