to average the corresponding hourly data of several days. We did that in this case and the data seemed to suggest underlying rhythms, but no pattern was clearly apparent.

While contemplating the data, it occurred to me that in summer at 40° north latitude the hour of rise of the moon may be retarded by approximately 1 hour each night. Consequently, to eliminate any such lunar rhythm, we "slipped" the data one hour per day, aligning "hour 1" of the first day with "hour 2" of the second day, with "hour 3" of the third day, and so on. This seems to be a standard sort of procedure for analyzing such data. Now, when the hourly figures for the five days were averaged, a daily rhythm came clearly into focus. This rhythm must have been obscured by the simultaneous presence of the lunar rhythm.

Another standard procedure for analyzing such data consists of smoothing the activity cycles by means of a three-point moving average. Consequently, this was done before graphing the results to produce the representation of unicorn activity shown in Fig. 1.

Figure 1 seems to tell a clear story of an endogenous rhythm. Eliminating the effect of the lunar periodicity shows that the peak of endogenous activity occurs at "3 A.M." and that the minimum occurs exactly 12 hours later. The unicorn obviously tends to be active in the early morning and quiescent in midday. The "midmorning" dip in activity indicated in the figure remains unexplained but may possibly be a subject for future research. It seems almost superfluous to mention that, like other "biological clocks," this rhythm is independent of the temperature at which the observations were made.

This example illustrates some of the possibilities for detecting "cycles" by means of relatively simple arithmetic procedures. A rhythm as definite as that in Fig. 1 could easily be shown to be highly correlated with environmental fluctuations, but the nature of the material employed in this experiment seems to preclude any such causal relationships.

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News of Science

German Physicists Protest Nuclear Weapons

Eighteen leading nuclear physicists in West Germany, four of them Nobel prize winners, have announced formally that they would refuse to cooperate in any way in the production, testing, or use of atomic weapons. In a statement issued through the Max Planck Institute of Physics in Göttingen, the physicists said in part:

"We do not feel competent to make concrete proposals regarding the policy of the great powers [on atomic weapons]. But we believe that a small country like the Federal Republic can best protect itself and help world peace if it expressly and voluntarily renounces possession of atomic weapons of any kind."

On the other hand, the men commented that it is of the utmost importance to develop the peaceful use of atomic energy, and in this they are prepared to cooperate. The signers of the statement acknowledged that they were not politicians but maintained that their scientific work placed upon them the responsibility for the possible consequences of their labor. Therefore, they feel that they cannot remain silent on political questions. The statement concluded with a warning that no technical means have yet been developed to protect large concentrations of people from nuclear warfare.

The Nobel laureates who signed the statement were Otto Hahn, the first physicist to split the atom, Werner Heisenberg, Max von Laue, and Max Born. The other signers, all professors, were Carl Friedrich von Weizsaecker, Fritz Bopp, Rudolf Fleischmann, Walther Gerlach, Otto Haxel, Hans Hopfermann, Josef Mattauch, Freidrich-Adolf Paneth, Wolfgang Paul, Wolfgang Riezler, Fritz Strassman, Wilhelm Walcher, and Karl Wirtz.

The statement, which was released on 12 Apr., had a tremendous impact in West Germany and brought an immediate response from Chancellor Adenauer, whose remarks included the following:

"If these gentlemen intended to advocate a general ban on atomic weapons valid for all countries, it would coincide completely with the views of the Government. . . . If however, they meant to say that . . . the Federal Republic should renounce such weapons, then I must say that this has nothing to do with physical science. That is a purely foreign policy matter." Adenauer also commented that the scientists seemed ignorant of recent United States experiments for protecting against the effects of atomic weapons.

On 14 Apr. five of the 18 physicists, led by von Weizsaecker, categorically rejected the Chancellor's replies. They implied that the government's leaders had deceived the German people about the destructive power of tactical atomic weapons. They repudiated Adenauer's assertion that atomic armament was a political matter for which he, as head of the government, was primarily responsible and contended that they had a duty as citizens to take a stand and warn the people against the dangers of atomic weapons.

The five professors also implied that the Chancellor was guilty of concealing the truth when he indicated that their earlier warning had come as a surprise to him. They said that their views had been transmitted in writing last December to the defense and atomic affairs ministers and that there had been private discussions with these ministers in January.

Hahn, one of the group that made the second statement, explained to the press that the question of atomic armament was a matter of conscience for him. He said that the atomic bomb dropped on Hiroshima in 1945 had made a frightful impression on him and that, as one of the pioneers in atomic research, he felt a certain responsibility for what had happened.