correspondence

Research 'ridiculous'

SIR,—Regarding your editorial of 8 September, it seems to me that the Psychological Association and Dr Shockley and Dr Huxley have all missed the point. The proposed research may be desirable or deplorable, but above all it is ridiculous.

Dr Shockley proposes the existence of close linkage between the (unknown) polygenes for skin colour and the (unknown) genes that determine (unmeasurable) absolute intelligence. Even the existence of "absolute intelligence" is unproven and debatable.

For present day genetics and psychology to tackle this problem is like Antonie von Leeuwenhoeck studying the structure of the ribosome. Maybe it will be possible some day, in the far future, by which time, hopefully, we will be getting excited about something other than race.

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Using hyphens

SIR,—I heartily endorse J. Faber's plea (19 May, page 202) that semantically essential hyphens be reinstated in compound adjectival phrases. The current practice of abandoning this punctuation nearly always generates serious ambiguity, or even utter gibberish. Thus, a printed label on a recent pharmaceutical product advises me : "Do not take with milk or calcium containing antacids." (In this instance one must presume the reference is to *low* calcium, since a recent report in a reputable journal refers to "high calcium containing phospholipids".)

Faber rather charitably attributes this widespread offence to "sheer sloppiness", but my experence has been that the problem stems largely from a deliberate editorial conspiracy. Critical hyphenation is commonly deleted between manuscript and galley, and frequently the deletion is enforced over the authors' protests concerning the resultant semantic atrocities. If one encounters the phrase "men chasing women" in print, the prevailing editorial policy makes it impossible to conclude which group of participants is pretending to be in flight.

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Solar nuclear waste disposal

SIR,—It has been recognised for some years that nuclear (fission) reactors are power sources for which there is an increasing need in view of growing world demands for power and depleted fossil fuel supplies. Such power reactors provide a reliable bridge to new power technologies, such as fusion and solar energy collection, which are under long term development.

However, serious questions are rightly asked about the real and imagined safety aspects of the increased proliferation and use of fission reactors of various types. One principal area of concern is the need to find acceptable and safe long term methods for disposal of spent nuclear fuel. Many have yet to be convinced of the conventional wisdom of burial of such wastes in deep ocean trenches or in deep stable rock formations.

In the light of our undoubted need for increasing access to nuclear power, coupled with parallel needs for safe disposal of nuclear wastes, I suggest that serious consideration be given to the application of existing space technology to transport such wastes to the sun.

Reliable space transport systems have been developed in a number of countries during the past two decades. They culminate in the Space Shuttle System. Within the next few years the Shuttle will be making regular, and almost routine, manned journeys between the earth and earth orbits to perform a wide variety of tasks. These include transport and operation of Spacelab, launch of satellites, recovery and manipulation of payloads in space using the Remote Manipulator Facility, deployment of Space Telescope and so on.

It is thus suggested that serious thought should be given, at an international level, to the possibility of using Shuttle or Shuttle technology to carry, on a regular basis, safely encapsulated containers of nuclear waste into temporary parking orbits above the earth from which they can be assembled into payloads for vehicles (also carried into orbit by Shuttle) to carry them on to the sun. The development of such a 'sun-bus' system including its propulsion and guidance components is well within the capability of contemporary space technology.

The writer does not overlook the many economic and safety aspects of this proposal which will have to be considered in the development of this application of space technology to the service of all mankind. It would appear to be as attractive, if not more attractive, from many points of view, as the current terrestrial nuclear waste disposal methods which are used or which have been proposed. It has the strong advantage of not imposing a social burden lasting for many centuries for the monitoring and safeguarding of our legacy of nuclear waste.

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Farm energy

SIR,—In his recent contribution Kenneth Mellanby seems determined to show us that everything is for the best in the best (ours) of all possible worlds. When it comes to energy use in farming he should be more careful: one man's objective view is another's blind prejudice.

Although our use of energy in farming looks modest by comparison with our profligacy in other directions, it is monstrous by world standards. If all those bushmen, whose energy economy he derides, were to adopt our farming methods they would use all their countries' usual energy supply in the process. If they were foolish enough to adopt our food processing habits as well 40% of the global energy supply would be required.

Although it is possible for several people to be fed from 1 ha, farmed by modern methods, that is not what happens; something like 0.7 ha and half a tonne of oil a year are needed to feed each and every Briton. Of course we have got used to all this, and it would be politically awkward to change, but that is not to say we have a God-given right to carry on. As Gerald Leach says in his book *Energy and Food Production*, "this is quite clearly not a viable system for all time".

Finally, I cannot share Mellanby's optimism that we are responding adequately to the problem he seems so intent to minimise. The main driving force of technical change in food production is towards economy of labour use. I see no sign of significant reductions in energy requirements.

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