

## ENERGY

### the debate continues

President Carter's National Energy Plan was examined and evaluated during a one-day conference in May 1977 sponsored by the American Association for the Advancement of Science, Carnegie Institute of Washington, and The MITRE Corporation. The conference was arranged to provide a forum for the presentation and discussion of viewpoints from independent experts in energy and related fields.

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## LETTERS

### Cloning and Maternal Inheritance

In response to Paul R. Gross's illuminating discussion of maternal inheritance and the cloning hysteria (Letters, 14 Apr., p. 126), Mitchel Sayare (Letters, 5 May, p. 486) contends that a literal replica of an individual would result "... if the donor of the somatic nucleus were the same person as the source of the ovum." On a date so close to Mother's Day, the facts must be set straight. A truly identical copy of the donor of a nucleus would need to have developed under the influence of egg cytoplasm identical to that which influenced the donor's development. Therefore, the production of exact copies is not limited to persons capable of oogenesis, but to those with living mothers. Since the size of a woman's oocyte pool declines progressively from a maximum attained before birth, and since human oocytes apparently undergo senescence, as indicated by the increase in chromosomal nondisjunction with age, the candidates for exact duplication may be further restricted to those with young mothers, a category which presumably excludes millionaires in their 60's.

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Mitchel Sayare seems to be accusing me of having overlooked those members of the human race who are capable of oogenesis. I hate to respond, for fear of spoiling the fun of cloning stories, and because a more detailed exposition leads away from my original point. These days, however, no man should take a charge of sexism lying down.

"What if the donor of the somatic nucleus," Sayare asks, "were the same person as the source of the ovum? Here, the 'maternal' messenger RNA would be transcribed from a nucleus virtually identical with the one to be inserted."

True, but beside the point. At issue is the genotype of the oocyte that gives rise to the somatic nucleus donor. That genotype can never have been the same as the donor's, which arises after fertilization. It must have been the genotype of her *mother*, 46,XX before reduction and 23,X afterward.

I put this argument in another way, in case it isn't clear. If you want to make an exact copy of yourself, you had best try by joining one of your body-cell nuclei with an ovulated, enucleate secondary oocyte taken from your mother. Since you are already taking the trouble, you

might as well arrange for her to serve as the implant recipient. If she is then the same age and in the same shape as she was when you were yourself implanting, there is a good chance of seeing yourself emerge some 38 weeks later.

Therein my reluctance to pursue this further: I find it hard to imagine such vanity. I fear, also, the wrath of my classicist colleagues. They have never taken kindly to my amateur exegesis of *Oedipus Rex*. They surely won't take *this* lying down.

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### Language, Projection, and Computer Therapy

Constance Holden (News and Comment, 7 Oct. 1977, p. 32) reported a symposium honoring Carl Rogers on his 75th birthday. Coincidentally, she cited material from a computer program fashioned by Weizenbaum (1) to provide Rogerian therapy to clients answering questionnaires translated into the machine. Her comments elicited a series of letters from Weizenbaum (28 Oct. 1977, p. 354), Palmén (3 Mar., p. 934), and Schmidt (31 Mar., p. 1390) dealing with various aspects of "real" and "mechanized" therapy.

Arguments in this correspondence pivot on different interpretations of what cognitive and affective signals are required for therapeutic change and what signals pass from programmer, through machine, to client. Schmidt (quoting from Holden who cites Rogers) takes the view that the computer cannot provide "authentic 'unconditional positive regard' " for the client and therefore cannot replace a therapist. Palmén, by contrast, points out that a love letter, even though sent through the mail or processed by a computer, is none the less an influential affective link between two persons. Palmén's position may be reinforced by considering the play *Hamlet* stored in a computer and subsequently drawn from that source. Shakespeare and the printout reader are in a genuine affective link. The reader's insights and emotional reactions are a function of life experiences shared with the playwright, including a set of common linguistic associations of awesome subtlety and complexity. It appears that language acts as an affective link whether or not accompanied by feedback devices, facial expressions, voice tone, and other such cues which contribute to empathic reactions in a live therapeutic session.