Dealing with the Disadvantaged

Living with one eye

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The loss of sight in one eye is not a major disaster if the remaining eye is sound. It restricts the field of vision slightly, greatly reduces and alters perception of depth, may have cosmetic implications, and makes conservation of sight in the remaining eye most important. All these disadvantages can be minimised by deliberate adjustments which the

patient learns slowly by experience—sometimes painfully. Compensation is achieved by doing things in unaccustomed ways, and the patient could be helped to learn those ways. Sixty years ago I was not so helped, and judging by the experience Frank Brady describes in his book¹ things were no better 50 years later. There will be a residual inconvenience and inevitable clumsiness in some common actions, but it need be no more than that. Ophthalmic surgeons could help patients more quickly to that conclusion.

Field of vision

The nose cuts off a small segment of the normal visual field on the blind side—some noses more than others. That makes a one-eyed person liable to collision with any thing or person keeping level or converging on that side; he must compensate by turning his head, not just his eye, at short intervals. He must look carefully to his blind side when crossing a road and be doubly careful after arrival in another country where the rule of the road differs. There are special hazards at table if food or drink is offered from that side. Head-turning, constantly repeated, is the only answer, but for some situations, as at a committee table, a deliberate choice of seat is useful.

Perception of depth

Binocular vision is essential for accurate estimation of distance by looking at an object within a few yards. Accommodation helps a little, but it is the convergence of two eyes and retinal disparity, together with the slightly enveloping view through two lenses, which give normal accuracy. The one-eyed person has lost that and must realise this. He can sight down a line and estimate the breadth of a frontal view just as well as before, but he cannot tell the precise distance along the line of sight. Simple examples from various ball games illustrate the point. A cricket ball can be played down the line but not across it; a squash ball coming off the side wall can be hit back close to the line, but not

across the line of flight; at golf when the club can be grounded behind the ball it is placed in space through other senses, but bunker shots require other methods.

Often one reaches toward an object to grasp or touch it—a hand, a doorknob, a cup, or a plate. If one is holding an instrument the feat is more difficult. It is still possible to be accurate for most purposes by reaching quickly along the line of sight almost to the point of contact and then feeling for the object or passively accepting it from someone else. Shadows from a good light are useful indicators, and even a colourless gas flame will show a sodium flame on contact or cause a platinum loop to glow. At greater distances apparent size of a known object is a help. If the object is moving across one's front a successful grasp is almost impossible, but oddly it is possible to shoot at a moving target because line and angle are the determinants. One of the common domestic events—pouring into a cup or glass—is possible only if the cup is placed in space by touching with the other hand or deliberately located by advancing down the line of sight until contact is felt or seen. Failure at this simple act can be a source of repeated embarrassment unless the reason is understood.

Driving presents special, but surmountable, problems. One drives so as to pass over a predetermined point on the road ahead, as if there was an imaginary white line passing through it from below one's seat. The breadth of an opening may be estimated as one approaches. It is useless, if not dangerous, to try to estimate distance on the near side by trying to look that way; the passenger or a wing mirror on the near side help. Caution is needed in a line of traffic, and more than the usual gap is desirable. When parking, shadows and the use of one's own lights on the wall or car ahead help.

When walking, one must watch for any raised paving stone and the kerb ahead for varying depth and an unmarked edge. A constantly questing eye is necessary to avoid a stumble. Stairs down are not difficult provided one uses a hand rail and feels for the depth of the first step with one's foot, but the last step down can be deceiving. Stepping down from a height invites caution, but stepping from a low edge or platform while looking ahead or in conversation has given me falls. My nearest approach to losing the other eye occurred when I almost walked into a protruding scaffold pipe at eye level; one simply is unaware of depth then. Frank Brady resumed as a pilot, and the famous Wiley Post lacked an eye. Both feats seem difficult to me, but flight down a line judging height by runway-side objects must be possible.

Cosmetic requirements

Unless there is scarring, cosmetic requirements are easily met. Modern plastic prostheses are more comfortable, cheaper, and less liable to become rough than the glass of 60 years ago. The likeness and fit can be so good that the defect is unlikely to be observed, but the hard prosthesis is vulnerable to a blow. Many

patients, especially older people, will still have the unseeing eye in situ.

Any activity which puts the remaining eye at risk from a blow should be avoided. Visual acuity is essential, and lenses should be resistant to shattering and large to minimise the field loss. If the wearing of a monocle is practicable the user may be surprised to find it more comfortable, less likely to be broken, and giving a larger field than spectacles, provided it is mounted in a low frame with a gallery and without a cord. Some people use a contact lens and this gives the largest field of all but does not protect against the sudden blinding effect of the smallest foreign body.

In summary, the disability is real but can be largely compensated for by conscious adjustments which the patient should

be helped to make. That help must be specially necessary for the elderly, but may be least needed by the child who has never had two seeing eyes. The outcome for the patient should be one of the least limiting of sensory or motor deprivations, which will often go undetected by the closest contacts. A few may suffer a major change in capacity because they rely on some special skill at, for instance, some ball game or microsurgery. Frank Brady's account of his own experience would restore confidence to anyone.

Reference

- Brady FB. *A singular view*. New Jersey: Medical Economics Company, 1972.

MATERIA NON MEDICA

Secondhand respect

I have a new hobby. I go to unredeemed pledge sales. These take place monthly. Many of the pledges are jewellery or watches, binoculars, cameras, and such like but wait long enough and almost anything will turn up: musical instruments including bagpipes, bowls, electrical equipment of every sort, a pornographic jade figure, and even a laryngoscope.

The sales take place in a disused church. In the middle of the nave there is a wooden partition with a central window where the auctioneer sits on a raised platform. The sale is extremely fast, articles appearing and disappearing at a rate which make the finale to the *Generation Game* seem a dawdle. In front of this partition sit the congregation, largely regulars from the "trade" with a smattering of misfits like myself. Hidden behind the partition are a number of anonymous voices who buy the bulk of the items.

There are bargains galore, but the catalogue includes an impressive warning: "The lots to be paid for and taken away whether genuine or authentic or not, with all faults or errors of description at the purchasers' expense and risk: the auctioneer not being responsible for the correct description, genuineness or authenticity of or any fault or defect in any lot and giving no warranty whatever."

So far, I have bought an electric blanket and iron which do not work and a toaster which does but which nobody wants. However, I am becoming a watch expert and can now price the sale value of watches with surprising accuracy. The problem is finding people who want secondhand watches. I have discovered that one obvious outlet is female medical students, who require a watch with a second hand, so I offer to take any lass in such a state up to the preview to see if there is anything she fancies. The auctioneer and his staff are clearly unaware of the professional relationship between myself and each new female companion. Nowadays when I arrive at the preview, I am treated with a respect which is impressive but regrettably unwarranted.—J F MUNRO (consultant physician, Musselburgh, Midlothian).

Mutualism: the virus, the wasp, and the caterpillar

So now it's mutualism, although we were brought up on symbiosis. Surprisingly, mutualism (1876) turns out to be the older word, by one year, according to the *Oxford English Dictionary*. A new and thought-provoking example comes from Texas and Nova Scotia¹: a parasitoid wasp (ichneumon fly to us) lays its egg into a caterpillar, which responds with cellular immune defence. This would encapsulate the egg were it not for the wasp's secret weapon, a virus which lives in the ovaries, replicates, and buds into the lumen of the oviduct, ready for injection with the egg. Once in the caterpillar the virus inhibits growth (is this really the act of a mutual friend?) and, more important, suppresses the cellular reaction to the egg.

How did this remarkable system arise? Darwin can hardly have had a hand in it for dwarfing the caterpillar is unlikely to increase its power of survival and would diminish the food available to the parasitoid. One supposes that the caterpillar, brooding in the infinite extent of evolutionary time, wearied of nourishing ichneumon eggs and, casting its apprehension forward through the aeon, came upon Lamarck. He, with perhaps a nudge from Lysenko, suggested the scheme of instituting cellular defence against the egg.

But the wasp can hardly have worked out how to entrap just the right virus to succeed in the contest. That must surely have been a lucky chance—more a Markov than a Lamarck event—but did it happen more than once or are all these wasps descended from the one and only progenetrix? If so, it is even more remarkable, for the same virus is indigenous in the ovaries of several species of parasitoid wasps, an evolutionary phenomenon as stunning to contemplate as Darwin's finches of the Galapagos Islands.—P R EVANS and W C MARSHALL (paediatricians, London).

- Edson KM, Vinson SB, Stoltz DB, Summers MD. Virus in a parasitoid's host. *Science* 1981;211:582-3.

The doctor in the mummers' play

In both the mummers' play and the sword dance there is a combat, resulting in a death, and a revival of the dead. In the dance the steps have undergone quite sophisticated development, but the story has been allowed to lapse: the mummers' play managed to linger on in more or less degenerate forms into this century. Both are folk art, belonging to the peasantry. In written records, all corrupted, from every part of England certain incidents and phrases constantly reappear, showing their common origin. The doctor plays an essential part, for he has to revive the corpse. "I am a doctor pure and good and with my sword can staunch his blood," or, in the conjuror's sham Latin, "Hokum, Pokum, France and Spain, Nine times round the world and back again," and, "I can cure the hick and sick the pox the gout all deses and compleases if any man as got a scolyn wife my balsom will cure her take but one drop of this upon my life she will never scoul no more." His remedies go back to the alchemist: golden foster drops—that is, philosopher's drops; and to the herbals: elecampane, Inula Helenium, a native bitter herb, becomes eelgump-pane, helly com pain, elegant paint, and even "a little bottle which I carry at my side which I call champagne." His charges must have seemed extravagant to families living on a pound a week: "Fifty ginnes," or, "Ten pounds is my fee, But I must take fifteen of thee." Drawing of teeth makes good farce, and is usually performed by his man Jack Viney, surely a relic of times when priest physicians were debarred from shedding blood, and surgical procedures were carried out by barbers. Jack is cheekier than Dr Caius's servant, whose name, Jack Rugby, is not very dissimilar; "Hold my hoss, Mr John Finney," "Hold him yourself." At his best, a rustic Figaro.

In comes I as can't be hit,
With my big head and little wit,
My head so big, my wit so small
I will dance a jig to please you all.

This constantly recurring theme is sometimes spoken by Tom Fool, or Old Humpbacked Jack, or Cleverlegs—what a name for a dancer—but often by Jack Viney. Praise is rare, but from Alexander the Great, "Once I was dead, and now I am alive, Blessed be the Doctor who brought me to revive."—J H MILNES WALKER (Bicester, Oxfordshire).

Much of this information comes from Tiddy RJE. *The Mummers' Play*. London: OUP, 1923. (Reprinted by Redwood Press, Trowbridge and London, 1972.)