The disadvantages inherent in simple randomisation show the need for methods of restricted and stratified randomisation, which are discussed in the next article.

I am grateful to Professor David F Kerridge for permission to reproduce the table of random numbers from *Tables and Formulae*. I am also grateful to Professor W Duncan and Miss G R Kerr for permission to mention the trial of neutron treatment in patients with head and neck cancer.

Reference

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No reprints will be available from the author.

Letter from . . . Chicago

No bed of roses

GEORGE DUNEA

During the religious strife of the eighth century the Byzantine iconoclast emperors destroyed the icons of the church and persecuted image worship with a zeal that was frequently mollified by nothing less than a plateful of noses. The founder of the dynasty, Leo the Isaurian, had been an obscure itinerant pedlar, who was driving his donkey to the market when a soothsayer promised him the Roman Empire on condition that he should abolish the worship of idols. His son, Constantine V, may well have been a most capable emperor, yet posterity has painted him as a monster; and we read that, while one may excuse the infant for the pollution of his baptismal font (which later earned him the surname Copronymus), one can hardly forgive the adult, whose "lust confounded the eternal distinction of sex and species" and whose "reign was a long butchery of whatever was most noble, or holy, or innocent."[1]

Medical iconoclasts

In modern times the iconoclasts have become less fearsome, but their tribe has proliferated, and their zeal has remained undaunted. And now, since "iconoclasm has become a public fashion" and "the position of the doctor is no longer as unassailable or deific as in the past," we find Mrs Cynthia S Smith, publisher of *Medical/Mrs*, joining the ranks of the medical iconoclasts by writing about the "bitter disillusionment, aching loneliness, and degrading loss of respect" of *Doctors' Wives*, and the cruel, shockingly egotistical and irresponsible insensitivity of their husbands—"For we either strike down our idols or reduce them to the approachable category of mere men."[2]

Mrs Smith excludes from her analysis the dermatologists, anaesthetists, radiologists, pathologists, ophthalmologists, and academic physicians, who "lead orderly programmed, nine-to-five lives" and rarely develop "the arrogant pomposity of the God complex." But the others are in for a rough analysis, for they lead busy lives full of tension and pressure, spending long hours at playing God and making decisions about life and death, which all too soon goes to their heads, especially as their patients are immensely grateful, the relatives all but kiss their ring, the nurses stand to attention, and the administrators avoid ruffling their feathers. And so they receive little sympathy from Mrs Smith, these splendid but inexperienced young gods, let loose into the world after years of scholastic seclusion, secure in their belief that they can do no wrong, so perfect that they cannot help but abandon the young wives who had put them through medical school, or seduce the occasional nurse, or even make a pass at their patients. And all this time they remain supremely arrogant, pompous, self-centered, insensitive to women's needs, emotionally incompetent and sexually illiterate, forever leering and snickering about sex, and convinced that men should reach orgasm in 20 seconds while the woman may be left to her own devices.

Pity then, not the mother who can still talk with pride about "my son, the doctor," but the poor wife, unhappy and lonely in her ermine jacket, for she has all too soon discovered that marriage to a doctor is no bed of roses. She is sexually frustrated, because her husband is too tired, too bored, or too sexually illiterate. She is emotionally deprived, because her God, who "spends his days and nights among unclad and semiclad doting women," would rather spend his evenings with journals or committees than with wives and children. She is being deceived because she cannot compete with the young nurses in the drama of the "totally primitive" highly sexually charged environment of the operating room, with its danger and blood and power, the surgeon "conquering the man or woman on the table," "the covered faces of the nurses leaving eloquent eyes exposed," "the large group of people skilfully choreographed to perform in perfect harmony," so that "the man who isn't turned on by surgery is either a liar or a eunuch." And so the wife is left lonely and miserable, object of her neighbours' "new hostility to medicine," vulnerable to drugs and alcohol, or finding solace in adultery or women's liberation. Most pitiable of all are the psychiatrists' wives, clearly at fault for being hostile, depressed, obsessed, compulsive, conflicted, euphoric, schizophrenic, passive-aggressive, oedipal, defensive, or psychosomatic—leading our iconoclast editor to suggest that few things are worse than to be the psychologically battered wife of a psychiatrist in Scarsdale.

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"Justice had to be done"

Yet being the mistress of a cardiologist in Scarsdale is no less difficult, especially if the cardiologist is the famous Herman Tarnower, aged 69, author of a popular book on how to lose weight. The doctor had proposed marriage some 14 years earlier but later changed his mind and eventually rejected the now 57-year-old principal of a fashionable school for girls in favour of his 37-year-old office assistant. The spurned mistress, in a series of desperate letters, pleaded with the doctor not to leave her; and on 10 March 1980 she drove 500 miles to see him at his home. On the next morning the cardiologist was found dead, with four bullets from a 32-calibre revolver in his body. At the trial, Mrs Harris said that she went in desolation to say good-bye and kill herself ("I wanted to shoot myself and I was doing it in the wrong place") but a scuffle ensued after she became enraged on finding her rival's nightgown and curlers hanging in the bathroom. The defence attorney called it a tragic accident, as Mrs Harris, "masochistic to the end," tried to take her own life, and the gun went off accidentally. He also suggested that she was under the influence of powerful stimulant drugs that the doctor had given her for years, and that she was suffering from withdrawal symptoms. But a jury of eight women and four men, after deliberating for eight days, found her guilty of second-degree murder, and she was later sentenced to a minimum of 15 years in prison. After the verdict Mrs Harris at first declined food, saying that she would rather die than live like an animal in a cage; but, while some people saw Mrs Harris as a new Thomas Hardy heroine, the sport of fate and the victim of men, others viewed the episode as the common soap opera of a woman who had hung on too long for too little; "We all feel remorse and sorrow for Mrs Harris," said one of the jurors, "but justice had to be done."

Justice was also done, some five years earlier, to Mrs Francine Hughes, truly the sport of men, for she had been brutally beaten by her alcoholic husband for almost every day of her 14 years' marriage, so that she was rarely seen without a black eye, a new bruise, or a cut lip. Her story, dramatically told in *The Burning Bed*,[3] is a sad commentary on society's attitude to wife beating and on the helplessness of the battered wife, who cannot escape, cannot defend herself, receives no protection from the police, and gets only scant sympathy from neighbours and relatives. Mrs Hughes had divorced her husband on grounds of extreme cruelty early on during their marriage, but he continued to live in her house, threatening he would take away her children or kill her if she tried to escape. Despite hundreds of visits from the police, this unspeakable violence continued unabated (police officers hate to get involved in domestic fights, often suspecting that the wife is at fault, and usually refuse to take any action); until on the evening of 9 March 1977, after enduring hours of beatings and humiliation, she decides to run away in a car with her children. Then something happens in her mind and she wants to make sure nothing will be left to come back to. Feeling very excited, she takes a can of gasoline as a voice urges her to go on and whispers "do it! do it!" enters the bedroom where her drunken husband is sleeping off his sadistic and sexual exertions, sprays the gasoline on the floor, and sets the house on fire. As the sordid story of her captivity and victimisation unfolded before the jury and the public, it became clear that the world's sympathies were on her side. But the legal basis of her acquittal was "temporary insanity" after two psychiatrists testified that under stress her mind had become so disturbed that for a short time she no longer knew what she was doing, and therefore was not responsible for her actions.

The psychiatrists appearing for the defence also testified that Mrs Hughes was an example of borderline syndrome or personality,[4 5] a condition about which much has been written but which remains poorly defined. Formerly used to designate states intermediate between neurosis and psychosis, between "analysability and non-analysability," it has also been regarded as a mild form of schizophrenia. Though probably aetiologically heterogeneous, it is now more often viewed as being related to manic depressive illness, and it also has a strong genetic basis. Clinical features include a low tolerance to certain forms of stress, impulsive behaviour, brief psychotic episodes, and also narcissism—a defective sense of self and a tendency to respond well to praise but poorly to being "put down" or ignored. Yet there remains considerable nervousness in accepting this concept of temporary insanity, because the great majority of violent crimes, perhaps 80%, are believed to be committed by borderline people. Absolving persons with impulse disorders from responsibility would not merely revive the old concept of crime de passion but call into question our entire criminal justice system, which may not work very well, but at least offers society a reasonable basis to protect itself.

Legal battles

Less sensational, but more protracted, has been the five years' legal battle waged by a group of chiropractors who accused the American Medical Association of engaging in anticompetitive practices against chiropractic, with the object "to isolate it and have it wither and die on the vine." The chiropractors, representing some 18 000 practitioners who may be treating as many as 4·5 million patients a year, objected to the various regulations and ethical codes discouraging doctors from referring to chiropractors, from collaborating with them to treat patients, and from granting them hospital privileges. The AMA admitted its opposition to chiropractic, but said its motives were to protect the public against an unscientific cult that claimed it could cure diabetes and other illnesses by manipulating the spine. In Chicago this year, after a trial of seven weeks, an 11-member jury in the US District Court found the AMA innocent of all charges. The AMA called the verdict a vote of confidence in the medical establishment, but the chiropractors, who had sought $8 000 000 in damages, may appeal against the decision.

Also in Chicago, the courts awarded a record of $3·3m in damages to the daughters of a woman who had died from renal failure after a short-circuit bowel operation for obesity in 1972. The patient had been given large doses of vitamin D for hypocalcaemia, and the prosecution claimed that the doctors had ignored the rising creatinine concentrations and the repeated complaints of pain in the back. When renal failure set in, a review of an earlier cholecystogram had shown nephrocalcinosis, which had not been noted by the radiologist at the time. The award, believed to be the largest malpractice judgment in Illinois history, was given against the internist, the surgeon, and the teaching hospital employing the radiologist. The jury was clearly impressed by the tragic story of this woman who had undergone 30 operations, 45 admissions to hospitals, and 2000 treatments by dialysis, as well as developing cataracts and convulsions. Yet the prevention of such medical mishaps is no simple matter, because in clinical medicine the opportunity for errors of omission is infinite, and not necessarily reduced by defusive medicine practice.

In other legal cases an Illinois Circuit Court ruled that mandatory retirement based on age was discriminatory and in violation of the State's human rights statutes, and that teachers and other public employees could not be forced to retire from their jobs before the age of 70. The Supreme Court decided that university faculty members did not have the right to unionise and were not entitled to bargaining rights because by making policy decisions they were in fact supervisory employees or part of management. It also let stand an earlier ruling that medical residents were students, not employees, and were thus denied collective bargaining rights; refused to reverse a decision of a lower court that psychologists could bill insurance companies directly rather than through hospitals or doctors' offices[6]; and agreed to hear a dispute in Arizona, where the State claimed that the doctors were violating antitrust laws by setting maximum fees that could be charged to insurance companies. The doctors had claimed they were working to keep down medical costs, but

the State argued that the arrangement was inflationary because every doctor could charge the maximum fee.

Meanwhile in Illinois a judge asked the legislature to reduce the penalty for possession of cocaine, which he said was a stimulant with low abuse potential rather than a narcotic, not very dangerous, not physically addictive, and having shorter-lasting effects than caffeine, nicotine, or amphetamine. Drug enforcement officials, however, disagreed and emphasised that cocaine was very dangerous and had become the biggest money-making drug for organised crime; and psychiatrists emphasised its growing use by teenagers, where it was replacing marijuana as the main drug of abuse. "Cocaine is very dangerous and we see it everywhere," said one psychiatrist, pointing out that it was so seductive a drug that teenagers became totally preoccupied with it, and were driven into theft, violent crimes, or prostitution. At the same time a Philadelphia study clearly provided proof that addiction to heroin was a direct cause of criminal behaviour; while in Chicago a civic group study found that 12% of teenagers here were abusing alcohol in combination with drugs, and that this was the most frequent cause of death in 15 to 18 year olds, as well as leading to a high rate of assaults, rapes, and murders. Finally, the report of a possible link between coffee drinking and cancer of the pancreas received much publicity here; and there were also warnings that plastic surgery on the nose did not always bring happiness, especially if the nose was used as a scapegoat for emotional problems or lack of social success. Furthermore, while in some cultures a large nose is taken as a sign of beauty, current emphasis on smallness "has resulted in a rash of nose styles that are too small for the faces they serve." So that, as in the days of Constantine Copronymus, nose operations are not necessarily a bed of roses.

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What is the correct management of a woman who is breast feeding and who develops signs of an infection in one breast?

There are two types of puerperal mastitis—sporadic and epidemic. Sporadic mastitis, usually resulting from nipple fissuring and breast engorgement, begins as cellulitis, but in the epidemic, hospital-acquired disease pus can be expressed from the nipple. Breast-feeding may have to be discontinued in the epidemic type, but otherwise the treatment of both forms is similar.[1] Firstly, the affected breast must be emptied—either by suckling or by manual expression. Several studies[1 2] have shown that in these cases babies suffer no ill-effects from the ingestion of bacteria. In women with "cracked nipples" manual expression may be less painful than suckling, but breast-feeding can be resumed as the painful nipple improves. The second essential part of treatment is the early use of antibiotics. Since infection is often due to penicillin-resistant staphylococci, flucloxacillin is the antibiotic of choice. Prompt use of antibiotics reduces the risk of breast abscess. If an abscess does develop suckling should be stopped and the abscess drained—but breast-feeding may continue from the opposite breast. The only indication for complete suppression of lactation is in the epidemic form of mastitis resulting from highly virulent organisms, when the chain of infection has to be broken.[1] Prevention of the epidemic form includes good nursery hygiene, and prevention of the sporadic form includes teaching mothers good nursing technique.

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What antipyretics and analgesics, and in what dosage, are safe for general use in children suffering from glucose-6-phosphate dehydrogenase deficiency? Is paracetamol safe in these circumstances?

Of the various antipyretic and analgesic drugs likely to be used for children, the only one which must *not* be used if there is glucose-6-phosphate dehydrogenase deficiency is aspirin. Many scores of proprietory preparations contain aspirin, so one must know what one is prescribing. In any case it is sensible therapeutics to avoid proprietary combinations of drugs in general. Other drugs in the antipyretic and analgesic group which should not be given when there is G6PD deficiency include drugs that one would not advise anyway—acetanilide, phenacetin, antipyrine, aminopyrine, and amino-salicylic acid. Paracetamol may safely be given. The dose is 60-120 mg, up to 1 year of age, 120-250 mg from 1 to 5 years, and 250-500 mg from 6 to 12 years—in all cases up to four times a day. In practice there is only very rarely any need to prescribe an antipyretic drug to a child, and repeated doses of paracetamol—that is, more than one or two doses in a day—are rarely required. If a more potent analgesic is required a morphine preparation (morphine sulphate 0·1-0·2 mg/kg, maximum 15 mg) could be given.

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A young man had a unilateral orchidectomy for carcinoma; metastases were discovered by laparotomy, and he was treated with actinomycin D. He was advised to continue taking this drug for two years but stopped after 12 months because of side effects. He now wishes to have children and is concerned that the actinomycin D course may cause congenital deformities in his offspring. What advice should be given?

Several follow-up studies of long-term survivors of childhood cancer have now investigated possible mutagenic effects in the progeny of patients treated with various cytotoxic drugs including actinomycin-D.[1-3] These studies have not found any increase in the incidence of spontaneous abortion, stillbirths, or congenital abnormalities in the offspring of such patients. Therefore in the light of our present knowledge it would be reasonable to reassure this young man that the risk of a major congenital malformation occurring in any of his children would be 1-2%—that is, similar to the incidence found in the general population. There is, however, a possibility that he might be subfertile because of oligospermia. Both cytotoxic agents and gonadal irradiation given to boys between the ages of 10-14, a period when the cells of the seminiferous tubules are proliferating rapidly, are apt to produce permanent damage in the testis with fibrosis and reduced spermatogenesis. Treatment in the postpubertal man also causes aspermia and oligospermia, but such effects are often temporary with recovery of spermatogenesis during the six to 12 months after cessation of cytotoxic treatment.

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Are cucumbers noted for causing disturbances in digestion, and is there any evidence that they may cause gall bladder trouble?

Cucumbers tend to lead to belching, presumably by some carminative action, but they do not seem to cause any other forms of dyspepsia. I am aware of no evidence that they may cause gall bladder trouble.