

## Letters

### Pioneering

How times have changed.

It's not that I am an old codger who actually can remember the Good Old Days. I am still a young man, so when I speak of contrasts, I have to rely on second-hand information. There is, of course, an added hazard in looking at things as they are today, because my view of the present is undoubtedly distorted by my own participation in it.

But, just the same, I keep comparing the situation of a young man in, say, 1870 who wanted to go homesteading on government land and the situation of a young person today who would like to get a piece of the "public domain" recently opened up in the name of research. I wonder if the comparison is really farfetched. In both cases the government is the patron and the prospective beneficiaries of its patronage have the pioneering instinct. Even the purposes behind the patronage are the same. Thus, we speak of "frontiers" in science and try to persuade young people to consider a scientific career by appealing to their spirit of adventure. We, too, have to open up the frontier before some rival power beats us to it. The analogy breaks down when we realize that part of the driving force behind earlier pioneering had something to do with individuals breaking away from a closed society "back East."

This is the way it might have been if yesterday's pioneer had had to put up with the way things are done today:

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(Place: A government land office in the 1870's. A would-be homesteader enters.)

Clerk: Good morning. What can I do for you?

WBH: I would like to put in a homestead claim. I want to be a pioneer.

Clerk: Fine. But first we need some information, so that we can judge your qualifications. After all, we can't give away Government land to just anyone. This information, of course, will

be confidential and will be reviewed by an impartial panel of Eminently Successful Pioneers. Now then, we need to know about your experience. Ever farm before?

WBH: Yes, I raised corn back in Illinois. I worked for another farmer.

Clerk: Were you successful?

WBH: Well, no . . . that is, not very. I thought I might try my luck at something new. Sort of go on my own.

Clerk: I see. Well, we would like to have you submit all of your records. We are especially interested in your productivity, so please include copies of your ledgers so that we may know how many bushels of corn you have produced in your farming career. Also, we would like to have your former employer back in Illinois submit an evaluation. Oh, and please fill out this form, telling us just what you intend to do with land if you get it. We shall need plans of the buildings you would erect, the method of farming you intend to use, evidence that this method will work, and a statement as to how your output of corn will contribute to the total corn picture in the infinite scheme of things.

WBH: But I plan to raise wheat.

Clerk: Oh. Well, it doesn't matter. But just between you and me, corn is currently the most rapidly advancing field.

WBH: When will I find out if I can have the land?

Clerk: The review panels meet three times a year to go over all the applications for homestead claims. I would allow 6 months for a decision. There is one more thing: We require that you sign this oath, stating that you do not now belong to, and never have belonged to, any organization which advocates taking land by force or violence and giving it to Indians.

(Place: The same government land office. Six months later.)

WBH: Well, do I get the land?

Clerk: I am sorry to inform you that, after careful review, the Homestead Bureau found that your application did

not merit approval at this time. However, they will be pleased to receive another application from you in the future.

WBH: What was wrong with my application?

Clerk: Well, I'm really not supposed to give out information like that, but, confidentially, the review panel didn't approve of the way you planned to go about your pioneering program. One of them thought your wheat-growing plan was a little too much like one he's about to begin on his own place. Several felt that your land-clearing plans were extravagant for a beginning pioneer. I might add that your record didn't look too good, either. You really haven't had any experience in growing wheat, have you?

WBH: What do I do now?

Clerk: Perhaps I can interest you in a program instituted by the Eminently Successful Pioneers to help people get started in a career of pioneering. We call it a Pre-Pioneering Fellowship. In this program a young person like yourself can work with an Established Pioneer. This would give you a lot of pioneering experience. You would work on his place and help him produce a lot of whatever it is he is producing. Why, in no time at all, you too will become an Independent Pioneer—Wait a minute. Where are you going?

WBH: Back to Illinois. I'm going to ask that corn farmer if I can have my old job back.

Clerk: Shucks! He's gone. Oh, well, it's obvious he doesn't have the pioneering instinct anyway. They just don't make pioneers the way they used to. Why, in the old days . . .

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### Historical Causality

In his review of Culbertson's book, *The Mind of Robots (I)*, Householder is critical of "historical causality," or "action across a time lapse," which he defines as follows: "in the equations of motion of a dynamical system the derivatives of the six Newtonian coordinates for each element may depend not only upon the instantaneous values of these coordinates but, for a complete specification, may require knowledge of their values in the past." I assume that Householder is referring to dynamic