Letters

First Person: Immodest or Insecure?

The present writer would like to add his comment to that of Court (*1*) about ascribing false modesty to the use of *I* or *we* in the editorial entitled "Passive voice" [*Science* **125**, 529 (1957)]. That editorial sought to discourage the view that *I* or *we*, used in scientific communications, is indicative of immodesty. It intimated that "the active voice is, in general, more robust and more direct" than the passive voice. The latter was said to inveigle authors into grammatical inexactness, this in turn leading to scientific inexactness.

As one concerned with teaching professional writing to graduate students in psychology, and as an advocate of the passive voice as well (*2*), the present writer follows closely the style manual of the American Psychological Association (*3*). Ever since the first scientific psychologist, Wundt, considered that the expression of feeling in language was more important than communication (*4*), psychologists have been concerned with both functions of language. Scientists in other fields may be interested in knowing how psychologists treat person and voice in their style manual. Presumably their treatment of the appearance of feelings, or other aspects of the personality, in scientific writing has been influenced by empirical investigations with a relatively long history.

Instead of the first person being seen as "robust and . . . direct," psychological stylists claim that "inexperienced and insecure investigators . . . think in the first person because they are so overwhelmingly concerned with what they themselves did, felt, found, or left undone" (*3*). Such novices were also said to have a tendency toward an excessive use of *we*. Psychologists, then, would seem to disagree with the editorial viewpoint expressed in *Science*.

It is interesting to note, however, that both the editorial and the manual presented illustrations of faulty and clumsy usages of the passive voice and their correction. Beyond this similarity there was little agreement.

Whether the active voice expresses robustness or inexperience, whether the passive voice indicates false modesty or objectivity, the remedy for an involved and clumsy usage of the passive voice seems to lie more in attitude than in rule. The passive voice can be well used, as the editorial pointed out, if the writer is maturely aware of his material and his reader as well. In such cases, as indicated in the psychological manual, the writer perceives himself chiefly as a link between the two. It is the research which is important, not the researcher. Employment of the third person would seem to emphasize the writing; utilization of the first person, the researcher, be he immodest or insecure.

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References

1. A. Court, *Science* **128**, 1532 (1958).
2. D. Lebo, *J. Clin. Psychol., Monogr. Suppl.*, No. 13 (1959).
3. *Publication Manual, rev. ed.* (American Psychological Assoc., Washington, D.C., 1957), p. 16.
4. W. Wundt, *Sprachgeschichte und Sprachpsychologie* (Engelmann, Leipzig, 1901); *Volkerpsychologie*: vol. 1, *Die Sprache* (Engelmann, Leipzig, 1911–1912).

The debate over the appropriateness of the active and passive voices will doubtless continue as long as we have a living language. We should like, for the time being, to close the debate with the following quotation from Richard Asher's "Why are medical journals so dull?" [*Brit. Med. J.*, **II**, 502 (23 Aug. 1958)]: ". . . avoiding 'I' by impersonality and circumlocution leads to dullness and I would rather be thought conceited than dull. Articles are written to interest the reader, not to make him admire the author. Overconscientious anonymity can be overdone, as in the article by two authors which had a footnote, 'Since this article was written, unfortunately one of us has died.' "—G.DuS.

German Scientists and the Atom Bomb

Reviews of Robert Jungk's *Brighter than a Thousand Suns* [J. Cockroft, *Nature* **182**, 547 (1958); R. R. Wilson, *Sci. American* **199**, 145 (Dec. 1958); E. U. Condon, *Science* **128**, 1619 (1958)] have not mentioned Werner Heisenberg's recorded opinion of why German scientists failed to develop nuclear weapons during World War II. Jungk's interpretation of the brief and selective quotations given on page 89 of his book, that such research was restrained by humane scruples, is not supported by a fuller reading of Heisenberg's article. An abridged translation [W. Heisenberg, *Nature* **160**, 211 (1947)] of Heisenberg's 1946 statement in *Naturwissenschaften*, "Research in Germany on the technical application of atomic energy," includes the following assertions.

"We have often been asked, not only by Germans but also by Britons and Americans, why Germany made no attempt to produce atomic bombs. The simplest answer one can give to this question is this: because the project could not have succeeded under German war conditions. . . . Finally—and this is a most important fact—the undertaking could not even be initiated against the psychological background of the men re-

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monitored by a photocell. Accuracy of measurement of *p*H, for example, may be ± 0.5 *p*H unit with proper selection of indicators. (Florida Instrument Co., Dept. 653)

■ NEUTRON COUNTER is enclosed in an 8-in.-diameter paraffin-filled cylinder which moderates fast neutrons and discriminates against thermal neutrons. A concentric 15-in. diameter shield attenuates fast neutrons from the side. Ratio of front sensitivity to side sensitivity is 2 to 1 for 4.5-Mev neutrons. Detection efficiency is essentially independent of neutron energy from 50 kev to 5.0 Mev. Electronic components include a linear amplifier with pulse-level discriminator, a count-rate meter with eight ranges from 20 to 10,000 count/sec, a three-decade scaler, and a four-digit register. (Tullamore Electronics Laboratory, Dept. 651)

■ SECTION-PROFILE PROJECTOR permits inspection of turbine blade sections and the like. Two mercury-vapor lamps illuminate the two sides of the blade with a bright line of light. The line of light is viewed by two lens systems. The blade section contour appears on the screen as a dark image outlined by a bright band of light. The projector will inspect work up to 16 in. long, with 2¼-in. chord and 45 deg or more twist. Dimensions can be measured to ± 0.0005 in. and twist to ± 5 min. (Eastman Kodak Co., Dept. 657)

■ HIGH-SPEED CAMERA operates at an upper rate of 25,000 16-mm frames/sec. Framing rate is indicated continually on a built-in meter. Exposure times are adjustable between 1 and 5 μsec, and total writing time is 9 msec at the maximum rated speed. The camera measures 12 in. in diameter by 10 in. long. Weight is 28 lb. (Beckman & Whitley, Inc., Dept. 637)

■ TRITIATED TARGET consists of a titanium coating approximately 0.7 μ thick containing 1 c of tritium per square inch. The films are on 2-mill thick stainless steel or molybdenum. The material produces ion currents greater than 10^{-7} amp/in.^{2} in air. Absolute desorption rate is less than 0.1 μc/c day. (Radiation Research Corp., Dept. 638)

■ CLOCK MOTOR for d-c operation provides accuracy of 1 in 20,000 in a 24-hour period. Instantaneous speed is accurate to 1 in 3600. Power input is approximately 900 μw. Power is supplied from mercury batteries which will operate the motor for more than 1 year. The output shaft rotates at 2.4 rev/min. Operating temperature range is 20° to 110°F. (Park Products Co., Inc., Dept. 654)

■ NEUTRON GENERATOR is a portable, self-contained unit in which neutrons are produced by the D-T reaction at a controlled rate up to a maximum of 10^8 per second. Essentially monoenergetic 14-Mev neutrons are produced. Components of the equipment are a neutron source tube, power supplies, and a control unit. The source tube is a small accelerator tube connected by a 16-ft cable to the high-voltage supply. Maximum ambient temperature is 35°C. Power requirement is 115 v, 60 cy/sec, 5 amp. (Schlumberger Well Surveying Corporation, Dept. 650)

■ AUTOMATIC ANALYZER performs automatically each step of a chemical analysis usually performed manually. Steps such as measuring, mixing, purifying, processing, comparing, and recording are integrated into a continuous flow system. The system is capable of single- or multiple-component determinations including cyanides, sulfur dioxide, silica, phosphates, iron, chlorides, copper sulfate, ammonia, sugar, and aluminum. Traces down to parts per 10^9 are said to be determined with accuracy ± 1 percent. (Technicon Controls Inc., Dept. 658)

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sponsible for German war policy. These men expected an early decision of the war, even in 1942, and any major project which did not promise quick returns was specifically forbidden. To obtain the necessary support, the experts would have been obliged to promise early results, knowing that these promises could not be kept. Faced with this situation, the experts did not attempt to advocate with the supreme command a great industrial effort for the production of atomic bombs.

"From the very beginning, German physicists had consciously striven to keep control of the project, and had used their influence as experts to direct the work into the channels which have been mapped in the foregoing report. In the upshot they were spared the decision as to whether or not they should aim at producing atomic bombs. The circumstances shaping policy in the critical year of 1942 guided their work automatically towards the problem of the utilization of nuclear energy in prime movers."

In view of these excerpts, Jungk's representation of a humanitarian reluctance of German physicists to develop nuclear weapons appears to be an afterthought.

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