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The Metaphor of Patina

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Abstract

Patina is the word used for the green or brown film formed on the surface of old bronze, an excess of which can mask the true characteristics of the original masterpiece. Filippo Baldinucci used the word patina in a modern sense for first time in his book "Tuscan Vocabulary of the Art of Design". Metaphors have been part of philosophical speech since the time of Plato. This figure of speech is used to attempt to provide a sensitive presence of an idea to improve understanding and to make a more vivid perception of that concept. On analysing the creative process of contemporary research on health topics and its further dissemination, we defend the epistemological thesis that there is always some degree of patina on an original article and this may obscure the underlying scientific work. Conclusion: We consider that patina in scientific papers is very different from the concept of epidemiological bias. We think that any researcher who reads an original article acts as a restorer of knowledge. If a reader is aware of the existence of scientific patina, that reader will know how to look through it and see the masterpiece hidden underneath.

Keywords

Knowledge, Writing, Reading, Bias, Humanities, Comprehension

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1. Introduction

The Compact Oxford English Dictionary defines "patina" as "1) a green or brown film on the surface of old bronze; 2) a sheen on wooden furniture produced by age and polishing". A very similar shade can be obtained by chemical methods.

Patina is a word of Latin etymology the meaning of which is equivalent to "plate" or "pan"; a sort of greenish glaze lining these fixtures. Filippo Baldinucci (1624-1697) (Wikipedia, 2013) is considered one of the great biographers of Baroque Florentine art. He used the word patina in a modern sense for first time in his book "Tuscan Vocabulary of the Art of Design" (1681). However, the term actually used by Baldinucci was "paten" rather than patina. Paten in Old Italian meant a kind of dark and bright varnish that was applied to shoes (**Figure 1**).

Philological aspects of the word seem to reflect the historical situation of that time. Different colourful effects had been applied to bronze sculptures since early classical times, but it was not until the eighteenth century that green corrosion products began to be of value. According to the Oxford Dictionary of the English Language, the earliest reference to the use of green patina dates from 1797.

2. Epistemology and Metaphors

Metaphors have been part of philosophical speech since the time of Plato. This figure of speech is used to attempt to provide a sensitive presence of an idea to improve understanding and to make a more vivid perception of that concept. Philosophical metaphors relate to the ability of language to express the world of arguments and discourse, i.e. to express the world of concepts.

Some philosophers like Plato often used metaphors, tacitly admitting that metaphors were a suitable form for speech. Others, such as Aristotle, questioned whether there was a legitimate use for metaphors in philosophical language. In Western tradition the classification of philosophers who use metaphors as followers of Plato and those who do not as followers of Aristotle has become common.

Pierre Fontanier (Fontanier, 1968) stated that "thought consists of ideas, and the expression of thought by speech consists of words". The word "idea" (Greek "*eido*" = to see) means the "image" of objects seen by the spirit. The current philosophy of language has analysed the cognitive function of metaphor.

Ivor Amstrong Richards (Richards, 1936) and Max Black (Black, 1962) defined the so-called "interactive approach" of metaphor approach in relation to the more traditional "surrogate" and "comparative" but more like literary metaphor. A fundamental aspect of interactive theory refers to a metaphor as a "knowledge process". For Black (Black, 1962), metaphorical expression relies on a system of implications among semantic features of terms associated with metaphors. By including notes regarding the meaning of the two terms, metaphors not only discover similarities between the referents, but end by creating them and by opening the mind to new ways of looking at reality. A metaphor acts as a "model" for the environment. Indeed, visual metaphors of Maurits Cornelis Escher became very important in certain areas of mathematics (Shattschneider, 1994).

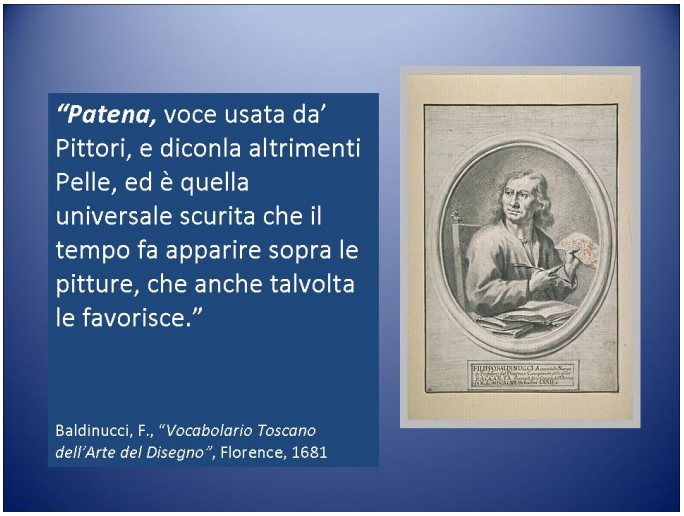

Figure 1. F. Baldinucci and "Patena".

3. The Fieldwork of Health Research and Scientific Publishing

From the time a researcher germinates an interesting idea, a period of many years usually elapses until the idea is articulated into a suitable research question, the administrative and ethical aspects of the research plan are developed, the design and methods are organized, the data is collected, and finally, the results are written up for submitted to publication. This passage of time can erode the original idea or may even destroy it.

If we add the scientific editing time, the peer review system, and the interests of the various publications to all this, a period of at least one year may have gone by; although there are notable exceptions and some manuscripts are accepted in record time by the journals (Guarner et al., 2013).

4. From the First Idea to Publication

Overall, the intellectual process of making an article can be divided into four stages. In the initial phase the researcher tries to understand the rules of the publication game, and then decides whether to enter and play (Albert, 2000). In the preliminary phase, the main idea and the message of the article are defined. The preparation phase defines authorship, outlines the decision as to the target journal to which to submit the manuscript and the necessary materials for writing are developed. Finally, in the drafting phase the author writes the first rough copy of the manuscript that needs to be clear and understandable to be corrected in several phases.

The main reason why a researcher decides to publish is the creation and dissemination of knowledge, although there may be other reasons (teaching, curriculum vitae, feedback or pure intellectual delight).

In our opinion, time in contemporary scientific publishing is quite slow. Once the final version of the manuscript is ready, it must be checked as to whether it meets all the requirements to be submitted to a selected journal. These requirements include an appropriate title, a structured abstract, keywords matching the MeSH terms (Medical Subject Headings), the disclosure of potential conflicts of interest by the authors, the formatting of the text to include an introduction, a methodology, a results and a discussion section within the norms of the selected journal. A pertinent, updated, and relevant bibliography is formally adequate for the journal. A good cover letter and the preparation of supplementary materials for editors and reviewers are important additional steps.

The peer review process of the manuscripts is vital to ensure the quality of health sciences journals and it is an essential step in the dissemination of scientific work. This process allows the avoidance of publishing methodologically unsuitable articles (Ho et al., 2013).

5. The Readability of a Scientific Paper

The Robert Gunning fog index was created in 1952 (Wikipedia, 2014) and was based on two core aspects, sentence length and word length. A scale of 16 corresponds to difficult to read texts and a scale of 11 corresponds to a text readable by any audience.

Average readers automatically try to memorize a text whilst reading it in order to grasp its meaning. In articles reporting findings this action is even more intense. If an unknown word appears, this process requires more effort and imposes obstacles for concentration. It has been shown that memory tends to fail after the fifteenth word in a sentence is read and thus, this should be the maximum number of words in a given sentence since word number 15 marks the recall capacity possessed by the average reader. A web page is available for the calculation of the fog index (http://gunning-fog-index.com/) The fog index of this section is 11.07. There are many other methods for measuring readability (Ramírez-Puerta et al., 2013).

6. Patina in an Original Article

In view of all these facts, we defend the epistemological thesis that when reading an original research article we are always looking at something "old", a masterpiece, which can be hidden behind the text. Something such as a layer of patina may obscure the original work but may also give added value to the manuscript as in the world of antiques. Sir Karl Popper defended the idea that the scientific value of a theory was right when you could use falsifiability of the null hypothesis (Berghmans et al., 2011) The epistemological value of scientific work will always be readably transparent because there is always a greater or lesser degree of patina on the paper.

As we all know, the philosophy of science is a second order criteriology (Losee, 1988). However, it can also be understood as the discipline that "embodies" researcher thought. George Steiner believes that William Shakespeare was great by his way of "*bodying forth*" with the characters of his works (Steiner, 2001). Some-

thing similar happens between the philosophy of science and research. The first gives body to the second. This thesis is framed within a historicist conception of the philosophy of science within which we understand that this philosophy tends toward realism (Pawson et al., 2004).

7. Differences between Epistemological Patina and Epidemiological Bias

Our vision of patina in scientific articles is very different from the concept of epidemiological bias (Delgado-Rodríguez et al., 2004). The concept of bias is associated with a lack of internal validity or an incorrect appreciation of the association between exposure and effect in the target population. External validity on the other hand involves the generalization of the results obtained in one population to another. There is no external validity without prior internal validity. The presence of external validity does not guarantee the existence of internal validity. Epidemiological bias is clearly distinguished from random error and a lack of accuracy. On other occasions, the term bias refers to the mechanism that produces the lack of internal validity.

The epistemological patina of an article is an earlier concept and can be differentiated from that of bias and publication bias *in situ* (Phillips, 2004). Patina is related to the time elapsed from the first idea that moved a researcher to initiate an investigation related to a problem or a question to the eventual publication of the results of that investigation (Greenhalgh, 1997). It is a concept of philosophy of science and, thus, a second order criterion. Of course, the existence of any type of bias increases the amount of patina, but some degree of patina will always exist (Young et al., 2008).

Secondary studies will have more patina than the primary studies under the assumption of a similar amount of bias. Articles using a qualitative methodological approach possess a different type of patina from those using quantitative methods.

8. Conclusion

If a reader is aware of the existence of scientific patina (Sutherland et al., 2013), that reader will know how to look through it and see the masterpiece hidden underneath. A policy of universal free diffusion would largely remove a fair amount of patina. In short, we think that any researcher who reads an original article acts as a "*restorer of knowledge*"; to prove this we employed a Platonic metaphor with an interactive approach. The existence of epistemological patina has become an epidemiological aphorism (González-García et al., 2012).

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Authorship Contribution

M. O.-C., J.M. S.-L., J.L. carried out the first idea of this assay. J. S.-S., M.A. M.-G., R. L.-R. and R. E. participated in its design and coordination. All authors read and approved the final manuscript.

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Conflict of Interest

The authors declare that they have no competing interests.

Ethics

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