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Letters

Is "Doomsday" on Target?

Fifteen years have now passed since von Foerster, Mora, and Amiot published their thesis "Doomsday: Friday, 13 November, A.D. 2026" (*1*). Their work contained the following formula for world population, N, as a function of time, t

$$N = \frac{1.79 \times 10^{11}}{(2026.87 - t)^{0.99}} \quad (1)$$

where time is measured in years A.D., the derivation having been based on a combination of empirical and theoretical reasoning. As they showed, the formula provided a remarkably close representation of human population for the period 1750 to 1960, for which figures of some accuracy are available, and also was in agreement with estimates of population 1000 and 2000 years ago.

On this 15th anniversary of their article, and as our bicentennial year approaches, it seems appropriate to ask whether the world's population still remains on target according to Eq. 1.

Putting $t = 1975$ in Eq. 1, we find that $N = 3.65$ billion persons. On the other hand, the Population Reference Bureau's 1975 estimate for N in mid-1975 is 3.97 billion (*2*). Thus, we are not merely on target according to Eq. 1, we are in fact comfortably ahead of schedule. That is, while the formula of von Foerster *et al.* predicted an infinite world population as of A.D. 2026, our present growth rate gives us hope of reaching the desired goal even earlier than they expected.

Some of my colleagues have suggested that, in view of this, we should revise our estimate of the glorious moment, moving it forward say 5 years, thus giving a larger number of those presently alive some hope that they might be present to celebrate the event.

That Eq. 1 underestimates world population for 1975 is, however, probably an anomaly due to our relative freedom over the past 15 years from major wars, pestilence, or famine. Indeed, the Population Reference Bureau (*2*) sees a "medium variant" population of 6.25 billion persons in the year 2000, which would indicate a turnaround because Eq. 1 predicts 6.87 billion persons for that year. Whether the turnaround will be as great as anticipated by the Population Reference Bureau can, however, be debated. It seems unlikely that the world will so quickly give up its opportunity to reach the desired goal by 2026, before the oil runs out. (The writer may also perhaps be forgiven a personal motive for not wishing to change the year 2026. He will be exactly 100 years old on 1 November of that year, and cannot resist the thought of the usual press interview: he is storing up useful and wise sayings for the event.)

An incisive reader might see difficulties—either human or theoretical—with Eq. 1, but these difficulties have already been carefully dealt with by von Foerster *et al.*, not only in their original article, but also in response to a series of later comments on it (*3*). We content ourselves with the remark that other predictions of the 1975 world population, made at essentially the same time as von Foerster *et al.*'s, ranged from 3 billion to 3.5 billion and thus were considerably less accurate. We are similarly confident that, in 15 years (A.D. 1990), the world population will be much closer to the value predicted by Eq. 1, namely, $N \approx 5$ billion, than to other estimates being made now by those who do not see the millennium arriving quite so early as we do.

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