have a high activation cross section, produce a species that has a short half-life, emit a gamma ray at a characteristic energy, and not interfere with the performance of the explosive.

For this purpose, prompt gamma-ray activation analysis (*1*), in which adsorption of a thermal neutron results in a nearly spontaneous emission of a gamma ray ($T_{1/2} < 10^{-12}$ s), appears particularly promising. Best results are obtained using a pulsed neutron source operated at a repetition rate significantly faster than the half-life of any emission of comparable energy arising from a delayed gamma process of another activated element.

Among the possible elements (those that emit prompt gammas), gadolinium (Gd^{157}) has the advantage of the highest thermal neutron cross section. The natural abundance of the stable (nonradioactive) isotope Gd^{157} is 15.7%. With the continuous neutron generators now in use, a detection limit of roughly 0.01 milligram (mg) of Gd is conceivable; marking a pound of explosive with 10 mg of Gd would cost only half a cent. Moreover, this quantity of Gd ensures easy detection of dangerous quantities of explosives. Because of the high sensitivity of this detection method, the speed of detection would be limited only by the mechanical rate at which potential concealed explosives could be passed through the detector. Consequently, not only could luggage be processed at the rate of ten items per minute, but mail could conceivably be screened by this method as well. Gd is an element not normally found in luggage (or mail). If necessary, false positives arising from trace levels of naturally occurring marker atoms in luggage could be significantly reduced by enriching the tag with the isotope that produces the prompt gamma. Deviations of the ratio of the prompt to the delayed gammas from the natural abundance would then indicate the presence of tagged explosive.

Implementation of this method as an ancillary technique could be accomplished with only slight modifications to the neutron activation equipment now in use. Moreover, it would have unusually high sensitivity and specificity for measuring tagged explosives and would be a difficult screening method to foil. The proposed markers are inexpensive, virtually nontoxic, and would not identify the manufacturer, eliminating concerns about cost or product liability.

Clearly, this method applies neither to explosives already in existence nor to illicit manufacture of explosives (which historically is a risky business). President Havel of Czechoslovakia has stated that the previous, communist government shipped over 1000 tons of Semtex plastic explosives to Libya (*2*). For these explosives, which have an expected shelf life of 15 to 20 years, we must rely on other means of detection. However, plastic explosives are not trivial to make, and there are only a few U.S. manufacturers. If commercial explosives manufacturers worldwide would adopt the marking scheme proposed here, risk from the casual use of explosives by terrorist groups would be reduced now, and increasingly so in the future.

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2. C. R. Whitney, *New York Times* (23 March 1990), p. A7.

"Underclass": Problems with the Term

Ronald B. Mincy *et al.* (Articles, 27 Apr., p. 450) are right to emphasize how much the measurement of the so-called "underclass" depends on the definition of the term, the lack of agreement among social scientists about that definition, as well as the fact that "any one definition of the underclass . . . is inherently subjective and arbitrary." However, they do not consider the possibility that the very term itself is inherently subjective and arbitrary. As a result, their review of "underclass" research does not acknowledge the large number of social scientists who reject the term as a construct of the academic and journalistic imagination—and its "behavioral definition" by Mincy *et al.* as the latest academic simile for the undeserving poor.

In addition, they do not discuss the extent to which the academic term lends itself to use as a codeword that can hide racist attitudes and thus do not mention the resulting opposition of many black social scientists and journalists to the term for that reason.

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Response: All constructs, including the underclass, are the result of someone's imagination. By defining and quantifying the term, we have tried to clear away the rhetorical and emotional underbrush surrounding

the concept. We regret that some social scientists see the term as a simile for the undeserving poor and especially as a racist codeword. Making such a charge is a good way to stifle open discussion. We have been personally involved in a search for policies that would stem growth of the underclass, something we wouldn't do if we thought they were "undeserving" of assistance. Our point is that lack of income isn't their only problem. We also note that many of those most centrally involved in research on the underclass, including William Wilson, Erol Ricketts, and Ronald Mincy, are black social scientists who do *not* find the term objectionable. There will, of course, be misuse of the word and of our research. However, in the interest of raising some important questions and establishing some useful facts, social scientists should be willing to take that risk.

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Cynomolgus Monkeys

In her article "Imported monkey puzzle" (News & Comment, 30 Mar., p. 1538), Marjorie Sun incorrectly states that there are no U.S. breeding colonies for cynomolgus monkeys. There are a number of small U.S. breeding colonies, both commercial and government-sponsored. Examples include the colonies at several of the regional primate centers funded by the National Institutes of Health and large private facilities in Texas and other states. However, their production is not sufficient to meet the demands of the research community, and we definitely need to continue importation.

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Erratum: In the report "Tick anticoagulant peptide (TAP) is a novel inhibitor of blood coagulation factor Xa" by L. Waxman *et al.* (4 May, p. 593), the second sentence of the caption of figure 2 was printed incorrectly. It should have read, "Determination of the intrinsic K_i was done by fitting the observed data (•) with nonlinear regression analysis to the ratio of inhibited velocity (V_i) to uninhibited velocity (V_o) described by the equation

$$V_i/V_o = \frac{[E_t - I_t - K_i^*] + [(I_t + K_i^* - E_t)^2 + 4K_iE_t]^{1/2}}{2E_t}$$

derived by Morrison for tight-binding inhibition (7) (solid line), where E_t and I_t are the total amount of enzyme and inhibitor, respectively, included in the assay."