

Once upon a time in reality: how to read a scientific story

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Abstract

Knowing is often seen as something that is purely rational, particularly in the so-called 'hard sciences'. However, during the last century philosophers of science have come to realise that knowing in the sciences is much more than this, involving the personal commitment of the knower to that which is known.

Much human knowledge is transmitted in the form of a story. In fact, it is primarily through narratives that God the living Word is revealed to us, through the accounts of his dealings with his people.

In our contribution we consider two scientific disciplines in which stories play a prominent role. We suggest that our understanding of scientific knowing is enriched by the realisation that much of the knowledge in these disciplines is in narrative form. In both archaeology and astronomy the primary thing to be known is a narrative. In archaeology it is the narrative of humankind, revealed through artefacts and bones, while in astronomy it is the narrative of the cosmos, revealed through observations of the Universe. But for a narrative to be known involves much more than comprehending or assenting to the propositions contained in it: to know a narrative involves the knower entering into it and being shaped by it. It is only when that happens that good knowledge in these disciplines is possible.

1 Ways of knowing in God's world

What does it mean to say, 'I know X'? There are many different meanings of that word, depending on what "X" is. Knowing is an action, involving different parts of who we are, depending on what is being known. Here are a few examples:

- I know ... a proposition (that Bangkok is the capital of Thailand)
 - I intellectually assent to ...
- I know ... a person (my friend)
 - I have a meaningful relationship with ...
- I know ... a skill (French)
 - I have acquired competence in ...
- I know ... a memory (what I had for breakfast)
 - I can recall ...
- I know ... a story (The Lord of the Rings)

- I enter into and find my life enriched by ...

The conventional understanding of scientific knowing has focused primarily on the first of these, *proposition-knowing*, to the exclusion of other ways of knowing. That this is unsatisfactory has been pointed out by philosophers such as Michael Polanyi (*Personal knowledge*) and the reformed epistemologists (Plantinga, Wolterstorff), who have argued that knowing involves much more than intellectual assent to propositions. In other words, the act of knowing involves much more of a person than their rationality alone.

The purpose of our contribution is to consider the place of narrative-knowing within the sciences. We turn first to consider what we mean by “narrative-knowing”.

2 Narratives and narrative-knowing

The use of narrative is a ubiquitous phenomenon in human culture. The universal occurrence of narratives around the world have led some theorists to suggest that human beings are born with a capacity for narrative. As soon as children start putting verbs together with nouns, i.e., as soon as they are starting to form proper sentences (around their third or fourth year), they start telling and understanding stories. This appearance of narrative capability roughly coincides with the first memories that adults retain of their infancy, and some have taken this to imply that memory is somehow connected with storytelling. ‘We organise our experience and memory of human happenings mainly in the form of narrative – stories, excuses, myths, reasons for doing and not doing, and so on.’ (Bruner 1991: 4).

We are so used to understanding reality through narratives that it is built into the way we experience reality. For instance, when we look at a picture of a shipwreck, the picture of the shipwreck induces our imagination to ponder about a storm, about sailors fighting for their lives, about rescue. As soon as we have a new experience, we start constructing a narrative that accounts for our experience. And if we don’t understand the narrative of our experience, we don’t feel as though we understand our experience.

One could thus say that narrative-knowing is the basic way of knowing (Lyotard 1979). Indeed, the word “narrative” goes back to the Sanskrit “gna”, a root term that means “know” (Abbott 2002). God has created human beings as imaginative creatures. And when He revealed Himself to us, He used a form which is appropriate to our creaturely nature: He revealed Himself in His(s)tory, in the story of creation, fall, redemption and restoration.

What then does it mean to know a story?

A narrative could be viewed as being nothing more than a string of propositions. So could narrative-knowing be reduced to proposition-knowing? Think back to the last book that you enjoyed reading. Were you just an objective spectator, taking cognisance of the names of the characters and the other propositions contained in the story? No, there was much more to it than that.

Knowing a narrative involves the listener or reader entering into the story, appropriating it. Aristotle, in his theory of tragedy, already recognised that katharsis is one of the goals of storytelling. Our own thoughts and emotions are ‘cleansed’ through our entering into the story. Narrative knowledge therefore is more than propositional, descriptive knowledge. Whereas a description provides a representation that ascribes properties to entities within a

mental model of the world (Herman 2009), narrative adds something to this. As a mediator between our direct experience of reality and our mental understanding of that experience, narrative 'ceaselessly substitutes meaning for the straightforward copy of the event recounted' (Barthes 1977, cited in White 1981).

3 Scientific narratives

In some scientific disciplines the primary thing to be known is a narrative. We will briefly present two examples from our own disciplines, and then go on to consider for such disciplines what it might mean fully to embrace narrative-knowing as we have just described it.

As a preliminary remark, we are using the word "science" quite loosely, to refer to "any activity that is (1) a systematic and disciplined enterprise aimed at finding out truth about our world, and (2) has significant empirical involvement" (Plantinga 2010).

3.1 Archaeology

Archaeologists try to reconstruct the past, the story of mankind. Since archaeology is mostly concerned with that part of human history for which we have no or scanty documentary evidence, archaeologists focus on objects and the built environment of the past. It therefore lends itself eminently to imaginative, experiential knowing: as we touch the objects people in the past used and rebuild their houses and workplaces in our mind's eye, we almost automatically enter into the story of their lives: what was it like to live in Viking Age Yorvik? As such, the presentation of archaeological research to the public tends to have all the characteristics of narratives mentioned before.

However, some academic archaeologists tend to be less enamoured by a narrative perspective on their research. This is especially evident when we consider the two main theoretical perspectives current in academic archaeology. Processual archaeologists emphasise the "scientific" character of archaeological research, using a systems approach to human society with much emphasis on the economic / subsistence aspect of the past. Post-processual archaeologists, on the other hand, are more concerned with the individual person in the past, and try to understand the ideas behind the behaviour that we see reflected in archaeological remains. These two perspectives are often at odds (not to mention at war) with each other, and the main battleground is the role of storytelling in academic archaeology.

3.2 Astronomy

Astronomers try to reconstruct the past, the story of the Universe. True, some astronomers are really physicists in disguise, seeking to understand the fundamental laws that describe what happens in the Universe. But most are seeking to understand how those physical laws have operated over time, forming stars, planets, galaxies, clusters of galaxies and a vast array of other astronomical phenomena.

The laws of physics may be simple enough, but to understand how a cloud of dust becomes a cluster of stars and planetary systems is a challenge that we could only dream of being able to model except in the most simplistic way. Nonetheless, some attempt to do this,

employing the most powerful computers on the planet to produce a reconstruction of key elements of the history of the Universe. Meanwhile, others collect vast amounts of data to provide constraints and inspiration for these theoretical models. But all are working together for the same goal: to understand the story of the Universe.

Awe-inspiring story-telling has no place in academic astronomy. Rather, most academic discussion treats this story as a set of uninspiring propositions, to be tested and refined using rigorous statistical analyses of the data. It is only outside of the academic discourse that astronomers embrace the narrative nature of the discipline, seeking to stir the public's imaginations with grand stories of dramatic events taking place on unimaginably large scales, stories which inevitably invite the hearers to reflect on their own identity and significance.

4 Narrative-knowing within the sciences

We have argued that narrative-knowing is much richer than proposition-knowing, and that there are scientific disciplines in which the primary thing to be known is a narrative. So what difference might it make to embrace narrative-knowing as an appropriate way of knowing in these disciplines?

We are convinced that it should make a difference. In God's world, if we are faced with a narrative, then we should seek to know it as a narrative, engaging it with our whole being, and not just with our rationality. And if our calling as scientists is to reconstruct a narrative and to tell it to others, then our method of research should treat that narrative as a narrative, not as simply a set of propositions.

But what does this mean in practice? By way of stimulating discussion, we offer the following suggestions.

4.1 A richer motivation for scientific research

It is possible to see one's research area simply as some propositions about some irrelevant events in the distant past. However, seeing it as part of a true story which God intends to be told to enrich people's lives can provide strong motivations for pursuing it.

4.2 A greater value for public understanding of science

If the purpose of our research is to produce a narrative, then our research is unfulfilled until it is narrated, since that is what a narrative is for. It should be integral to our training as scientists to become better story-tellers, and to seek out opportunities to tell the stories that are the outcome of our research.

4.3 Choosing research areas to enrich the story

Recognizing that the goal of research in some scientific disciplines is to produce a story immediately raises the question of what makes a good story.

In what ways is the current story in archaeology or astronomy not a good story? How does it fail to engage the hearers? Which key parts of the narrative are incomplete?

Then, perhaps more fundamentally, what effect should the story have on its hearers? This question is worthy of much reflection. Can we tell from the story itself what effect it ought to have? Or should we be seeking to tell the story in a way that reflects God's purpose for creation and his dealings in redemptive history? If the stories of archaeology and astronomy invite the hearers to ponder their place in the history of humanity and of the Universe, then what should that mean? Who am I, and what is my place in history?

Many would recoil from these considerations as being subjective and unscientific. But if we are to know in a way that reflects the richness of God's world, they are questions we cannot avoid.

"For me, reason is the natural organ of truth; but imagination is the organ of meaning. Imagination, producing new metaphors or revivifying old, is not the cause of truth, but its condition" (C.S. Lewis 1939).

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