Authority Delegation

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Abstract

In this paper, we introduce a new concept to the field of scientonomy, that of *authority delegation*. Authority delegation is, in essence, a type of relation between distinct scientific communities whereby one community both recognizes another as an expert on a particular topic and will accept the theories it is told by the expert community over the same topic. Importantly, authority delegation is not a new fundamental ontological category along with *theory* and *method*. We show that authority delegation is *reducible* to the more basic concepts of *theory* and *method*. Furthermore, we suggest that authority delegation comes in two forms: *one-sided* authority delegation and *mutual* authority delegation.

Introduction

As scientonomists, we understand that all scientific communities bear a scientific mosaic. Yet we underappreciate the nuances of communities and subcommunities holding authority over different elements of a common mosaic. The aim of this paper is to introduce the concept of *authority delegation*, a type of relation between distinct scientific communities. Through authority delegation, we can begin to reconstruct the authoritative and communicative structure of any scientific community. We will begin by outlining a case study in art history to demonstrate the need for authority delegation in scientonomy. Then, we will define two types of authority delegation – *mutual* and *one-sided* – and give examples of each.

Authority Delegation in The Art World

The inspiration behind authority delegation comes to us from the world of art; specifically, the authentication of works of art. Art historians and associated communities such as galleries, collectors, and curators have a vested interest in determining whether a given work of art is, in fact, genuine. Importantly, this wider community trusts the assessment of a specific subcommunity which has the resources and expertise necessary to assess authenticity. Scientonomists and non-scientonomists alike would probably not consider art historians or any associated communities to be *scientific* communities per se. However, insofar as these art-related communities have sets of both theories and methods (and thus bear a mosaic of sorts), the example of authority delegation we will explore within these art-related communities can bear directly on scientific communities.

Andrew W. Brainerd argues that the method of contemporary art authentication has three elements: *provenance*, *dating*, and *connoisseurship* (Brainerd, 2007). In order for a work of art to be deemed authentic, all three elements of this method must be satisfied. *Provenance* refers to the history of the physical work of art, typically given as a list of all the work's previous owners. Ideally, this list will trace a path from the artist's studio to the hands of its current owners. Even if the work cannot be traced right back to the artist her or himself, evidence that the painting once hung in a reputable art gallery or was owned by a friend of the artist is solid evidence that the work is authentic (Illis, 2014). *Dating* a work of art is also essential to distinguish authentic artworks from fakes or copies. Dating involves a comparative analysis of the work in question with already authenticated pieces. For example, an art authenticator examining a painting may use techniques such as pigment analysis, white-lead dating and atomic absorption spectroscopy both to identify the age of a particular artwork and to indicate whether the pigments correspond to those used by the artist. The third element of the contemporary method of art authentication is *connoisseurship*. A connoisseur is an expert on a particular artist's technique, someone who can recognize an artist's distinctive style upon examination of any work. Despite the subjectivity of this technique, connoisseurship remains one of (if not the most) important requirement of the contemporary art authentication method. It would not be an exaggeration to say that no art of work can be considered properly authenticated without approval from a connoisseur (Grosvenor, 2012).

To satisfy all three elements of the contemporary art authentication method, an authenticator requires certain technical knowledge and skills, as well as access to specific equipment and documents like sales records, exhibition catalogues, gallery archives, and the artist's private correspondence. The community with access to these resources– which includes, among others, connoisseurs, scholars, and family members of the artist – will hereby be classified as the *art expert community*. The method employed by the art expert community can therefore be represented as follows:

Art experts, however, are not the only community interested in the authenticity of works of art; the *art market community* is also a stakeholder here. Composed of auction houses, art dealerships, and similar institutions, the art market community needs to be informed about the authenticity of the works it sells, for authenticity determines the value of an artwork. Since the art market community lacks the required knowledge, skillset and resources to authenticate works themselves, they depend on the art expert community to provide evidence of authenticity.

Art experts provide their judgments of artworks' authenticity to the art market community through special documents known as *catalogues raisonnés*. A *catalogue raisonné* is a published list of a single artist's entire *oeuvre*. It includes the titles, dates, and dimensions of all known works by an artist, along with (in most cases) an outline of each work's provenance. In other words, any work listed in a catalogue raisonné has satisfied the contemporary method of art authentication, and will in turn be accepted as genuine by the art market community. If a work is not listed in a catalogue – either because the work is unknown, or the catalogue is a work-in-progress – the art market community may still accept it as genuine, but only if an expert has issued a certificate of authenticity and states that the work will be included in an upcoming catalogue (Kraus, 2004).

Knowing that the art market community must rely on the art expert community for knowledge of authentic artworks that it may sell, we can identify a relation of authority delegation:

In essence, the art market community has delegated authority over the authentication of works of art to the art expert community. In doing so, the art market accepts the authenticity of whatever artwork is deemed authentic by art experts. To be clear, although the accepted theories (“painting X is a work by artist Y”) of both communities are the same, there is an important difference between the methods each community actually employs: accepting a work as authentic because it satisfies a particular set of criteria is different than accepting one as authentic because another community says so. The difference in method is important for distinguishing the *delegating* community from the community *delegated to*.

Let's look at a specific example of art authentication in action. In 2011, a team of journalists and art experts from the BBC program *Fake or Fortune?* set out to discover whether a painting entitled *Bords de la Seine à Argenteuil* was painted by the famous impressionist Claude Monet (Illis, 2011). After accumulating a wealth of evidence in support of the painting's authenticity, the *Fake or Fortune?* team submitted their findings to a community of Monet experts called the Wildenstein Institute for evaluation. Founded by Monet expert Daniel Wildenstein and now headed by his son Guy, the Wildenstein Institute can be considered to be the leading community of Monet experts, and also happens to be the publishers of the sole Monet catalogue raisonné. *Bords de la Seine à Argenteuil* was not included in the Wildenstein's catalogue, and after reviewing the evidence brought by the *Fake or Fortune?* team, the Institute chose not to certify the painting as authentic. This decision opposed all evidence accumulated by the BBC team as well as the opinion of several other Monet experts. Despite the controversial nature of the decision, the painting has not been able to sell as a genuine Monet within the art market (Illis, 2011). This is an indication that the art market delegates matters of Monet authenticity to the Wildenstein Institute:

Authority Delegation: Definition and Ontological Status

Now that we understand authority delegation to be a phenomenon that ought to be incorporated when reconstructing a mosaic, we are in a position to explicitly define the concept being introduced in our paper:

Authority Delegation $\equiv$
Community A is said to be delegating authority over topic x to community B <i>iff</i> (1) community A accepts that community B is an expert on topic x and (2) community A will accept a theory on topic x if community B says so.

There are a few details worth pointing out in our definition of authority delegation. For one thing, it is a difference in method that indicates the distinction between two communities in a relation of authority delegation: the community *delegated to* employs its usual method, while the *delegating* community employs a method dependent on that of its partner. For instance, the Monet Authentication Method of the Wildenstein Institute discussed above is certainly different than the Delegated Monet Authentication Method of the Art Market. In practice, authority delegation does not change the mosaic of the community delegated to, however it clearly indicates that the delegating community employs a new method. Indeed, by *the third law*, any new method must be deducible from currently accepted theories and employed methods. So authority delegation consists of not only the employment of a new method but also the (prior) acceptance of a new theory from which that method follows. The ontological status of scientonomic concepts effectively remains unchanged; authority delegation is simply reducible to theories and methods. In our definition, (1) designates the accepted theory (in the form of “community B is an expert on topic x ”), and (2) designates the corresponding method (“accept the theories of community B on topic x ”). As such, any instance of authority delegation could be expressed like so:

Ideas similar to authority delegation have been previously proposed in other disciplines. Following the writings of Émile Durkheim, sociologists have debated whether societies operate according to a *mechanical* or an

organic solidarity (Durkheim, 1893). The conception of *mechanical* solidarity suggests that all parts within a single society undertake identical tasks, while the conception of *organic* suggests that society operates according to a division of labour. Since the methods of a delegating community are, strictly speaking, distinct from those of the community delegated to, we might say that two communities in a relation of authority delegation operate according to organic solidarity or a division of labour. Additionally, cognitive scientists have proposed various theories of *distributed cognition* to explain how different parts of the same system might coordinate their efforts for a collective purpose (Bird, 2014; Hutchins, 1995). A system of distributed cognition is similar to authority delegation in the sense that different subcommunities might coordinate the assessment of theories along their respective areas of expertise. So while authority delegation is a phenomenon novel to scientonomy, it is not without precedent in other areas of research.

Mutual and One-Sided Authority Delegation

Authority delegation can be either one-sided or mutual. We will explain each in turn.

One-sided authority delegation occurs when one community accepts a theory of a second community, but the second community does not accept the theories of the first. For an illustrative example of one-sided authority delegation in more straightforwardly *scientific* communities, consider the present relationship between the physics community and the community of metaphysician-philosophers.

Philosophers interested in metaphysical questions are bound in their research by the findings of physicists; were physicists to accept a new theory – say they identified a new subatomic particle – metaphysicians would accept the same new theory because they have delegated authority over physical sciences to the community of physicists. Physicists, on the other hand, do not seem to be delegating the authority over metaphysical subjects to professional philosophers. They are not necessarily willing to listen to what metaphysician-philosophers have to say regarding such issues as causation, determinism, substance, or reduction. Were we to reconstruct the mosaic of the contemporary physics community, we would most likely find out that it includes many (often tacitly) accepted metaphysical theories such as the conception of materialism (ontological physicalism). Yet, physicists would be accepting these metaphysical theories *not* because professional metaphysicians said so, but because of other reasons that have little to do with professional philosophers. Establishing what exactly those reasons might be is an interesting task for observational scientonomy. What is important from our perspective is that physicists don't seem to be delegating any authority to the community of professional metaphysicians who specialize in

metaphysics. Thus, a change in the accepted theories of metaphysicians would likely have no impact on the physics community. In short, physicists and metaphysicians are in a relationship of one-sided authority delegation.

In addition to one-sided authority delegation, we can also identify a relationship of *mutual authority delegation* between two scientific communities. Mutual authority delegation occurs when two scientific communities recognize and accept one another's expertise over certain topics.

At an abstract level, consider the relationship between any two compatible scientific disciplines. For instance, we know that the physics community will accept the theories of the biology community on life sciences, and that the biology community will accept theories on physical phenomena accepted by the physics community. In essence, the relationship between the physics community and the biology community is one of mutual authority delegation:

The notion of mutual authority delegation also applies to the relations between a scientific community's subcommunities. For instance, one might divide the twentieth-century physics community into at least two subcommunities: theoretical physicists and applied physicists. Peter Galison discusses these distinct yet overlapping subcommunities at length in his book, *Image and Logic* (Galison, 1997). For our current purposes, it suffices to point out that theoretical physicists, on the one hand, use formulae and models to explain physical phenomena in an abstract sense, while applied or experimental physicists, on the other hand, use experiments and observations to explain physical phenomena in an empirical sense. Both subcommunities are considered physicists. Yet they are physicists that employ a different set of methods, and thus bear distinct mosaics from one another. Were the subcommunity of theoretical physicists to hypothesize the existence of a physical phenomenon, like a new particle, applied physicists would accept that the phenomenon exists *in theory*. Were the subcommunity of applied physicists to verify the existence of something like a new particle, theoretical physicists would, too, accept its *actual* existence. In this sense, theoretical physicists delegate the authority over applying their theories to real-world situations to applied physicists, while applied physicists delegate the authority over hypothetical physical entities to theoretical physicists. We can thus describe the relationship between applied and theoretical physicists as one of mutual authority delegation, like this:

Adopting a concept like *authority delegation* is important because it allows us to account for the changing structures of scientific communities and the mosaic elements exchanged between them. Namely, it becomes possible for us to scale scientific communities to nearly any size. We can look for interactions *between* scientific communities and possibly identify an overarching scientific community bearing a shared mosaic. As a case in point, it seems acceptable to suggest that theoretical and applied physicists, being in a relation of mutual authority delegation, form part of an overarching community of physicists. Alternatively, we can look for interactions *within* scientific communities – among their sub-communities – to reduce the scale of a scientific community to its necessary parts. In other words, accepting the concept of authority delegation opens up an entirely new means to reconstruct scientific communities and their mosaics.

Conclusion

In this paper we have introduced the notion of authority delegation for identifying the relations between certain scientific communities and their accompanying mosaics. Authority delegation can be either one-sided, where one community simply accepts the theories of another, or mutual, where both communities accept one another's theories on certain topics. In essence, a concept like authority delegation brings scientonomy closer to understanding the complex relationships between scientific communities themselves as well as the mosaics they bear.

Suggested Modifications

Here are the modifications we suggest:

[Sciento-2016-0003]

Accept the notion of *authority delegation*:

- *Authority Delegation* $\equiv$ community A is said to be delegating authority over topic x to community B *iff* (1) community A accepts that community B is an expert on topic x and (2) community A will accept a theory on topic x if community B says so.

Authority Delegation $\equiv$
Community A is said to be delegating authority over topic x to community B <i>iff</i> (1) community A accepts that community B is an expert on topic x and (2) community A will accept a theory on topic x if community B says so.

[Sciento-2016-0004]

Provided that the preceding modification [Sciento-2016-0003] is accepted, accept the following notions of *mutual* and *one-sided* authority delegation, as subtypes of *authority delegation*:

- *Mutual Authority Delegation* $\equiv$ communities A and B are said to be in a relationship of mutual authority delegation *iff* community A delegates authority over topic x to community B, and community B delegates authority over topic y to community A.
- *One-Sided Authority Delegation* $\equiv$ communities A and B are said to be in a relationship of one-sided authority delegation *iff* community A delegates authority over topic x to community B, but community B doesn't delegate any authority to community A.

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