How do we want to render our students?

Neil Bibby* July 19, 1993

In Nottingham, Cambridge and London, over the period 13 to 16 July 1993, the life and work of George Green (1793-1841) has been celebrated, upon the occasion of the bicentenary of his birth. Since Green is important to both mathematicians and physicists, it was interesting to reflect on the relative historical emphasis given by these two groups and to see how this relates to education in the two subjects. For instance, physicists celebrate the originators of ideas -consider for example the naming of units (Newton, Ampère, Gauss, etc.), and the body of theory in physics necessarily forces historical considerations- modern physics has not *replaced* classical physics: it complements it, and can only be made sense of by reference to the late 19th century breakdown of classical physics in certain cases. In mathematics new theory replaces old theory (e.g. modern analysis ousts Newtonian/Leibnizian calculus) and so a historical account can be dispensed with.

The events also threw up certain dangers of historical work. For instance, over-simplistic biographical accounts can lead to 'deification'; in Green's case, regarding his intellectual creativity as something which could flourish despite long hard hours working at the mill is a romantic and unhelpful way of interpreting his circumstances. Is 'deification' educationally desirable? Doesn't it `shut-out' the students, and perpetuate the notion of genius, which *they* could never be *themselves*? Doesn't it render students as 'admiring onlookers' rather than 'sharers in ideas'? Isn't it educationally undesirable to be rendered an 'admiring onlooker''?

Doesn't all this mean that historical approaches in mathematics education are potentially as {\it dangerous} as they might be *helpful*? Doesn't this call for a discussion of educational philosophy? How do we want to *render* our students? This is the central question.

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