

Preface to “Ethnomathematics and Philosophy”

Bill Barton

We who undertake ethnomathematical studies still have a philosophical problem. I still believe that a version of mathematical relativity is one of our basic assumptions. That is, the study of ethnomathematics rests on the idea that there can be more than one form of mathematics—it is neither absolute nor Platonist. Postmodern writing is exposing more about the contingent nature of mathematics, and the historicity of mathematics is becoming more accepted. Subjectivity and objectivity are becoming blurred (Brown 2011; Radford et al. 2008). But we are still a long way from wide agreement on a philosophical position that “allows” ethnomathematical investigations.

So how do I justify my own continued research activity in this area, and how can I justifiably encourage prospective PhD students to come and study with me? The answer is that, so far, I have not come across an argument that convinces me that a Wittgensteinian perspective is inadequate. Indeed, I feel more strongly that this is a useful way to consider philosophical questions in general. That is, I do not take a classical view. I am not worried about ontology or epistemology so much as I am worried about language and thought.

For example, just as, in my article, I question the nature of mathematical objects by suggesting that they are “objects” merely in a linguistic sense—we use nouns to talk about them—so also I now extend this kind of thinking to mathematics itself. We ask: “What is mathematics?” But this is to create something called “mathematics,” which may or may not exist.

Wait a minute. Surely I am not suggesting that mathematics is a chimera. No, I am not. But I am suggesting that we bring mathematics into existence by talking about it, and the way we talk about it changes the questions we can ask. We talk about mathematics as if “it” is something. But perhaps mathematics is, rather, a way of doing things? Or perhaps it is primarily a characteristic? Hence we talk about mathematising, and mathematical, respectively. But usually we regard the verb and

B. Barton (✉)
University of Auckland, Auckland, New Zealand
e-mail: b.barton@auckland.ac.nz

the adjective as derivative of the noun. We have this thing called mathematics, and so when we are working with this thing we are mathematising, and when we see connections to this thing then they are mathematical. But this is just English grammar (and the grammar of some other languages). There is nothing to stop us regarding mathematising as the primary expression of our field, and make the noun and adjective the derivative forms.

What difference does this make? Well, it makes us ask different philosophical questions. For example, it would no longer make sense to question the existence of mathematical objects. There would still be mathematical objects, but they would be clearly seen as having been brought into existence by the primary activity of mathematising. There would be no question about whether they exist independently or about how we come to know them. We mathematise, and therefore we create the objects by our thought, and attempt to communicate them to one another. The ontology and epistemology of mathematics simply is not a problem any more.

Philosophically, then, I like to explore the way we talk about mathematics, or mathematising, or mathematicality. But I am not concerned about which of these states is prime. I take a rather contingent view, even of my own philosophical position. Rather than try to find out which is the correct state for mathematics, I would much rather play a “what if” language game.

What if mathematising is the prime state? How would I now talk about ethnomathematics? Suddenly it becomes different (not necessarily easier) to consider cultural relativity. The moment we accept culturally differentiated cognition (or even culturally differentiated propensities in cognition), then, we seem to be able to consider culturally different mathematising.

I do not escape the universalising tendency of mathematicians completely. It would still be possible to talk about universal features of mathematising—but now the universals are not objects (circles, sets, theorems) but are features of thought such as rationality (whatever that may be).

My tendency to play a “what-if” language game has given me another way of justifying ethnomathematical activity. Mathematicians have played along “as if” mathematics was absolute for a long time—so what if we play along with the idea that it is not? Where will that lead us?

And so I am ultimately led into the big challenge for ethnomathematics: Where will it lead us? What good has come of ethnomathematical activity? Do we have new ways of thinking mathematically? Do we have new mathematical objects? Do we have new characteristics to be included in the adjective mathematical?

Yes.

To just take two examples from my own students’ work, Alangui’s (2010) study of the ethnomathematics of rice terraces in northern Philippines uncovered a model of water flow that included social values. Adam’s (2010) ethnomathematical engagement with Malaysian food cover weavers and mathematicians resulted in a 2-dimensional computer weaving template that takes account of the 3-dimensional conical nature of the woven object.

An untapped field of ethnomathematical activity is inside mathematics itself. The article refers to differing perspectives in statistics. What about the emerging algorithmic perspective on old problems made possible by modern computing (Knuth

1985)? Should we describe this as part of the development of mathematics or as a new (or renewed) “culture” within mathematics?

Rather than worry about language-generated philosophical questions, I am more interested in the mathematical creativity of the human mind.

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