

article<sup>2</sup>, the available resolutions bank on very different physical reasons and calculations to arrive at a resolution. The difference in the time measured by two clocks cannot be due to multiple physical reasons if the entire time difference is attributed to each of these reasons, as in different resolutions! Also, Einstein himself in his paper regarded all special relativistic resolutions as incorrect, and offered his resolution based on the equivalence principle and general relativity. Grøn's enthusiastic but naïve assertion that Einstein's as well as special relativistic resolutions are correct defied logical integrity and consistency, and I thought that it was pointless to repeat my arguments.

However, it might be worth discussing one aspect. I had pointed out a new situation in twin-clock comparison that proved beyond doubt that acceleration at any point of the trajectory could not be the reason for the relative time difference. This involved freezing the reading of one or both clocks during any brief period of acceleration. In my analysis it should have been obvious for anybody who thinks about the situation that this freezing could be done locally by the observer who decides his accelerations, without being prompted by signals sent by the other observer. This important but simple point has

been misunderstood completely by Grøn, and he goes into a long-winded and irrelevant calculation. The fact that accelerations cannot affect a stopped watch is obvious. If the period of acceleration is very short relative to the entire duration of the trip, then the time difference between the two observers must have been accumulated in the trip, but no part of it could be due to the acceleration. I brought in the point of both clocks being stopped just to block the usual illogical arguments that one sees in standard resolutions, where one attributes the time difference to some perceived change in the stationary observer's clock when the other observer changes his state of motion. However, this is clearly not needed, and one can consider the observer *B* freezing his clock-reading during any period of acceleration, without any signal prompt from *A*, and the results will essentially be the same (with small corrections proportional to 'stoppage time'). Hence it is clear that Einstein's resolution that used acceleration and the apparent gravitational field through the equivalence principle is incorrect. Since Einstein himself discredited all other resolutions as unsatisfactory in his paper, I do not want to stress that again. The correct resolution is that the time dilation is caused by motion through

the matter-filled universe, and this has nothing to do with accelerations and non-inertial motion. The effect is gravitational, due to real matter in the universe, and not due to the acceleration and brief apparent gravitational fields, as Einstein thought. In fact, gravitational 'field' is irrelevant for the problem, and what matters is the difference in potentials experienced by the clocks, which depends on the velocity of the clock with respect to the preferred cosmic frame. Finally, my challenge to defenders of special relativistic resolutions and Einstein's resolution on this matter (the two are contradictory, as Einstein himself noted) is to rigorously disprove my assertion that the effect is due to cosmic gravity and not due to acceleration, etc. perhaps by a counter example!

1. Grøn, O. G., *Curr. Sci.*, 2007, **92**, 416–418.
2. Unnikrishnan, C. S., *Curr. Sci.*, 2005, **89**, 2009–2015.

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## A 'copy and paste' review article published in *Current Science*

I read with interest the article 'Plagiarism, a scourge' by K. R. Rao (*Curr. Sci.*, 2008, **94**, 581–586), in which he has explained the fraudulent means adopted by authors for publishing the papers. It is surprising to know that about 80 such articles were submitted in last three years to *Current Science* alone. One such article came to me for review two years ago, and I brought it to the notice of the editorial staff with all relevant details.

It appears that even after such careful scrutiny by the editorial staff, some manuscripts get accepted and published. One such review article was published in a recent issue of *Current Science*, 'Biosurfactants: Properties, commercial production and application' by Muthusamy *et al.* (*Curr. Sci.*, 2008, **94**, 736–747).

Almost 70% of the review was 'copy and paste' with minor modifications from the following reviews published earlier: (1) Nischke *et al.*, Biosurfactants in food industry. *Trends Food Sci. Technol.*, 2007, **18**, 252–259. (2) Mukherjee *et al.*, Towards commercial production of microbial surfactants. *Trends Biotechnol.*, 2006, **24**, 509–515.

My intention is not to accuse but to hope that highlighting such practices will minimize them in future.

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### *Editors' Note*

A significant proportion of the article, 'Biosurfactants: Properties, commercial production and application' by K. Muthusamy, S. Gopalakrishnan, T. K. Ravi and P. Sivachidambaram (*Curr. Sci.*, 2008, **94**, 736–747), has been reproduced from the article 'Towards commercial production of microbial surfactants' by S. Mukherjee *et al.*, in *Trends Biotechnol.*, 2006, **24**, 509–515.

The *Current Science* article is withdrawn.