Regarding methodology, re-analysis of our data at electrodes parietal 7 (P7), P8, parietooccipital 9 (PO9) and PO10 considered separately replicated our original results (**Fig. 1**). The authors imply that there is an agreed standard for N170 measurement, but in their own studies, and across the field, electrode selection varies substantially. Moreover, correcting the N170 with reference to the preceding P1 presupposes that P1 exclusively indexes 'low-level' features, in contrast to suggestions that P1 reflects structural encoding of faces[9,10]. It is preferable, in our view, to control stimuli on critical dimensions and assess event-related potential (ERP) responses at face value.

Finally, intracranial recording studies are undeniably important. We simply note that the need for stimulus control also applies to this technique, and that some caution is appropriate when making comparisons between epileptic patients and healthy volunteers.

In sum, several fundamental properties of visual stimuli must be considered together in the analysis of the N170. We hope that our initial findings will inspire fruitful new research on this rich index of human visual cognition.

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Unlikely stem cell therapies

To the editor:

The editors of *Nature Neuroscience* have taken a critical view[1] of my recent article[2] that discusses the long-standing scientific problems preventing human embryonic stem cells (hESCs) or their derivatives from being safely used in patients. Although the editors acknowledge that I am "correct in asserting that there are formidable hurdles to overcome before hESCs might serve therapeutic purposes", they groundlessly assert that my article is "anti-scientific", "polemical" and a "disingenuous distortion of scientific arguments." I will not attempt to refute this false characterization. I will simply restate what the editors do not—and cannot—deny: the scientific evidence overwhelmingly indicates that hESCs are unlikely to be useful for human therapies in the near future.

The issues of immune rejection, tumor formation and hESC differentiation raised in my article are not distortions or mere polemic; they are matters of scientific fact. These same concerns have been raised in the scientific literature[3] and voiced by leading scientists in the stem cell field. James Thomson cautioned that "major roadblocks" must be overcome before hESC-derivatives could be safely transplanted into patients, and concluded that surmounting these roadblocks will be "likely to take a long time"[4]. Similarly, Robert Lanza noted that immune rejection is a significant problem, and warned that creating hESC lines to match most patients "could require millions of discarded embryos from IVF clinics"[5]. Although the editors dismiss as "tenuous" the connection between therapeutic use of hESCs and the genetic/epigenetic abnormalities introduced during cloning, this same concern was raised by Jose Cibelli's recent article in *Science*[6].

The editorial attempts to draw a parallel between hESC research and my own scientific field (neural regeneration), stating that "a lot of money has been sunk into that field without making any quadriplegics walk", and urging "stem cell combatants to apply the same scientific standards to hESC research as they would to any other field". This comparison is specious. Researchers in neuronal regeneration do not routinely make unfounded claims regarding imminent cures for paralysis. Yet based on misleading and incomplete statements, the public has been led to erroneously conclude that hESCs will prove a veritable panacea for treatment of disease and injury in the near future.

Although serious scientific obstacles may not constitute sufficient reason to "abandon the search for stem cell therapies", such obstacles can be addressed with far greater scientific power using animal models. For ethically controversial hESC research, we must engage in a frank, public discussion of the formidable hurdles preventing the development of stem cell therapies, if public policy is to be based on scientific fact, and not on science fiction. Rather than promoting such a rational civil discourse, the editors of *Nature Neuroscience* have sent the clear message that scientists who break ranks and publicly discuss the serious obstacles confronting hESC research will be groundlessly maligned in the editorial pages of a prestigious scientific journal. Attempting to suppress public disclosure of the facts is, in the words of the editors, both a "disingenuous distortion" and an attempt "to spin science…to fit an anti-scientific purpose".

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Editor's note: We welcome comments on this issue on our blog, Action Potential, at http://blogs.nature.com/nn/actionpotential/2007/04/does_human_embryonic_stem_cell.html

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