

The Dangers of Living Anecdotally

by John Bachmann

In the midst of a recent televised debate on the current state of Ontario's schools, the director of education of a Toronto-area school board dismissed criticisms of the system on the basis that her two children had thrived in this very same system. The fact that numerous studies have shown that academic achievement in these schools has declined precipitously in the past few decades did not, in her mind, seem to count for much given her personal experience to the contrary.

Those working for changes in our schools sometimes fall into this same trap of focusing on anecdotal "evidence". By putting too much emphasis on individual horror stories, they are inviting the systems' defenders to brush them off easily by countering with individual tales of extraordinary achievements (all attributable to the excellence of our school system of course!).

This tendency to ignore statistical evidence and to live anecdotally is well-ingrained in our society. Regardless of how well an organization is doing, a large number of its employees will be convinced that customer service is worse today than it has ever been. They will form this opinion because last week Fred in Shipping got three complaints, and Wally the Sales Manager got an earful from a key customer. The fact that these few incidents constitute a tiny fraction of the 3000 orders shipped last week and that this fraction, through an active continuous improvement process, has been dropping steadily for the past two years cannot easily overcome the perceptions built up through anecdotal experience. With an anecdotal mind-set, even rigorously-conducted customer surveys that confirm the good standing of the company relative to competitors can be relegated to "yesterday's news" with a single phone call from an irate customer.

Why is this? Why do we prefer to lend more weight to personal experiences? Primarily this is the result of widespread innumeracy, seasoned with a healthy dose of mis-directed skepticism. The sad fact is that many Canadians don't understand numbers. And even some of those who do don't trust them, preferring to fall back on Mark Twain's refrain about "lies, damn lies, and statistics".

This is hardly surprising given that a depressing number of high school students, especially females, still take the bare minimum of mathematics courses. This mathphobia extends into post-secondary education and forms a complete cycle when teachers who avoided as much math as possible at university, pass on their fears, consciously and unconsciously, to elementary school students.

This fear of statistics and the consequent emphasis on anecdotes would be a quaint idiosyncrasy if it were not for the fact that there are some onerous costs associated with living this way. Take the work example previously cited. If actions are taken by senior management of this company on the basis of anecdotal feedback, scarce resources can be misdirected and jeopardize the company's very future and its employees' jobs.

Yes, statistics can be manipulated to specific ends, but that doesn't render them useless. Instead, we all have to become more sophisticated about numbers. Whether we are making TV's or educating children, we have to have some objective measures to determine how we are doing. Sony doesn't ask workers on a TV assembly line for their opinions of the quality of the sets being produced. Instead it monitors and controls the production process using appropriate objective measures. What is more important, the company is constantly polling its customers in statistically-valid ways to determine satisfaction levels.

Those hostile to more formalized testing in our schools often sneer that a child is not a TV! To which we reformers should respond: "True, but don't we owe our children at least as much quality control as a TV set by checking to see what they are achieving?" Certainly we owe them much more than that, but can't we still insist on attaining a bare minimum?

In our schools, anecdotal thinking allows educators to ignore strong statistical evidence of poor performance and to continue the use of empirically-questionable methods. This anecdotal approach is also the main reason it is so difficult to recruit PTA parents to the reform cause. These parents can't see past the busyness and friendliness of a typical school to question the results being achieved.

So if you hear an apologist for the current state of our schools speaking anecdotally challenge him but, for heaven's sake, don't do it with your own anecdotes to the contrary! If we stick to statistics, we should eventually be able to raise the level of educational debate to the point that a director of education, like the one mentioned at the beginning of this article, will be dismissed for incompetence if he insists on operating anecdotally.

For those of you who may think me touchingly naïve for thinking that such a transformation might occur in this lifetime, I urge you to consider what happened with seat-belt legislation. Remember when the legislation was first proposed? Many people refused to buckle up because they feared being trapped in a burning car. The fact that you are almost a hundred times more likely to die being thrown from your car as you are burning to death was ignored because everybody seemed to know of at least one case where the latter had happened! In time, however, the sta-

tistical evidence in favour of seat-belt use became so incontrovertible that today only a few fringe players maintain that you are safer with your belts off.