

THE INCLUSIONARY TYPES OF ACCEPTABLE SCIENTIFIC EVIDENCE

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Abstract: Background and Presented Problem: In any and all sciences new data, evidence, and improvement over a previous peer reviewed paper is essential in order for any and all sciences to continue to make progress. However, although each science field, discipline, sub-discipline, and all related categories to each science itself has its own applicable areas of applied evidence, there may be additional forms of "unknown evidence" that may be able to be used. That currently may not be known for the most part, that would certainly add to the credibility of any and all peer reviewed scientific papers. The aims and goals of this paper are to discuss the additional types of applicable forms of evidence that many scientists and researchers may not be currently aware of, recognize, or even realize, until the publishing of this paper.

Key words: Science, Data, Evidence.

1 Introduction and Background

Within the realms of what exist, and in the finite world and planet mankind calls: Earth, there are countless scientific subjects, and an infinite amount of data in both what is known and unknown within the confines of all the different types of scientific disciplines as well. Than there are the realms of science that are known. When science attempts to investigate the unknown part of the difficulty is being able to connect the proverbial dots together between the "known and unknown". In order to be able to establish and confirm as to what are the similarities between the known and the unknown as well.

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In the scientific investigative process there is no emotion. It is based upon investigative fundamentals consisting of common sense, and rationally logical deductive reasoning. Therefore, this should equally apply to the realms of known science, and yet to be discovered unknown realms of science when it come to mass, matter, and energy in like manner. This than creates a vast array of applicable numerous forms of evidence in like manner. That in essence, has the capability of being utilized to substantiate factual proof as to the way something needs to be proven or not.

To date (as to the writing of this paper), there are approximately over 62 (sixty two) different forms of applicable types and forms of applicable evidence that could be applied to the realms of science. Of course, this paper will not be able to cover all of these. However, will cover a considerable amount of these different forms of applicable evidence that could be applied to the realms of science.

The references [17] [10] [11] helps the reader to understand that when dealing with the unknown, that in the realms of science that sometimes when hypothetical, theoretical, exploratory, and the experimental sciences cannot apply to a new part of science that is investigating the unknown, that it is alright to at times assume, presume, use calculations, and estimate the situation and circumstance as to what is being scientifically investigated.

2 The Fundamental Definition of: Evidence

The fundamental definition of the word: "Evidence" is defined as: "Something that furnishes or tends to furnish proof; especially: something (as testimony, writings, or objects) presented at a judicial or administrative proceeding for the purpose of establishing the truth or falsity of an alleged matter of fact [3].

In the legal scientific research paper entitled: "Find Law For Legal Professionals and "Summary of The Rules of Evidence " is a legal technical/scientific research paper written by Vincent Dicari, The State of California Attorney General Medical Fraud Bureau [3].

This research paper stipulates both oriented State and Federally mandated guidelines that are used on a national basis within the confines of the laws in both the State and Federal jurisdictional levels within The United States of America.

These laws and mandates also lay down the rules and guidelines and principles as to what type of evidence is admissible into any court of law on the State and Federal levels; "including when it also comes and mandates also lay down the rules and guidelines and principles as to what type of evidence is admissible into any court of law on the State and Federal levels; "including when it also comes to scientific evidence " that also could be admissible into a court of law on a state or federal level in like manner".

Therefore, because such State and Federally mandated rules and guidelines have authority as to scientific evidence that also can be introduced into a state or federal courtroom situation, and because the principles of such are principles of the United States Constitution. Including, that such rules and guidelines based upon the United States Constitution would also follow through in the Congressional part of The United States Government.

Than the terms of evidence that will also be used in this approach and manner will also be applied and used in this research paper as well. In this particular case any and all evidence that could also be submitted and is either according to these mandate terms in which the aforementioned terms in even how courts of law throughout the United States of America would accept scientific evidence in like manner. Whereas in the case of this paper, it is also denoted that there are forms of applicable evidence that may be applied to the realms of science such as: "Peer Reviewed Paper Evidence", is another form of evidence that may also be presented and applied in the realms of science as well.

However, when it comes to a peer reviewed paper being used as a form of hard tangible evidence the peer reviewed paper is looked at by not only the court system, but science as well as evidence when the peer reviewed paper can stand up to peer review. If and when a paper is accepted for peer review, and if can stand up to intense scrutiny, than because it has passed (sometime more than once) to the peer review process, than when accepted as a peer reviewed paper and it can be published by a peer reviewed journal, the chances of such scientific data being able to stand up to a court of law is usually accept as presented evidence, and the very fact that the paper has been published under the peer reviewed process is usually accepted by many court systems around the world.

However when considering the admittance of peer reviewed scientific papers being as admissible evidence many times in a court of law, especially

when used in principle of past already tried case law stipulations sometimes have to be made and on a case by case basis. Whether or not such evidence is accepted into a court of law of specialized circumstances depends primarily on the specific case itself.

Peer review evidence being already accepted principled scientific evidence is also discussed at more length [12]. Which discusses how and why scientific evidence in different types of evidence is accepted by not only peer review but by other scientific processes as well. Whereas the Reference Manual on Scientific Evidence [4] is an entire reference manual on scientific evidence and provides a large and vast resource in implementing the different types of scientific evidence needed in order to not only write a potential peer reviewed paper but is applicable for providing guidelines in how to apply different types of data to the scientific process as well over a large number of scientific subjects. However, if a person really wants to get down to the basics/fundamentals of how science and scientific evidence is supposed to work [5] provide a comprehensive in depth look at this type of data as well.

Whereas preliminary, fundamental, and rudimentary scientific evidence is exemplified and provided by the author of this paper [14] [15] [16] where photographic specialized photography and imaging is also concerned. In the peer reviewed journal known as: "Nature" [7] in its peer reviewed policies as to how authors and peer reviewed referees are to apply the peer reviewed process, is also essential into understanding how evidence is applicable to science.

When it comes to the acceptance and application of new ideas into the scientific acceptance process [1] provides a considerable amount of data in this aspect of the scientific process as well. Whereas when it comes to the research applicability of how scientific research is to be conducted as a generalized rule is also provided in further discussion [18].

Whereas the formulation of examining the scientific process in peer reviewed publishing and accepting it for and/ or as scientific evidence is also better discussed in "Process of Science" [2]. However, the peer reviewed journal "Nature" also discusses the use of scientific principles regarding scientific policy and the acceptance of scientific evidence in like manner. However, when weighing, measuring, and analyzing how scientific principles are to be applied to scientific evidence is discussed more in references [2] [8].

However, "Skeptical Raptor" [13] reviews as to what are the differences in scientific evidence, and what are also the differences in just peer reviewed scientific evidence and the quality of the scientific evidence presented as well. Whereas Pierson [9] provides examples within the National Institutes of health (NIH) as to how when grants are applied for just how strict the USA governmental process is when granting financial assistance to scientific research, and how different types of scientific forms of evidence applies in such situations [6].

The primary reason for these types of acceptance decisions is because of how hard it is to get a potential peer reviewed manuscript accepted by peer review and finally after much daunting work and re-modification and refinement may be accepted to publish in a peer reviewed journal.

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Therefore, because such State and Federally mandated rules and guidelines have authority as to scientific evidence that also can be introduced into a state or federal courtroom situation, and because the principles of such are principles of the United States Constitution, and because such rules and guidelines based upon the United States Constitution would also follow through in the Congressional part of The United States government, than the terms of evidence that will also be used in this approach and manner. To also be applied and used in this research paper as well. According to Dicari [3], both the California State and United States Code evidence in it's foundational aspects that may be admissible and presented is defined and described as follows:

Evidence is relevant when it has any tendency in reason to make the fact that it is offered to prove or disprove either more or less probable. To be relevant, a particular item of evidence need not make the fact for which it is offered certain, or even more probable than not. All that is required is that it have some tendency to increase the likelihood of the fact for which it is offered. Weighing the evidence is for the finder of fact, and although a particular piece of evidence, standing by itself, may be weak, it will be

admitted unless it is otherwise incompetent or it runs afoul of an exclusionary rule [3].

3 The Four Primary and Other Types of Categorical Evidence That Can Be Presented In Courts of Law

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Dicari discusses that there are four traditional types of evidence: real, demonstrative, documentary, and testimonial. Some rules of evidence apply to all four types and some apply only to some or one of them. First, we will cover general rules of admissibility that apply to all evidence [3].

These types of evidence are predominantly is what is used in a court of law, and in like manner, we will cover foundational rules that relate to specific kinds of evidence. Finally, we will cover some special topics, like the form of examination, the hearsay rule, and the lay opinion rule, that frequently cause problems in the courtroom. This type of evidence is not permitted in either municipal, county, state or even Federal Court rooms. Therefore, in the realms of science in like manner these types of condition for being used as scientific science have no credibility in like manner.

4 Statistical Evidence, Testimonial Evidence, Anecdotal Evidence and Analogical Evidence

However, these are not the only types of evidence that can be sustained in proving areas of science as well. Other types of science Seitan [12] and the FJC [4] are Statistical Evidence, Testimonial Evidence, Anecdotal Evidence and Analogical Evidence . Were going to examine these one by one. Presenting anywhere from a semi detailed to detailed explanation of each. Why ? In order to understand that in all ways, forms, and manners. How these additional categories of Seitan used forms of evidence may definitely

¹Applicable to that many democratic countries that have a constitution based upon the freedoms and Rights to its citizens is similar in laws as also practiced and enforced in: "The United States of America" laws and court systems as well. No matter if just a minimal application: "Justice of The Peace" court of law or even up to the highest court in The United States of America, also being: The United States Supreme Court.

be able to be utilized to uphold to even a much greater degree and be used as additional forms of scientific evidence to uphold the scientific record.

The foundational types of areas of evidence that will be presented in this research paper to give evidence to persons in history, and/ or the existence of historical events is considered "historical evidence". Whereas the further credibility of historical evidence is when it can be backed up by archaeological evidence.

5 Real Evidence

Real evidence is a thing the existence or characteristics of which are relevant and material. It is usually a thing that was directly involved in the case:

To be admissible, real evidence, like all evidence, must be relevant, material, and competent. Establishing these basic prerequisites, and any other special ones that may apply, is called laying a foundation. The relevance and materiality of real evidence are usually obvious. Its competence is established by showing that it really is what it is supposed to be. Proving that real or other evidence is what it purports to be is called authentication.

Real evidence may be authenticated in ours (one) ways-by identification of a unique object. For example:

A) Identification of an object that has been made unique [3].

In the realms of applicable evidence in the science of archaeology, real evidence could be considered when in the science of archaeology for instance that their is an archaeologist looking for hard tangible evidence as to possible existence of a historical figure that has been a legend but has not as of yet been proven with hard tangible evidence that person really existed. However, if the archaeologist find a brick in an ancient building that has an inscription of that person's name than what becomes evident is that now that because this new hard piece of archaeological evidence has produced tangible evidence for the actual existence of this historical person as a real person in the annals of history, and not just a legend.

Again, this applies to the scientific archaeological aspect that: Identification of an object that has been made unique, as aforementioned at the beginning of this paragraph. A brief second example of this for instance in the event a pictograph has faded upon an old to ancient document and/ or archaeological artifact and than new archaeological technology has revealed the pictograph, it than becomes new "historical and archaeological data" supporting the science of archeology.

6 Demonstrative Evidence

Is exactly what this paper's subtitled above states and implies. It demonstrates or illustrates the testimony of a witness. It will be admissible when, with accuracy sufficient for the task at hand, it fairly and accurately reflects that testimony and is otherwise unobjectionable. For example; in presenting evidence for the existence of a: "Person In History; Who Is Said To Have Existed", would be to present examples of demonstrative evidence such as diagrams, drawings, or in the case of this research paper the images on the fragment of some sort of artistic or better yet archaeological evidence that the person in question did really exist at one time in the annals of what became lost history.

References

- [1] BROWN, T. **Peer review and the acceptance of new scientific ideas**. London: Sense About Science, 2004.
- [2] CAPRI, A., EGGER, A.E., KULDELL, N.H. **Peer review in scientific publishing**. Available at <http://www.visionlearning.com/en/library/Process-of-Science/49/Peer-Review-in-Scientific-Publishing/159>. Accessed on Jan. 18th, 2016.
- [3] DICARI, V. **Summary of the rules of evidence**. FindLaw for legal professionals. Available at <http://corporate.findlaw.com/litigation-disputes/summary-of-the-rules-of-evidence.html>. Accessed on Aug. 11th, 2015.
- [4] FEDERAL JUDICIAL CENTER (FJC). **Reference manual on scientific evidence**, 2nd ed.. Washington: FJC, 2000.
- [5] GOLDSTEIN, D. **How science works in Reference manual on scientific evidence**. Washington: FJC, 2000.

- [6] NATIONAL INSTITUTES OF HEALTH (NIH). **NIH Peer review: Grants and cooperative agreements.** Available at <http://grants.nih.gov/grants/peerreview22713webv2.pdf>. Accessed on Jan. 19th, 2016.
- [7] NATURE. **Authors & Referees.** Available at <http://www.nature.com/authors/index.html>. Accessed on Jan. 18th, 2016.
- [8] ----- **Peer review policy.** Available at [http://www.nature.com/authors/policies/peer review.html](http://www.nature.com/authors/policies/peer%20review.html). Accessed on Jan. 18th, 2016.
- [9] PIERSON, D.J. **The top 10 reasons why manuscripts are not accepted for publication.** Available at <http://www.bu.edu/sph/files/2012/01/Pierson-The-top-10-reasons-why-manuscripts-are-not-accepted-for-publication.pdf>. Accessed on Jan. 19th, 2016.
- [10] RANDOM HOUSE. **entry: Evidence** in Dictionary.com Unabridged. Available at <http://dictionary.com/browse/evidence>. Accessed on Jul. 9th, 2015.
- [11] ----- **entry: Circumstantial Evidence** in Dictionary.com Unabridged. Available at <http://dictionary.com/browse/circumstantial-evidence>. Accessed on Jul. 9th, 2015.
- [12] SEITAN, C. **The 4 types of evidence.** Available at <http://www.writingsimplified.com/2009/10/4-types-of-evidence.html>. Accessed on Jan. 16th, 2016.
- [13] SKEPTICAL RAPTOR'S BLOG. **How good is your evidence?** Available at <http://www.skepticalraptor.com/blog/wp-content/uploads/2013/06/science-evidence.jpg>. Accessed on Jan. 18th, 2016.
- [14] STEWART, R. **Photographic formats solving the problems.** San Antonio, TX: Elkins Institute, 1976.
- [15] ----- **A study on imaging concepts and applications in solving graininess and loss of resolution in round pixelated photography.** San Antonio, TX: Elkins Institute, 1976.
- [16] ----- **A study in the supplemental camera attachments and their capabilities and limitations and when to photograph, on**

Earth and in space exploration. San Antonio, TX: Elkins Institute, 1977.

- [17] ----- **Assumptions, presumptions, and estimations are scientifically acceptable when investigating and making discoveries in the unknown.** Available at <http://youtu.be/6hSHEVcE24g>. Accessed on Jul. 6th, 2015.
- [18] UNIVERSITY LIBRARY. **Using refereed/peer-reviewed research.** University of Illinois at Urbana-Champaign. Available at http://www.library.illinois.edu/learn/research/peer_review.html. Accessed on Jan. 17th, 2016.
- [19] UNIVERSITY OF SAINT AUGUSTINE FOR HEALTH SCIENCES (USA). **What is the difference between scholarly and peer reviewed (refereed) publications?** Available at <http://usa-document.com/lb/peer%20reviewed%20vs.%20trade%20publications.pdf>. Accessed on Jan. 18th, 2016.