

Zander Wedderburn, Society President 2003-2004, with his Presidential Address: 'shiftworkers - a minority who can be helped'.

Shiftworkers – people working outside the normal 7am to 7pm day – are a minority, amounting to around 15 per cent of the UK working population (according to a Labour Force Survey report cited in the 2006 HSE booklet, *Managing Shiftwork*). Visible shiftworkers at any time point are of course much less than that, because most shiftworkers rotate, and are sometimes working daytime hours, or on days off. They are a neglected minority, suffering a bit from what the Dutch have called “social apartheid”, because they are frequently cut off from the mass community leisure times at weekends, evenings, and even holidays.

My tale

I fell into research on shiftwork by serendipity, and although my first published article was on how experimental participants handle simultaneous but different inputs to two ears (Gray & Wedderburn, 1960), most of my research and publications have been in this area. Now that my working career is over, it seems useful to tell this tale, and perhaps inspire a few more psychologists to take the problems of shiftworkers seriously.

In my opinion, much of the conventional wisdom about shiftwork is flawed, and you can even find misleading textbooks about it. It is an area where it is all too easy to get carried away by pretty theory about rhythms, and ignore the social reality on the ground. But perhaps that is the grumpy old churl in me coming out, and of course I could always be wrong.

Before sleep

My interest in sleep began at an early age. After teenage weekends, I often worked for half of Sunday night to finish school homework. On my National Service in the Navy, I suffered the terrifying boredom of guard duty – alert and waiting for an enemy that seldom attacked a basic training barracks in Portsmouth. (Correction – the Royal Marines used to do it now and again as a training exercise.) As a student, I was lucky to be a subject for some of the early sleep experiments of Ian Oswald. To qualify, you had to suffer sleep deprivation the previous night, which still suited my work habits. And we were paid, £1 a sleep I think. I even appeared on an Horizon programme with him, demonstrating how I could sleep with my eyes taped open, mild electric shocks on my legs, and loud rhythmic jazz music (Oswald, 1960). Strangely, the heat of the studio lights nearly kept me awake, but just when they were going to fake it, I dropped off. I also read Kleitman (1963), whose classic text on *Sleep and Wakefulness* set the basis for a pile of research, although his experiments of isolation in underground caves were not really at all like shiftwork.

Work

After graduating, I started work in the steel industry, and helped to make steel tubes in Corby for four years. We worked a weekly rotating system, with gaps at weekends unless demand required overtime shifts on Saturday mornings and Sunday nights. I slept well in the daytime, which is one of the secrets of successful shiftwork, and my job was physically active, brightly lit, and very noisy. The only time I ever slept at work was when having heat treatment in the medical centre for a damaged knee. There was little awareness of adapting to night work as the nights of the week progressed, and always a terrible trough about 3 am – the time when most natural births and deaths occur (and some would say a good time for seductions, not that I know of any sound research on that - yet.)

Trade Union Research

My next job was research at Cardiff on the problems created for trade unions by a vast new steelworks. Industrial relations is a really sensitive area to study, and the best thing we did was a home survey of 5% (N=247) members of the workforce. One of the big issues was the shift system, with most of the works on a rapidly rotating system, 2 mornings, 2 afternoons, 2 nights, 3 days off, known as the “Continental” (although it first emerged in Port Talbot and Middlesbrough in 1957). One union had a principled objection to seven continuous working days, and used the 2-2-2. Out of the survey, in which this was a sample issue, came the clear finding that these rapidly rotating shift systems were very popular, mainly because of the immense social flexibility

they give (Wedderburn, 1967). Very few hankered for the weekly rotations they had known before. An article by James Walker just before this reported similar popularity for the 2-2-2.

Steel research

I was fortunate to win a two year fellowship, with relief from most teaching, from the British Steel Corporation to study shiftwork, and with Peter Smith as a research assistant. We did a series of studies: body temperature, EEG sleep, and three surveys of different shift systems. The body temperature field studies, with experienced shiftworkers, showed no circadian shift over five nights. The EEG study found that in day sleeps, our two shiftworkers slept back to front: REM sleep much earlier in the sleep, and getting shorter as the sleep progressed. Somebody else had just published this, so we didn't. But the overall balance of sleep stages was pretty well the same, with no stage deprivation. We also noticed that one of them, who slept above the noisy fruit market, was not woken by a noisy delivery van on one day when the sleep was recorded in a non-soundproof ward. People can get accustomed to sleeping through noise. The surveys showed a continuing preference for rapidly changing shifts. A slightly eccentric diary study of shiftworkers on a lock gate on the Forth, who moved round with the tides, found that they did not change to a theoretically desirable 25 hour day, but gave priority to social and domestic wants.

European Foundation

Soon after it was started, Pascal Paoli of the European Foundation for Living and Working Conditions in Dublin put together a network of European researchers and consultants on shiftwork, and we produced 14 issues of BEST, which stood for the Bulletin of European Shiftwork Topics, later the Bulletin of European Studies of Time, focussing on particular issues like Compressed Working time, and including a Guide for Shiftworkers which was for a time their most popular download. There is plenty of demand for good practical information for shiftworkers, who tend to feel neglected and ignored by a society that depends on the continuity of services that they provide. This was a wonderful group to work with, as they all had a strong grasp of research and theory, and plenty of practical experience too.

European research support

But plenty of shiftworkers have problems, and Emma Taylor, in her PhD under Simon Folkard at Sheffield, showed that a systematic cognitive-behavioural brief counselling approach to these could help. Europe gave me a small grant to extend that work, and after one false start – a company that was expanding too quickly to fit us in – we carried out a major study with BP Chemicals. Shiftworkers with problems were offered 3x one-hour interviews in the medical centre spaced over 6 weeks or so, and our team of four worked with them to find solutions, and then to follow up any difficulties they had. The results demonstrated that some problems could be tackled successfully, and BP asked us to write a guide to our work for all the shiftworkers we did not manage to see.

Health and safety support

How did the printed guide work? The Health and Safety Executive gave me a small grant that allowed David Rankin to explore this, using a large sample of the local police service, who were about to undergo an efficient change of shift system, that involved more weekend working (so not very popular). The biggest problem he had was in retaining people to complete three successive waves of questionnaires, in a group that already gets more paperwork than it wants, and the net result was that there was no apparent beneficial effect in the ones who kept going. Interestingly there are plenty of recorded examples of the failure of paper-based attempts at habit changing in the literature.

Where are we now?

It is now well established that shiftworkers have an increased risk of gastro-intestinal problems, cardiac illness, and possibly reproductive problems. If the argument is true that night work is a bit like swimming, something we can learn, but not completely natural, and almost impossible for some people, then it is not surprising that some people totally avoid night work. Only a minority take to night work like fish to swimming, and the ability to sleep soundly in the daytime, and alter social and domestic routines seem to be important components of this. Most shiftworkers have

problems, and many of these can be alleviated by good advice with counselling support. Can you imagine, for example, working a 12-hour shift watching a vast array of dials that are running a chemical operation impeccably, with a coffee machine in one corner of the room? It is not surprising that many end their night shift with caffeine levels that spoil their attempts to sleep, and substitution of decaffeinated coffee or tea in the last half of the shift can be a real help. Reading about this will help a few, in the same way that reading about healthy eating or stopping smoking can persuade some people to change, but most people may need strong, intelligent, focused support.

Retirement

Now that I have retired from most professional activity, this is the one area where I try to keep abreast. The Working Time Society organises an international symposium every two years, and this keeps my expertise fresh, as well as renewing contact with an international group of researchers and practitioners. But my hope in making shiftwork the subject of my many talks as president was that all psychologists would be more aware of the problems, and keen to intervene in their solution. Shiftworkers are a minority, but a sizeable and important one.

References

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