

interest and factoring, though these were only used by more sophisticated calculators.

In the first section of the book — dealing with psychology — Smith discusses the various factors relating to mental calculation, drawing on the mathematical and biographical material summarized in his later sections. Here he presents a thesis that mental calculation and language are the same mental skill (Smith himself is a linguist). He makes a reasonable case for this, though it does lead him away from the main stream of his material.

I found two other themes in this first section. First, there has been surprisingly little experimental work with prodigies, and there seems to be little agreement as to what should be tested and how. Second, many of the common conceptions about prodigies are false.

For example, it is widely thought that calculators have a photographic memory and “see” numbers. Binet was the first to discover that this is not necessarily the case. His subject definitely heard numbers and had not learned written numbers until after his mental powers were developed. About half the prodigies are “auditors” and there is a blind prodigy who feels numbers. In addition it is clear that while the memory of prodigies is good for what they are interested in, it is often not exceptional in other ways; indeed musicians, actors, linguists and so on routinely perform more remarkable feats of memory. All the calculators agree that some mental calculation and memorization can be achieved by anyone with sufficient interest.

Also there is the myth that exceptional mental powers are the prerogative of extreme youth. Several prodigies in fact started in their teens and three contemporary ones started in their twenties. Almost all retained their powers throughout life. And although there is a disproportionate number of *idiots savants* and of geniuses among them — about eight of each among the 70-odd cited by Barlow, Tocquet and Smith — the remaining 50 or so prodigies appear to have been fairly normal or successful in life.

Finally, there is one commonly held belief that is valid — most prodigies are indeed male (only six females are mentioned by Smith). Heredity does not seem to be a factor, the only cases where mental calculation runs in a family being where there is clear influence among the calculators.

Professor Smith has written a quite fascinating book and has also done a useful job in bringing together all of this information. The study of prodigies has much to offer the disciplines of psychology, mathematics and linguistics, and this book will have performed a valuable service if it provokes research into their unusual powers. □

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Dangerous talk

Alastair Hay

Workers at Risk: Voices from the Workplace.

By Dorothy Nelkin and Michael S. Brown.

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“They have government agencies that protect you if you buy a defective washing machine or if your car doesn’t steer straight, but nobody’s interested in chemicals”.

“This government is obviously disengaging itself wholesale from worker safety”.

“OSHA [the US Occupational Safety and Health Administration] is what we have to work with, and OSHA is nothing. . . . I realized how ineffective OSHA really is”.

“I wouldn’t dare call OSHA. Our jobs would be in jeopardy. We would be gone within a month”.

“You have to sneak just for your own safety”.

“The company always knows when OSHA’s coming because when OSHA’s coming we never have the same fumes as we have when OSHA’s not coming”.

THESE are the voices of disenchanted workers in the United States, taken from Dorothy Nelkin and Michael Brown’s innovative and perceptive book. There are many who will object to it — captains of industry will find it hurtful; and those in government charged with the responsibility for workers’ safety and health will be stung by the accusations that not only are they doing little about improving safety, but that they are actually making things worse by weakening some of the legislation on the subject.

These are harsh judgements but they are no less valid because they are made by people with a vested interest in protecting their own health. It is rare to find a book which gives workers the opportunity to voice their misgivings. More usually such comments are sanitized in some government report or rendered even more anonymous as just another statistic. The value of *Workers at Risk* is that its subjects are recognizable. They are men and women employed in all manner of jobs — chemical operators, laboratory technicians, railroad workers, orchard workers, painters, sculptors, deckhands are but a few — where they come into contact with chemicals. If they have one complaint in common, it is that they do not know enough about the danger of the materials they work with.

In some ways these individuals are the dispossessed — they have nothing to offer but their labour and in a recession even that comes into jeopardy. Fighting for better safety might make them marked individuals, and the first to be fired when redundancies are made. As the book makes clear, workers in plants that are unionized have a much better chance of implementing changes than their peers in non-union

plants. In the former, the whole of the workforce can be relied on to demand changes, whereas in the latter it is up to individuals with the consequently greater threat of being victimized or fired.

There is resentment too over the actions of the workers’ watchdog, the Occupational Safety and Health Administration. Charged under the 1970 Occupational Safety and Health Act with setting standards and policing them, the agency has been less active recently than it was in its formative years, particularly when Dr Eula Bingham, a well known toxicologist, was OSHA assistant secretary from 1977 to 1980. Bingham gave the agency a sense of purpose. Mere tinkering with the system was not her idea of how to prevent occupational illness, and she introduced new health regulations which were supported by the labour unions but, predictably, opposed by industry.

President Reagan’s appointee to head OSHA in 1980, Thorne Aucter, a Florida construction contractor, has a different philosophy. He believes the industry can protect its workforce more efficiently without government interference. To this end, Aucter revoked or reinterpreted many of the regulations introduced in the 1970s. As a result inspections are down by a third, citations for violations are down by at least that amount and the backlog of worker complaints has risen by 105%.

None of these developments are reassuring to the people represented in the book. As a computer assembler put it:

. . . who are we going to fall back on, especially those workers who don’t have a union to protect them? Our only alternative is supposedly our government, but it doesn’t seem to be our’s anymore, so we’re going to have to find new ways of protecting ourselves.

Such words may sound like a threat of anarchy, but that would be the wrong interpretation. The lesson is not that industry will suffer unduly — the workers still want their jobs — but that it can be made safer. And if the government agencies are not going to provide the assistance they could, then individuals will have to find out information for themselves. More people than ever recognize the long-term health effects of exposure to chemicals and this widespread, critical awareness is certain to increase. Although critics dismiss such fears as “chemophobia”, there is no getting away from the fact that people are worried, genuinely so, about exposure to chemicals.

Toxicologists may find some of the arguments in the book specious, and some of the fears unfounded, but it is hardly the fault of the men and women concerned. Most lack the knowledge which would reassure them and lead to a change in habits. *Workers at Risk* is a provocative book which will be invaluable in spreading that message. □

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