Philosophical Diagrams

Sometimes, diagrams can be used to show relationships. The most common are when processes and reactions require a clear and concise expression, which can be instantly remembered and brought to mind when required. But, a different and much more demanding area of showing relationships diagrammatically, is in Philosophy. Once again I must remind the reader that this is not a textbook, so I will not be dredging up appropriate examples from far and wide. The examples that I use will be ones that I myself have designed. Using only my own diagrams does have an important advantage: I know exactly what I am trying to communicate, and exactly how I am achieving it. In addition, I am not an outside expert brought in to apply his skills and techniques. No, I am the very person needing these diagrams, and crucially aware of the shortcomings of my efforts up to the point when I feel the need to switch to an alternative mode of communication.

To support the above stated position I will give another reason in the very area that we are about to deal with. For many years I have been struggling with the Philosophy of Science, and my efforts have not been helped by the fact that I do not sit with the consensus in this crucial area. Indeed, I am considered something of a maverick, in that I have long opposed the generally accepted philosophical position in my own subject – Physics. I have found, that to marshal my arguments effectively, I have had to go beyond the exclusive use of words. In revealing my position on the philosophy of Science I have felt it essential to reveal relationships via diagrams.

My approach has always been the relationships between our concepts, theories and models and Reality itself, and though words are definitely the main and most powerful means with which to establish my position, I have recently began to attempt to use specially conceived of diagrams, to act as aids to discussion. As my opponents in the consensus have more and more leant towards describing everything in purely mathematical terms, I have had to soundly, and effectively criticize such an approach, and diagrams have been my counterweight to their mathematical "essence".

The crucial step in this battle of the philosophical standpoints, the crucial area is undoubtedly in the study of Abstraction.

It is the means by which mankind gets a handle on individual aspects of Reality, with TWO different purposes in mind. First, the abstraction must equip the user to manipulate the given aspect of reality, (usually to some useful purpose), and secondly, it must be also depended upon to throw some objective light on the explanation of WHY that aspect is the way it is. Control and Causality seem to be the reasons for Abstraction.

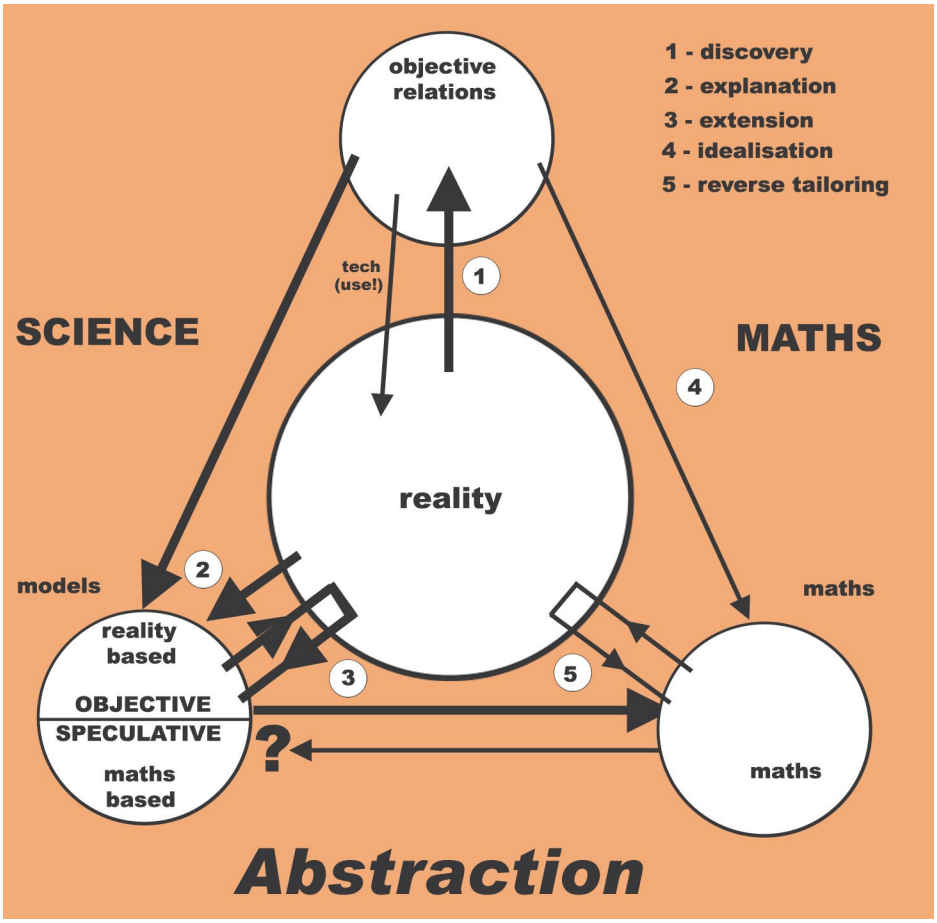
> [NOTE: these two purposes must NOT be seen as equal aspects of the same thing. They are not. While functional use can, and usually is, limited to the given abstracted aspect, explanation is much more demanding. It requires coherence over an extended set of aspects. It is expected to integrate as well as explain]

Now, where do we start?

I decided to use a special sort of diagram - somewhat allied to Venn Diagrams in that they used areas {usually circles} to denote SETS if things. Sometimes these "things" were pretty concrete and remarkably extensive. For example, we could have a circle with the name "Reality", an extremely comprehensive category, in that it includes everything concrete in the Universe, while at other times a circle could contain such things as "Objective Relations", or "Mathematical Forms", or even "Explanatory Models". The idea was to LINK such areas by means of the **processes** of Abstraction, and these took things from one category and by means of a given process, generated another so called **production**. The simplest picture of what I was doing was going from production to production by means of processes.

Enough of all these words! How about a picture?

Overleaf is my initial diagram of the main processes of Abstraction. Remember this was the first of many, but it cannot be omitted as it set the direction for all subsequent efforts, which were, in effect, extension and extrapolations of this fist form.



A few words of explanations are perhaps essential at this point.

> [*Please don't start with the criticism of self referential elements just yet, will you?]*

At the heart of the diagram is the category Reality. This must be where to start. Reality is observed and studied by mankind, and certain "objective relations" seem to be in evidence, and worthy of further study. These are isolated from their wider context and studied in their own right. Conclusions can be drawn as to what exactly would happen in this precise fragment if changes were made. Back to Reality for an experiment to see if the relation correctly predicted subsequent performance. At this point we are still at the top of the diagram. Process no. 1 is the extraction, and the process immediately to its left is the **Use** back in Reality.

A much more powerful process would be the one numbered 4 on the right hand side. What is happening here is the total isolation of the Form of the relationship into a pure maths equation. This is often called universalisation or idealisation, because, once isolated in this way, the form becomes useable in a wide variety of situations, which nonetheless display the exact same form as an isolatable aspect of reality.

Alternatively, such objective relations could be ***explained*** by the construction of explanatory models, as indicated by process 2 on the left hand side of the diagram. Thus, we already see emerging the different **processes** of Science (explanation) and Mathematics (form) giving explanatory models and mathematical formulae as their **productions**.

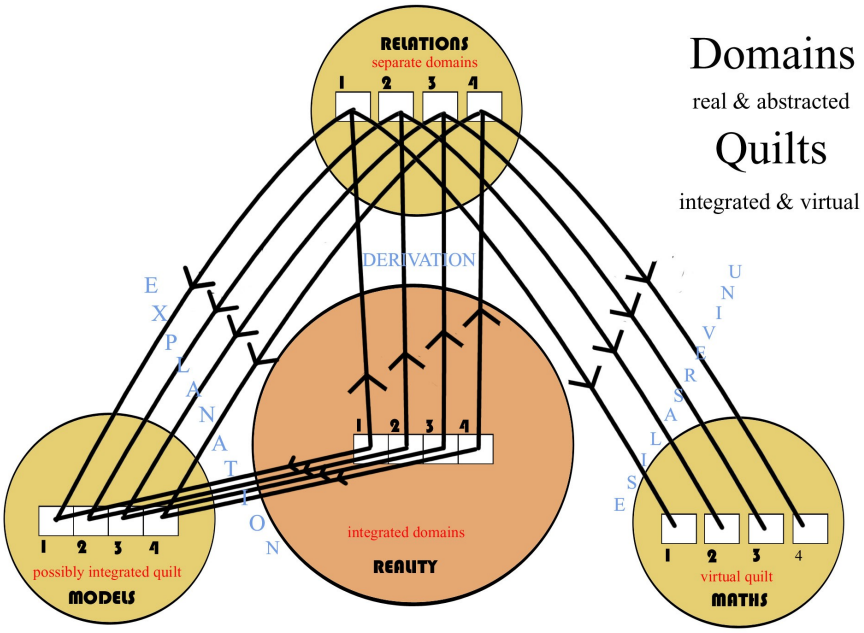
The lower half of the diagram is where the processes of Abstraction get even more interesting.

> Notice that process 2, is not a mirror image of process 4. It includes a contribution from Reality as well as Objective Relations. This reference back to Reality is ESSENTIAL, if what is being attempted is an ***explanation.*** An abstracted maths form is simply inadequate, when this is our purpose. Apart from the relation itself, the CONTEXT must also be involved and, where possible, integrated with the simple relation. Explanation demands more than formal abstraction, which is the method of universalisation and gives only the Form of the relation.

Here we see at process number 3, that there is a two-way process of interactions between so-called objective explanatory models and Reality. This allows of extrapolation and "reality testing" and includes the extension, modification or even demolition of the model used. This is the Scientific Method!

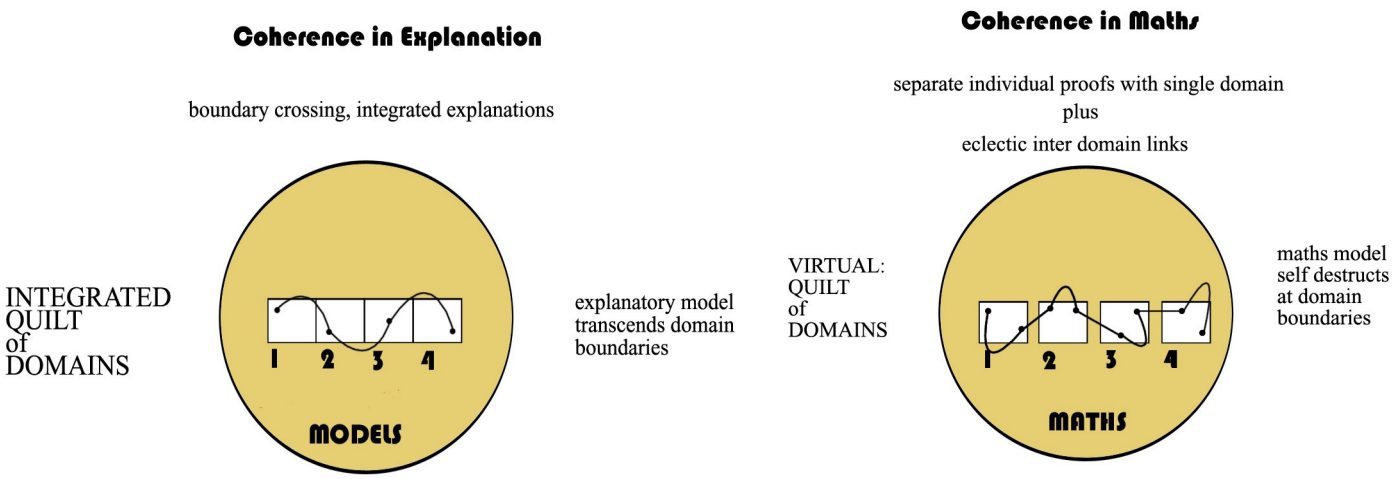
The usual problem with meaningful description of a new sort of diagram is that the writer can (almost unavoidably) be drawn into the thing being displayed, rather than the possibilities of the means of display.

And the reader will have noticed, I am already moving down this steep slope. But, I must attempt to keep the viewpoint of the potentialities and power of the diagrams, as is the purpose of this essay. After all, I don't do these diagrams to show my versatility and power of invention. I do them because they assist my studies in profound ways.
Let us move on a bit, beyond diagram number one, into my studies of Abstraction.
The next diagram attempts to reveal crucial features of three important processes. These are **Derivation**, **Explanation** and **Universalisation** when repeatedly applied to closely related areas of Reality.



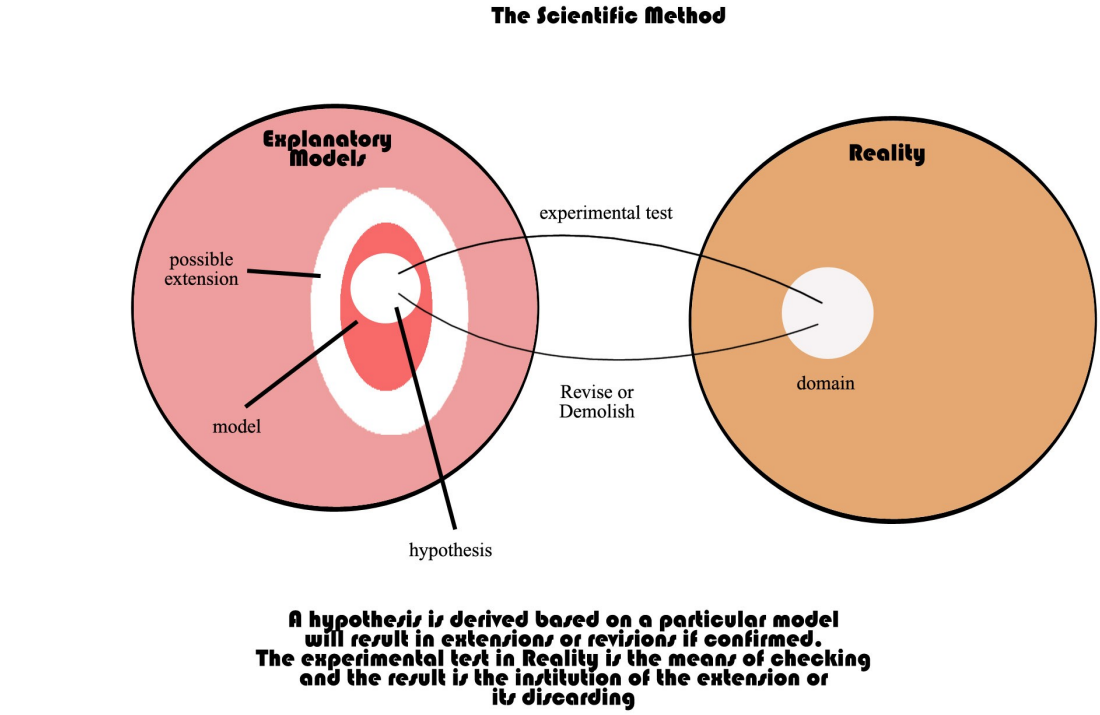
The unavoidable first steps must be Derivations; this particular form of diagram can show what the previous did not. As we have here a SET of relations in connected areas of reality, several important features appear as the process is repeatedly applied. Looking at the diagram we see that the set of related aspects are INTEGRATED, whereas once they have been abstracted as relations they are SEPARATE!
The two main processes, which start from Objective relations, differ in the same way. While Universalisation (mathematical form) produces still isolated abstract formulae, Explanation with another input from Reality re-integrates the group of Objective Relations into a coherent model. In this regard, in spite of the many faults of Explanation, it is decidedly more profound than Mathematics.
This position will, I am sure, be rejected, but it is nonetheless true!
Maths deals with Universal, descrete Form, whereas Explanation deals with coordinated, causal systems. Did the diagram help?

Now, such diagrams as these can go on forever. A crucial concept in Abstraction is Coherence, and the next two diagrams contrast coherence in Explanation with "coherence" in Mathematics.

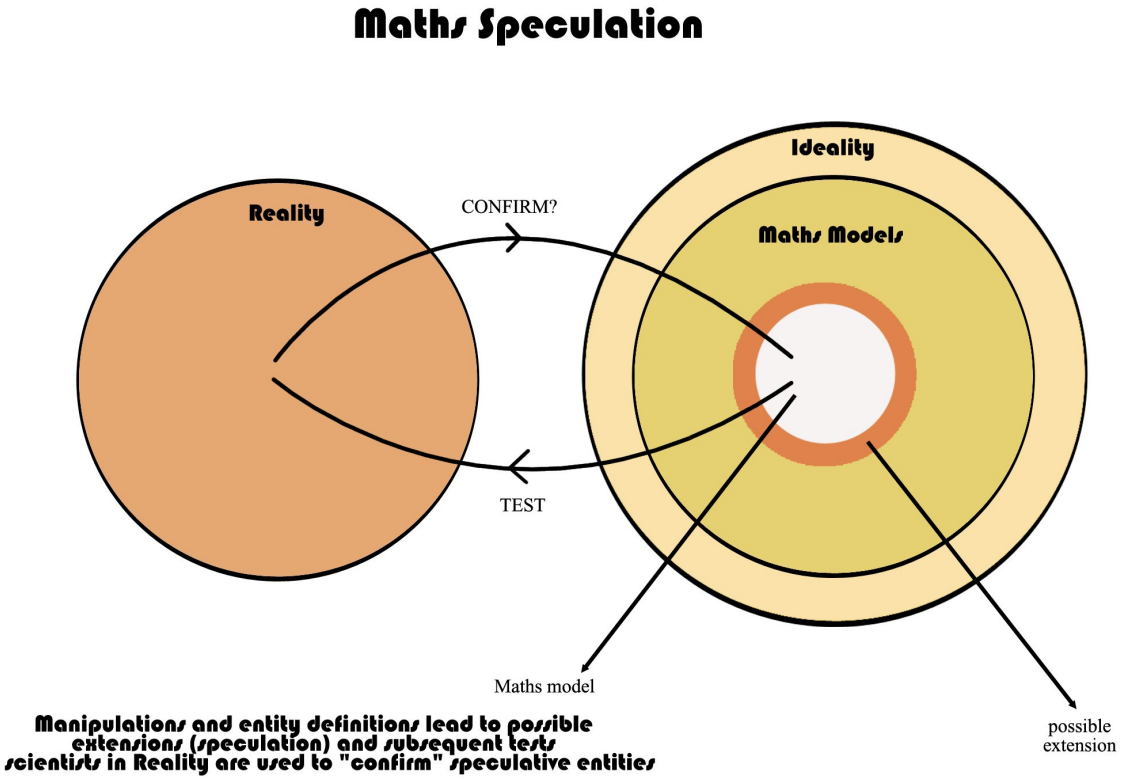


Next we have a diagram, which takes an important section of our first effort and deals with it in detail. This is the Scientific Method diagram

See if this



figure, and the next one, which portrays Mathematical Speculation, can help in explaining what is going on. As always, I am not here to teach Philosophy, so I'll have to leave these tasks to the reader.
Helpful Hint: What do you think Ideality is?

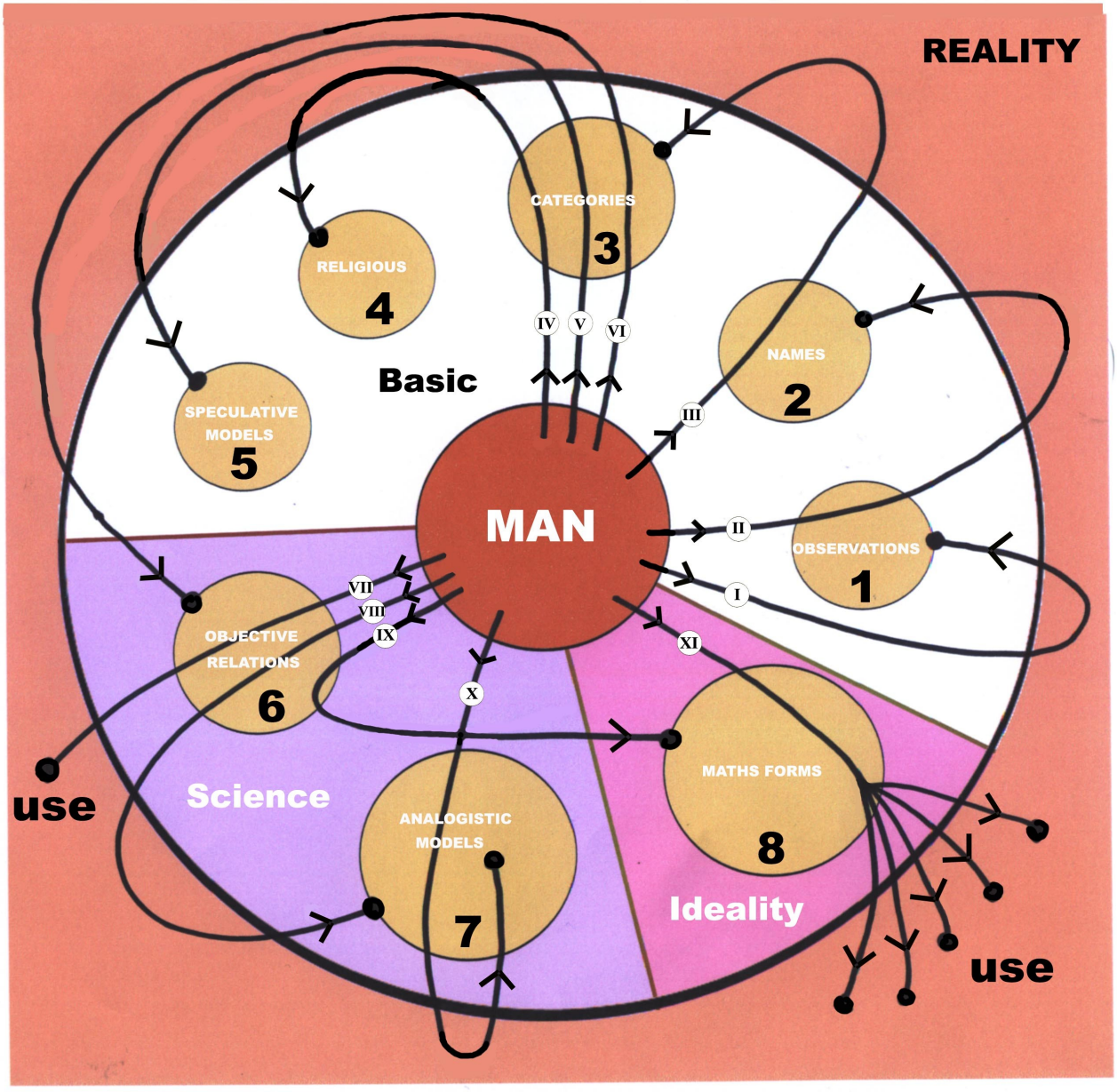


This series of diagrams is still in its infancy. Important areas such as Geology, Cosmology, Computer Modelling, Medicine, Meteorology, Pragmatism, and even the History and Evolution of ideas in Abstraction are all in the process of being tackled and diagrams will surely be an essential part of the task.

Late News

Since completing this section I have been moved to radically update the main Diagram of Abstraction Processes and Productions that appeared at the beginning of the piece. What has changed is that many things that were implicit in the original form have now been made explicit.

Instead of Reality being a single area similar to all the rest, in this new form it has become an infinite surrounding frame, while MAN – the active element in all of this, now takes centre stage as the initiator of all processes. All previous ground is clearly shown by the route of Processes through necessary precursors, to resultant productions, and more early (previously omitted) Processes have now been added in. As this is not a study in Abstraction, but one in Diagrams, I will not further elucidate the content, but the evident role of the new conception of the diagram must be emphasized. The initial version now looks artificial in contrast, and many implicit elements have been clearly expressed in the new form, while the imperatives of this change completely revolutionised how the diagram was designed.



The New Version

NOTE: Needless to say, even this is not the last word on the subject.

(1772 words)