

THE “QUALITY ASSESSMENT” PROCESS: DAMAGING AND DESTRUCTIVE TO UNIVERSITIES?

Six professors from the Department of Economics at Warwick University (UK) believe so. Although their department received the maximum score from the so-called Quality Assurance Agency for Higher Education, which operates a review of teaching quality in England’s universities, these professors point out a number of sobering illusions about the QAA process. Their article, “Trial by Ordeal,” which appeared in the *Guardian*, is reprinted in this issue beginning on Page 3. It is followed by another *Guardian* article, “QAA: The True Score.”

Interestingly enough, the London School of

Economics recently announced that it would secede from the QAA process (*CAUT Bulletin*, April 2001, p. A8). It is estimated that the direct cost of the QAA audit procedure is £250 million per year. (This does not include the indirect costs borne by the universities in preparing for and participating in the audits.) CAUT president Tom Booth has criticized performance indicators adopted in Canada as “attempts at accountability that trivialize the purposes of the university and fail to serve the public interest.”

GENDER OR SEX? MAN OR MYN?

Judy Wubnig, Philosophy, argues that the English language is not gender biased and concludes that it has had no influence on the status of women in English-speaking areas.

GRADE CHANGING, ADVANCED COURSES, ACADEMIC FREEDOM

The discussion continues as more faculty members share their views on this issue.

BOOK REVIEWS

Paul Malone reviews *The World Trade Organization: A Citizen’s Guide*. Jeffrey Shallit reviews *The Rise and Fall of Modern Medicine*.

REMINISCENCES OF AN FAUW PRESIDENT

Gordon Andrews, Professor Emeritus, Mechanical Engineering, reflects on the evolution of the FAUW and its role in governance at UW, including salary negotiations, development of University policies and academic freedom and tenure problems.

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EDITORIAL

The “Galactic Intelligence Report” on “Truth,” Learning Technology, Canada Research Chairs and more recently academic freedom, the latter motivated by perhaps one of the most significant events to occur in UW’s history – the grievances filed in parallel against the University by Prof. Stan Lipshitz and the FAUW, and the subsequent arbitration of these cases. These have been some of the special themes covered by the *Forum* over the past Fall and Winter academic terms.

Thanks to the efforts of those whose articles have graced its issues, the *Forum* seems to be working as an instrument of open academic discussion and reasoned debate. I wish to take this opportunity to personally thank all of these contributors who have, I believe, added to the intellectual life of UW’s campus with their time and efforts. However, let us not succumb to a “*Maclean’s* effect” and rest content with our past achievements. In addition to the topics covered to date, many more issues require discussion and debate on a campus-wide basis.

In this issue we welcome the first report of the new FAUW President, Catherine Schryer. We also thank Gordon Andrews, a former FAUW President, for kindly agreeing to share some reminiscences with our readers as well as his view of the evolution of the FAUW. Readers are encouraged to accept Gord’s invitation to comment on his opinions regarding university governance and the role of the FAUW.

The first-hand and provocative account, “Trial by Ordeal,” is very timely, given that governments have been readily embracing the idea of “performance indicators” in higher education. Universities must, of course, be accountable to the public but what kind of performance do, for example, high retention rates indicate?

The Letters to the Editor in this issue indicate that the grade changing/academic freedom matter has touched a number of raw academic nerves on campus. It would be interesting to see readers’ opinions on Ken Westhues’ view (see Page 5) that the grade changing dispute could perhaps have been better resolved within the university. This leads to a more general question of the role and/or effectiveness of UW’s Senate in resolving contentious academic matters. In my experience, there has been limited response by Senate when various individuals have attempted to introduce such issues for discussion, which gives cause for pessimism. Indeed, if Nietzsche were alive today, I wonder if he would also include Senate in his celebrated pronouncement. Is this assessment unduly harsh? Does Senate serve as a crucible for informed,

critical discussion of important issues? (See *Quo Vadis, Senatus?* by G. Tenti, *Forum*, October 1998.)

The *Forum* will probably be operating in reduced-output mode over the Spring term. (Vive la recherche!) However, “information gathering” will continue, especially in light of new discoveries by *Forum* journalists during their surveillance of subspace communication channels using state-of-the-art quantum and fractal cryptographic software. Sensors indicate that the (tenured) Pleiadean undercover agents, Netti and Avkon (see September and October 2000 issues of the *Forum*), continue to send intelligence reports back to their home base. Their joint reports, duly signed by both agents, now have an additional Pleiadean signature, most probably that of a third undercover agent acting as an extraterrestrial line manager. (It seems that the Pleiadeans have discovered accountability as well.) The identity of their superior is as of yet unknown but heirs¹ name has been decoded as “Setarcos”. *ERV*

¹ heirs: *poss. pron. attrib. of hit*, the third entity in Pleiadean, used when the sex is unknown.

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Effective September 1, 2001 Fred McCourt will replace John Wilson, who is retiring, as Past President.

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Six professors have just received full marks for their teaching of economics at Warwick. So why do they believe that the whole assessment process is “damaging and destructive”?

TRIAL BY ORDEAL

*M. Harrison, B. Lockwood, M. Miller, A. Oswald, M. Stewart and I. Walker
Department of Economics
Warwick University*

Imagine you’ve built a successful organisation based, like Warwick University’s economics department, on an outstanding reputation. You are known throughout the world; you turn potential customers away by the thousand. Your reputation is supported by every external indicator of your past performance; it’s never been questioned.

Then, out of the blue, someone slanders you. You have to go to court to defend yourself. The jury must absorb a hundred witnesses and 20,000 pages of documents – all inside three days – and the judge will let private opinions and hearsay count in evidence too.

The quality of your rhetoric is likely to weigh more heavily than documents and expert witnesses. The best you can hope for is that the judge will find in your favour, with no damages and no order for costs. Every penny you’ve spent, all the months of preparation, are gone for ever. The trial process is so flawed that you could lose your case and your reputation, and be left with nothing. There is no provision for appeal.

This is the system of teaching quality review that has been imposed throughout England’s universities and is operated by the QAA – the so-called Quality Assurance Agency for Higher Education. Economics at Warwick has just been reviewed, and we obtained the maximum score: 24 out of 24. This point is worth making in capital letters so that you know: we would not recognise a sour grape if we stood on one. Our economists have played this system and won.

Do we delight in a deserved victory? Are we pleased that other university departments in this nation will be subjected to the same rigour? No, our frank conclusion is that it is probably the most damaging and destructive system of regulation that could possibly have been devised. Before we say why, let’s make it clear that we have only praise for the underpaid, overworked academics who conscientiously reviewed us on the lines laid down by the QAA. The procedures are at fault, not the people who operate them.

Let’s start with this department’s score. Our full marks should place us among the country’s elite. The world will think that, anyway. As for ourselves, we do believe we’re very, very good (though not perfect). But our belief is not based on our QAA “teaching quality” score, which does not remotely measure teaching quality in this or any other de-

partment.

There are many possible illusions about the QAA process. Get your notepads out.

Illusion 1 Warwick’s perfect QAA score tells parents that our teaching quality is the best.

Wrong. QAA only measures the claims that each institution makes about its teaching quality. We made high claims for our teaching quality, and the QAA panel agreed; so we got full marks. A department that made lesser claims, and proved them, would get full marks too. So you can’t compare a 24 for economics at Warwick with the score from anywhere else. These QAA numbers are virtually useless. Yet nobody explains this to parents, teachers, or newspapers.

Illusion 2 The QAA has measured teaching quality objectively at Warwick.

Wrong. The method is not scientific. We supplied the hypothesis, the evidence and the witnesses. We chose the students, the former students and employers, the samples of student work, and the internal documentation to be seen by the panel. (Without a word being said, our students grasped perfectly the incentives at work: the more they supported us, the more their degrees would be worth.)

Finally, we managed the stage. We chose the meeting rooms, the seating plans, and which of us would perform as advocates. We trained ourselves in theatre and rhetoric; we learnt to argue fluently with passion and conviction. We were barristers in our own defence.

In other words we, who had the clearest possible interest in the outcome, also had a decisive influence on the hypothesis, the evidence, and the trial process. We did it well, but it wasn’t objective.

Illusion 3 QAA scores can measure the change in teaching quality at Warwick.

Wrong. The QAA’s methodology is so unstable that it never uses the same criteria twice. In the previous cycle the scoring system was different, and it will be different next time round as well. Each time, the criteria change. Because it’s never done the same way, anyone wanting to make useful compar-

sons over time cannot begin to know how teaching quality is altering.

Illusion 4 The QAA aims to enhance teaching quality in universities.

Wrong. The QAA aims to enhance confidence in teaching quality, not teaching quality. Read the rubric. Its mission is “to promote public confidence that quality of provision and standards of awards in higher education are being safeguarded and enhanced.” It’s there to “assure”, not “ensure”. The whole thing is a hugely expensive public relations exercise.

Illusion 5 QAA reviews are cost-effective.

Almost certainly wrong. Within the QAA methodology there is no attempt to compare costs with benefits, and no limit to the costs which universities are expected to incur in order to comply with bureaucratic criteria. Yes, we have found some benefits (whoopie). But that is like finding that when you fall out of an aeroplane you get a good view on the way down.

These benefits are vastly outweighed by the process’s immense costs. Our estimate is that in preparing for the review over the past year our one department has spent £150,000 to £200,000 in staff time alone (ten times this sum at business consultancy rates). Multiply by the departments reviewed annually and add the overheads, and the hidden costs of QAA regulation are of the order of a hundred million pounds a year.

A still greater cost is not reckoned here at all. Teaching

quality rests at its heart on the teachers’ inner motivation. We’re not well paid by the standards of the business world; the reason we do university economics is because we want to. Nothing could be more destructive to this motivation than the distrust and adversarial spirit that pervades QAA methodology.

Increasingly, we are forced to do things because the QAA says so and threatens us if we don’t, not because true teaching quality demands it. Enthusiasm and scholarship are being strangled by bureaucratic monitoring and demands for paper trails.

Universities don’t ask for irresponsible control over the public money that pays us. We’re willing to be called to account. There is a case for regulation. But not like this.

True teaching quality is being wrecked by a self-interested lobby of regulators. John Randall, head of the QAA, was quoted last week as saying that the intensity of regulation should rise with the level of fees. The bigger the cake, the more they want to get their hands on our crumbs.

We have to stop the QAA monster or it will eat us alive.

Mark Harrison, Ben Lockwood, Marcus Miller, Andrew Oswald, Mark Stewart, Ian Walker are all professors of economics at Warwick University, and helped to prepare and present their department’s case during an inspection by the nation’s Quality Assurance Agency.

QAA: THE TRUE SCORE

*Donald Macleod
The Guardian*

About 10,000 people – most of them academics – have been involved in inspecting universities and higher education colleges in the UK over the past seven years. More than 2,000 individual institutions have been reviewed for Teaching Quality Assessments. Currently they are scored on six aspects – curriculum design, teaching, student achievement, student support, resources, and quality management – out of a possible 24 points.

This year new “lighter touch” academic reviews are being introduced, initially in Scotland, in which the points system will be dropped. The period between reviews is being shortened from eight to six years.

The inspection regime (though the word “inspection” is never used) was the hotly contested outcome of the Conservative government’s insistence that the higher education sector must be more accountable for the billions of public

money being spent on it. Universities, and their supporters in the House of Lords, protested about threats to academic freedom and secured safeguards to prevent the education secretary or his funding councils closing down courses they disapproved of – peace studies was the example at the time.

Traditionally universities have drawn up their own degree courses and guaranteed standards themselves with the help of a fairly informal system of external examiners from other universities. The polytechnics were overseen by a central body until they gained the right to award their own degrees.

The agency audits institutions’ own procedures and scrutinises the education offered in each subject, judged against their own objectives.

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LETTERS TO THE EDITOR

Is it true that a computer genius and a remarkable lawyer are:

- (i) redesigning our emblem (the thing with the three lions – as if one weren't enough!) to feature, in bold letters, the new University motto, “Guaranteed Grades,” so that our souring reputation will soar and roar?
- (ii) designing new transcripts so that for each subject there will be four columns of grades, the first to be filled in by respective instructors, the second by the Chair of the department to fulfil his/her promises to his/her students, the third by the Dean of the Faculty (just in case his/her faculty is losing all the students to other faculties) and the last column by the President of the University so s/he can convince the Provincial Government that s/he is doing everything in his/her power to graduate more students?

I love working in this very competitive university. Thanks to the above changes, there will be an increasing demand to attend this university by students willing to pay higher tuition fees. As a result, we should be getting better and better salary raises in the future.

Everyone wins! Hurray! Hurray!

K. Ponnambalam
Systems Design Engineering

After reading the various articles, columns and letters regarding the grade changing fiasco in the Faculty of Mathematics I am left with two conclusions.

Firstly, the Arbitrator's decision was a bad decision based on a bad interpretation of precedent. Get over it; we have to live with it now. Enough said on that.

Secondly, the faculty has only itself to blame. In the future we, the faculty members at UW, had better do a better job of selecting our Deans. A more thorough investigation into their academic values and philosophy might lead us to select, or reject, people who otherwise might appear very suitable for the position. Being a Faculty Dean should be about Academic leadership and not the unilateral manipulation of course averages. I think most of us would agree that the latter is not leadership.

To turn a phrase, all that evil administrators need to succeed is for good faculty members to do nothing.

Glenn Heppler
Systems Design Engineering

Stanley Lipshitz would be a good choice for next year's Distinguished Teacher Award. Whatever else Arbitrator Ross Kennedy did in his recent decision, he documented how seriously Lipshitz takes his teaching responsibilities, including that of assigning marks, including also resistance to a dean's changing of the marks assigned. I have never met Lipshitz, but from what I now know of his diligence and tenacity, I am proud to be his colleague in this university.

I share Fred McCourt's, Ian Macdonald's, and John Wilson's regret (*Forum*, March 2001) that Kennedy allowed Dean Alan George's changing of the marks to stand. I do not share their surprise.

This was the fifth grievance case at UW submitted to external arbitrators in the last ten years. The first four had to do with dismissal of tenured professors from their jobs. I reported on two of these in the *Forum* (April 1993, October 1995).

Three of the four earlier cases were clear wins for the administration. In the one case the administration lost, it nonetheless managed to circumvent the arbitrator's order to reinstate the dismissed professor.

Given that the administration essentially got its way in the four earlier arbitrations, a realistic observer might have predicted that the administration would get its way in the fifth.

Nor should anyone be surprised that the grounds for Kennedy's ruling had to do with institutional academic freedom. On pages 134-35 of my 1998 book, *Eliminating Professors*, I explained that academic freedom has two conflicting legal meanings, individual and institutional, and that courts customarily give the institutional meaning priority, to the chagrin of professors who have only the individual meaning in mind. The main reference I cited is M. P. McDonald's article, “A Lawyer's Brief against Litigating Academic Disputes,” in *Academic Questions*, 1992.

Christopher Riggs, who pled the university's side in the recent arbitration, is not just “a Toronto lawyer”, as McCourt described him. Riggs is among the most respected and capable lawyers in Canada, for the

management side of labour-management disputes. What would have been surprising is if Riggs had failed to present the most up-to-date and precedent-laden arguments on his client's behalf.

In an editorial last month, Ed Vrscay correctly guessed my view on the marks-change issue. I favour academic over judicial procedures. I believe the university would have been better served if instead of filing a grievance, Lipshitz had challenged George to a debate on the issue before Math Faculty Council or Senate. It is too late for that now, but not too late for both Lipshitz and George to share with *Forum* readers their views on what has been learned from the proceeding they have just gone through.

Vrscay is also right that this proceeding's outcome raises the spectre of the corporate university, "UW Inc.," wherein we professors are mere employees of management. Yet it was not "UW Inc." that changed Lipshitz's marks. It was a man, a Saskatchewan farm boy who grew up to be a math professor like Lipshitz himself, and who was temporarily tending the office of dean.

There is a lot of truth in what former UW President James Downey wrote in *CAUT Bulletin* in 1996: "... without addressing the more fundamental problem of people's willingness to work together, arbitration simply offers a much more expensive dumping ground for disputes." On the other hand, at least in the case at hand, arbitration has brought an important matter into the open, for public discussion and debate, where our best hope for constructive resolution lies.

Kenneth Westhues
Sociology

Recent issues of the *Forum* are, as usual, both entertaining and informative, but also a bit puzzling on the "grade change" issue. What was a great victory over the administration in the February issue seemed to become (except for the "winning touchdown" remark) almost the opposite in the March issue, with the carefully considered articles by Profs. McCourt and Macdonald.

The only real victory (perhaps not the best choice of language) that I can see is the obviously welcome recommendation by the arbitrator that administrators engage in a good deal more consultation and negotiation on matters such as this. One hopes, for example, that the present committee searching for a new VP Academic and Provost will be able to find a candidate who has learned to communicate with people on issues, rather than having them become unnecessarily disruptive.

However, this letter isn't about that case in all its aspects.

I am not sufficiently informed to discuss some of the alleged facts involved. Mainly, I would like to point out apparent misconceptions (on the part of writers from other Faculties) concerning the "advanced" or "enriched" sections in the Faculty of Mathematics. If an effort had been planned to undermine these valuable options for our best students, then it probably couldn't have worked better than by producing the kind of misinformed opinion contained in the March issue.

Fred McCourt writes that "... advisors ... tell incoming students who are considering registering in the ... enriched course sequences that their ... grades will not suffer by virtue of their participation in these courses." This is a misleadingly (not deliberately, I'm sure) simplistic version of anything which I have ever said to such students (or which anyone else has said, to my knowledge). The students are told that if they exhibit the talent and industriousness needed for succeeding in these sections, then, to the extent that it is meaningful (certainly not scientifically meaningful), they should get a grade nearly the same as would have been obtained in the regular section. But if they do not have the talent nor do the work, then they might have some serious trouble with even passing the advanced course (which probably wouldn't be so true with the regular course). Also, it ought to be pretty clear to the students in a few weeks, after some assignments, which case applies to them. But for privacy requirements, I could certainly give a few examples where students in the second category persisted in the enriched sections, with dire consequences. But they are treated as adults and that can occasionally result in a casualty. Students in the first category may sometimes end up with better marks, by having avoided the boredom (for them) of the regular sections. Correlation between the regular and enriched versions is such that those who switch can do so fairly painlessly.

I have never been a big fan of the Dean of Math's "average mark guidelines," or whatever they may be called. They seem rather patronizing, to say the least. But if specific numbers must be given, then the 15% difference in the lower bound (65% for regular sections, 80% for enriched) is certainly not too large. Anyone who has taught mathematics to many regular and enriched sections will surely agree that the difference is probably even greater than 15%, to the extent that a single number can capture that difference.

There are a couple of other things of which people outside the Math Faculty may be unaware. Firstly, in years 1 and 2A, the Honours Math courses are common for students from all departments, the existence of the enriched sections being the only exception. And the basic material is the same in both enriched and regular sections. I doubt if this degree of uniformity occurs much in other faculties. (After all, the existence of a Faculty of

Mathematics is a bit of an anomaly, probably owing more to the comparative levels of aggressiveness in early administrators than to any academic imperative. Were we within a hair's breadth of having a Faculty of Psychology?) If the enriched sections disappeared, it would be necessary in good conscience for me (and others have said the same) to recommend to any high school student who appears to have "top 100 Putnam talent" (for want of a better description) to go elsewhere, perhaps Harvard or U of T, for an undergraduate education in Mathematics.

The second relevant fact did come out in the arbitrator's report, but it bears repeating. In awarding scholarships, both internally and later for graduate studies, little or no account is taken of the differences between the regular and enriched sections. In the distant past, I have campaigned unsuccessfully to have this changed with respect to Math Faculty scholarships. You'll have to ask my successful opponents to find out their reasons for opposing it. (The illogical, at least for me, is hard to retain in memory.)

Both the points given above directly concern students. Those students are not just a mildly interested third party in all of this, though much of the discussion so far almost leaves that impression. We might want to think very carefully before instituting some kind of system for grade approval which needs to go through several appeal courts before the marks become official. Advocates of that might not be too happy with a parallel, awkward process for vetting administrators' decisions concerning who gets to teach which courses and which sections, enriched or otherwise. We would need to hire many more profs to sit on all of these committees. But learning, research and, my goodness, salaries might not necessarily be advanced in the process.

I would now like to interject a few comments on the general issue of academic standards and grades, though this topic should and does fill books. A concern with academic matters on the part of the Faculty Association is welcome. However, rather than "grade inflation," let's use slogans closer to what really matters, such as "content deflation." Simply by beginning to attract weaker students than previously, a Department can look "good" to "anti-grade-inflatons." The opposite can also happen.

Though it may cut rather close to the bone, here is a very relevant example. There are really three mathematics departments in the Faculty of Mathematics, namely Applied Mathematics, Combinatorics and Optimization and Pure Mathematics. More than almost any other discipline, mathematics is a "cumulative" subject, building upon previous learning. This is reflected in the extensive prerequisite lists that you see in the university

calendar. So one of many possible measures of the real depth of content in a mathematics programme would be the extent to which students are required to complete courses with a nontrivial chain of prerequisites. And a partial measure of that is to look at requirements for 300 level, and especially 400 level, courses for the Honours degree. An inspection of the undergraduate calendar of 20-30 years ago reveals that the first of those departments listed above was considerably less demanding than the other two in this particular aspect at that time. My experience in minor administration at the time made it pretty obvious to me that this was a student recruitment tactic. Perhaps it was difficult for those who dislike this (and who sat at Arthur's round table) to speak up. The discrepancy noted above has largely disappeared over the subsequent two decades. A little of this is due to the weakening of others' requirements, but I suspect that several leaders of the charge of the anti-grade-inflation brigade (who are now in the Applied Math Department, but weren't here then) deserve some of the credit for this improvement in their department's degree requirements. Besides being an example of just one specific, more subtle, measurement related to academic standards than "grade inflation," this points to a couple of things: That it isn't all downhill, and that consistency over time of both departments and individual academics isn't always a reality.

And indeed, if someone were to measure the actual average grades in that department compared to 20-25 years ago, there are clearly many factors which would make an interpretation of the numbers not entirely straightforward. For example, with these tougher requirements, is the Department attracting fewer but stronger students than before? Are the newer faculty members delivering courses with more challenging content? ... I'm not arguing that looking at grades as a function is a waste of time. For example, the percentage of Ontario Scholars from 1960 as compared to 2000 undoubtedly says something fairly clear on its own. But as far as I can recall, we haven't had any data at all about our own bailiwick from the anti-grade-inflation brigade, much less an attempt at interpreting such data. And the particular grade-change incident being hotly discussed really provides no evidence at all in this respect, at most pointing to the state of mind of a few administrators, none of whom is still in the administrative position he was at the time.

The other indication of incomplete knowledge about what happens in the Math Faculty came from Jeanne Kay Guelke in Geography: "I am outraged by the preferential (my emphasis) treatment of a group of 'elite' Math students." I had difficulty following the logic of most of her letter, for example, "... slap in the face to the rest of us peasants who aren't quite so elect" and "... the University cheerfully discriminates between

categories of students based on their academic discipline.”

I hope that simple abhorrence of “elitism” isn’t what she is getting at. If it were, I’m almost at a loss for words. I guess you’d have to say that “elite” is the correct word to apply to the sizeable group from this year’s graduating class who have had grad school offers from Princeton, Harvard, MIT, Chicago, Berkeley and a number of other places. (It’s actually very interesting and pleasurable teaching a class with some students who obviously are more gifted than the lecturer. But this did take some getting used to, when it first occurred for me three decades ago.) With the possible exception of one student who has had offers from every one of those universities, I think that members of this group will have completed degrees which are not just in Pure Mathematics but which include a second specialization. And, just off the top of my head, I know that serious upper level courses outside the Math Faculty – in physics, philosophy and primate physiology – comprise the programmes of these various students this year. So I’m inclined to regard all of this as

a good thing, not a bad thing.

On the other hand, if a simple-minded dislike of “elitism” is not what is behind Prof. Guelke’s letter, then I trust that the additional information in the earlier part of this letter will help quell any fears that we’ve created some version of apartheid in the Math Faculty.

Peter Hoffman
Pure Mathematics

On April 1, 2001, I began a new era in my life, when I retired from UW after 33 years as a faculty member. I am looking forward to new challenges and experiences, but (at the editor’s request) I am pleased to contribute a few reminiscences to the *Forum*.

I should say at the outset that UW has been a great place to work and I’m glad that I made my career here. I believe that the University of Waterloo is an impressive academic success story with the best undoubtedly yet to come. That success was the result of much hard work by many dedicated faculty and staff members (and perhaps I

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ON BEING A WOMAN

Judy Wubnig
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INTRODUCTION

Since the 1970s there have been attacks on the English language for having views about subjects, including men and women, which are wrong or immoral. The English language is said to denigrate women and cause their oppression.

This view is false since no natural language has any theory and the position of women in English-speaking countries is not worse than the position of women in places where non-English languages are spoken, and women are not oppressed in English-speaking countries.

NATURAL LANGUAGES AND THEORIES

Edward Sapir (1884-1939) and Benjamin Lee Whorf (1897-1941) argued that different languages have different theories about the world. Whorf, for example, argued that Hopi Indians do not think about time as English speakers do because the Hopi language does not have tenses.¹

This view underlies the theory that English has a theory about the sexes because it has gender, because some words include the word 'man,' and because some words distinguish between men and women.

The Sapir-Whorf Hypothesis

I will not deal with the Sapir-Whorf hypothesis in detail here except to note that there are faults with it. (Sapir and Whorf were, incidentally, fine linguists.) Many people speak several languages without changing their views of the world. Isaac Newton wrote in both English and Latin but had the same views. Although many languages, like Hopi and Chinese, do not have verb tenses, people who speak these languages do have concepts of time, of the past, present, and future. In English we say that the sun rises and sets, but most current speakers of English do not believe that the sun revolves around the earth, but attribute sunrise and sunset to the rotation of the earth.

The sexes and the English language

Gender

Gender is a grammatical category. Some in the recent past have proposed that the word be used to refer to conventional differences between the sexes, while the word

'sex' should be reserved to refer to the biological differences.²

This proposal has been a failure, since now the term 'gender' is beginning to be used for the biological differences! There is very little gender left in English. Only the third person singular pronouns, 'he,' 'she,' and 'it,' have the genders respectively, masculine, feminine, and neuter. Other languages have all nouns with gender, for example, French has two (masculine and feminine) and German three (masculine, feminine, and neuter), while other languages have none, for example, Chinese and Turkish.

There is little (but sometimes some) connection between gender and sex, and the distinctions called 'masculine,' 'feminine,' and 'neuter,' could just as well have been called 'red,' 'white,' and 'blue,' or 'one,' 'two,' 'three.' (Aristophanes has much fun with the distinction discovered by the Greek grammarians in his comedy *The Clouds*. See the confusions of Strepsiades when he discovers that nouns like 'pigeon' and 'trough' have gender, ca. 654-700.)

In German, two words for 'girl' are neuter (das Fraulein, das Mädchen) – the word for 'cat' is feminine (die Katze) and for 'dog' is masculine (der Hund), and Germans know perfectly well that the sex of girls is female and that cats and dogs come in two sexes. In French, the word for 'person' is feminine (la personne), though every Frenchman knows that persons come in two sexes. Germans do not think that the sun (die Sonne – feminine) is a female nor do the French think that it is a male (le soleil – masculine).

The confusion about gender and sex perhaps arises more easily among those who only speak English because there is so little gender in the English language. Remnants like referring to a dog as 'he' and a cat as 'she,' or a baby as 'he' or 'it' when the sex is not known do not show that the speaker does not know that dogs, cats, and babies come in two sexes. The character Alfie in the movie *Alfie* refers to women as 'birds,' and when he is talking about a 'bird,' he refers to 'it' – Alfie the womanizer knows quite well that a 'bird' is of the female sex! When a Scot refers to a young man as 'she,' he does not think that the young man is a woman!

The word 'man'

Some argue that the word 'man,' either by itself or as part

of a word, means an adult member of *Homo sapiens* of the male sex, so that words like 'chairman' and 'layman' have been changed to 'chair' and 'layperson.' A program at the University of Waterloo instituted in 1969 called 'Man and His Environment,' eventually had its title changed, and a course I taught, 'Mankind and Nature,' was changed in the University of Waterloo Calendar to 'Humankind and Nature' (without my knowledge or permission). So until very recently, English speakers knew that the word 'man' is the name of the species as well as sometimes a male of that species. Unless censors bowdlerize English writings, drama, film, and television from before 1980 or so, any English speaker will have to know this.

The one word refutation of this mistake is in the word 'WOMAN' itself, which does not mean someone of the male sex! (Some women have tried to hide this by rewriting the plural as 'wymmin' – some comic strip writers used 'wimmin' – but this changes the facts about the word 'man' not one bit.)

In fact, the original meaning of 'man' was for the species. I include material below from *The Oxford English Dictionary* and Dr. Ernest Klein, *A Comprehensive Etymological Dictionary of the English Language* on the words 'man' and 'human'. The *OED* is more cautious about the Indo-European root.

The term 'man'

- a) Man: Man (Old English) – generic term for *Homo sapiens*, probably originally meant 'one who thinks' from the Indo-European base *men 'to think', whence also OI 'matih', 'máatih' – 'thought', Latin 'mens, mentis' – 'mind', Gothic 'muns' – 'thought', 'munan' – 'to think'. 'Mathematics' from the Greek 'mathematikos', from 'mathema' – 'to learn', ultimately from the same Indo-European root *men-dh 'to have one's mind aroused, apply oneself to'. 'Mind' – from same Indo-European base *men 'to think, remember, have one's mind aroused, apply oneself to'.
- b) Human: 'humanus' (Latin), from 'homo' (Latin) – 'man'. Related to 'humus' – 'earth'. (Like Hebrew "Adam" – 'man', 'the one formed from earth'.)

Those familiar with Sanskrit or languages derived from it will recognize that 'man' means 'thinking being.' In English, the word 'man' appeared as parts of two words in about the eighth century: 'wereman' meant the male of the species and 'wifman' meant the female. By the twelfth century, 'wereman' had been contracted to 'man' and meant both the species and the male of the species, to be understood by context. (Again, see the *OED*.) This is clear in the King James translation of the Bible: "So God

created man in his own image, in the image of God created he him; male and female created he them." (Genesis I, 27)

ENGLISH-SPEAKING COUNTRIES AND THE STATUS OF WOMEN

Those who have attacked the English language as contributing to the subjection of women claim that it has the theory that women are inferior to men (in unnamed ways) and should be treated under the law with lower status. But is this true? Is there any relation between any natural language and the status of women?

Languages without gender

There are languages without gender, like Chinese and Turkish, yet countries where those are the main languages have not been countries where the legal status of women was equal to that of men and superior to that in English-speaking countries. That the status of men and women is relative to each other is not always easy to determine, so my comments are fairly general. Changes in the status of women in China and Turkey have occurred because of political changes, changes in ideas about the status of women, and not because of the languages. The status of women in England has for many centuries been superior to that in China and Turkey in the past.

The legal status of women in English-speaking political units

The legal status of women has been different in different political units where English is the language. The laws of England, for example, were and are different from those in Canada, New Zealand, Australia, and the different states of the United States. The states in the United States have different laws. Wyoming gave the women the vote in 1896, while other states did not. Before the Women's Suffrage Amendment to the U.S. Constitution in 1921, fifteen states had already granted women the vote.

Opportunities for Education

Even in the colonial period of English North America, girls had elementary education as well as boys. (The Massachusetts Bay Colony required that all children had to learn to read and write.) Higher education for women was made available in the United States before it was available anywhere else in the world: Oberlin College, Mt. Holyoke, and others from the 1830s on; Swarthmore College (my alma mater) in 1865; graduate education at Yale University (my graduate alma mater), in 1891.

Disagreement about the status of women

There has been much disagreement about what the status of women should be in English, because, of course, the English language takes no position whatsoever on the issue. Disagreement would be impossible if the language required one to take a position. Even those who attack the English language as pernicious show that their view is false just because they attack it in English!

Conclusion

The English language had and has no influence on the status of women in English-speaking areas. Those who have *discussed* in English what the status should be have had that influence, but not the language itself.

Author's note: My thanks to W. Keith Percival who has let me see his unpublished paper "Sex and Gender in Natural Language."

¹ See, for example, Benjamin Lee Whorf, "An American

Indian Model of the Universe" and "The Relation of Habitual Thought and Behavior to Language," *Language, Thought and Reality*, Selected Writings, ed. John B. Carroll, Technology Press of MIT and John Wiley & Sons, Inc., New York, Chapman & Hall, Ltd., London, 1956, pp. 57-64, 134-159. Also, for example, Edward Sapir, "Language and Environment," *Selected Writings*, ed. David G. Mandelbaum, University of California Press, Berkeley and Los Angeles, 1963, pp. 89-103.

² David Graddol and Joan Swann, *Gender Voices*, Oxford, UK; New York, NY, 1989, pp. 7-8.

FROM THE PROFESSOR FILES

It is not uncommon for instructors in Mathematics to include extra questions in assignments, giving students an opportunity to accumulate bonus marks in their termwork. The material in these bonus questions – typically more challenging than normal course material – is selected to allow the student to develop a deeper understanding of topics related to the course.

In one such course, a student complained to the instructor that such bonus questions "only help smart students get further ahead."

When the instructor shared this feedback with colleagues in the coffee lounge, one colleague remarked that the same complaint could be made about final examinations.



REMINISCENCES OF AN FAUW PRESIDENT – FAUW HAS COME A LONG WAY IN 20 YEARS

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should add that, in general, UW has also been blessed with some good administrators). I became familiar with the University's internal workings, and came to know most of the senior administrators, mainly as a member of the FAUW Board of Directors and as FAUW president (1991-93). I also served as a member of the UW Senate for about 12 years and the UW Board of Governors for about 10 years.

I first agreed to stand for election to the FAUW Board in 1983, simply because I was asked to do so by a colleague. I had no doctrinaire attitudes toward collective bargaining; I was simply contributing my service, as I would to any University committee. However, during my first year on the FAUW Board, I was amazed to realize how little influence the average faculty member had on our basic terms of employment. In those days, FAUW was a voluntary organization, and although more than 60% of faculty members voluntarily joined, FAUW really had little power to represent its members effectively. The Memorandum of Agreement, negotiated between FAUW and the UW Board of Governors in 1986, was the key to remedying this deficiency.

FAUW president Roman Dubinski obtained the first formal agreement for faculty members in 1971 when Burt Matthews was UW president. The "Matthews-Dubinski agreement" had a remarkable longevity – it was followed for over a decade – but it had no dispute resolution mechanism to require faculty issues to be considered seriously by the University administration. In particular, although a University salary committee existed to negotiate salaries, in reality it was an advisory committee, and the University's Board of Governors set whatever salary increases it deemed appropriate. A similar arbitrary process was specified for developing new policies.

FAUW president Bob Needham led the process of serious, significant change. Newer faculty members may not remember the incredible inflation of the 1970s and 1980s, when interest rates were as high as 20% at times, causing financial chaos for younger faculty members. After several years of frustratingly low salary increases set by the UW Board of Governors during this period of rampant inflation, FAUW called a special meeting of faculty members to address the problem in 1985. I remember it as the best-attended FAUW general meeting ever, with about 200 irate faculty members present. The meeting voted to obtain a proper salary negotiation process by whatever means necessary, including

certification as a faculty union, if required.

The FAUW Board met with UW President Doug Wright and several of the University's Deans a few days later. Surprisingly, at the very first meeting, Doug Wright personally agreed, in writing, to negotiate a proper salary settlement procedure with FAUW. I still believe that Doug's agreement was motivated by his innate sense of fairness, but a few days later, after the issue had undoubtedly been carefully reviewed, Doug named three totally inappropriate faculty members to represent the University administration in negotiating the new salary settlement process. The three faculty members were not involved in University administration and clearly had no mandate to commit the University to a binding agreement. In other words, faculty members could talk to themselves, but the UW administration would take no part in the discussion. Doug Wright's inappropriate committee appeared to be a shrewd move to derail the whole process.

FAUW refused to negotiate with the named faculty, and the process stalled. After a few weeks of inaction, a union certification drive began. When the news of the unionization activity was reported in the *Gazette*, a new four-person team, now composed of two vice-presidents and two Deans, was quickly appointed to negotiate with the FAUW Board. The negotiations continued for several months and, as I recall, were occasionally very abrasive (although I must confess that I may have been one of the chief "abraders").

The Memorandum of Agreement emerged several months later (March 1986), with a unique "made in Waterloo" dispute-resolution process for salary settlements, involving a mediator/arbitrator and final-offer selection which was to be binding on both sides. Faculty members finally had a proper procedure for negotiating salaries. Moreover, the negotiating committee, composed of four senior administrators and four elected members of the FAUW Board, was clearly an effective body for communicating and negotiating; it was later renamed as the Faculty Relations Committee, and is still active today.

However, the salary negotiation process was only one of many missing procedures. The procedure for dismissal of a faculty member was clearly inadequate (as the Jack Edmonds case later showed), and the internal discipline

and grievance procedures meted out hopelessly random justice (as the Ken Westhues and many other cases showed). And, clearly, the voluntary nature of FAUW was a serious flaw, since many faculty members got a “free ride” on the backs of the conscientious members who paid the dues and did the work. Fortunately, the Memorandum of Agreement has been renegotiated twice in recent years, and the above issues have been addressed. Each of the subsequent FAUW presidents, Jim Brox, Gord Andrews, Len Guelke, Ian Macdonald, Fred McCourt and, lastly, John Wilson, took leadership roles in improving its terms. On the other side, I would compliment Jim Kalbfleisch, Vice-President Academic and Provost for most of the past decade, as a competent and well-liked senior administrator (who recently took a well-deserved early retirement). Jim usually appointed reasonable, positive negotiators, and although he frequently dampened FAUW ambitions, he was able to disagree without being disagreeable.

The Memorandum of Agreement is now a far more useful document, but some work is yet to be done: For example, pensions and benefits are still not negotiable (they are under the sole control of the P&B committee, a subcommittee of the UW Board of Governors) and the question of including librarians in the FAUW (as is done at about 85% of Canadian universities) has not been properly addressed.

I would like to make a brief digression to give my opinions regarding University governance and the role of FAUW. Readers who disagree with me may wish to respond in future issues of the *Forum*:

■ **UW has collective bargaining because the Board of Governors wants it, not because FAUW wants it.** On several occasions I have suggested that, instead of negotiating a Memorandum of Agreement, the UW administration should negotiate personal employment contracts with each faculty member. The suggestion was always immediately rejected, usually with a laugh. To operate efficiently, the University must have a single contract which covers all faculty members (in other words, a “collective” agreement), and negotiating individual contracts with 700 faculty members is deemed to be impossible.

■ **The UW governance model works well.** A few of my colleagues have complained (usually over lunch in the Davis Centre) that the University’s governance model was unworkable and the UW Senate and Board of Governors are “rubber stamps” with little power. I would dispute this assessment. The UW governance model, as set out in the University of Waterloo Act, was written after publication of the Duff report (*University Government in Canada*, U of T Press, 1966) which was commissioned by CAUT and AUCC. The University of

Waterloo Act incorporates most of the recommendations of the Duff report. For example, faculty members and students sit on both the UW Senate and Board of Governors, and the FAUW president sits as an ex-officio member of Senate. These are radical departures from pre-1960 practices, and some universities are just adopting this openness now. Several FAUW Board members and presidents have also been elected to the UW Board of Governors. At many universities the faculty association president is specifically excluded from the Board of Governors. These are not minor points – when the University administration makes questionable decisions which cannot be resolved personally, or at the Faculty Relations Committee, the Senate and Board of Governors are logical places to address these decisions. This implies an immense power to influence University governance.

■ **The role of the FAUW Board is to act as a loyal opposition.** A university is not merely a corporation producing widgets, and the FAUW Board is not merely a labour organization, concerned only with salaries and benefits; the FAUW Board is analogous to the loyal opposition in parliament. The FAUW Board analyses the actions, policies and procedures of the administration and provides constructive criticism. UW Senators who also serve on the FAUW Board are always better-informed, because many of the issues have been previously discussed in the FAUW Board. In fact, I have heard better debates on important academic issues, such as academic freedom, intellectual property and natural justice in the FAUW Board than I have ever heard in any department meeting or faculty council (and that is not a criticism of the departments – we have great departments in Engineering). Of course, it is important that FAUW strike the right balance of cooperation and criticism. It is not the role of the FAUW Board to run the University, but merely to see that the University is properly run.

■ **We are better served by the Memorandum of Agreement than by a certified union.** Although some of my colleagues are still disappointed that the bid for union certification failed in 1997, I believe that the current Memorandum of Agreement is a more cooperative way to provide the necessary structure, with less bureaucracy.

In conclusion, I would like to thank our colleagues on the FAUW Board who spend endless hours making UW a better place to work. Few faculty members realize how their lives are improved because of your efforts. For example, few faculty members recognize that we are all several thousands of dollars richer every year because of the detailed financial research and skill of Ian Macdonald, who was our chief salary negotiator for most of the last decade. We appreciate the many hours that Board members spend in salary negotiations, developing University policies, helping colleagues with academic

freedom and tenure problems, sitting on committees, etc.. FAUW has been a key catalyst in creating a favourable academic climate at UW by initiating improvements and formulating policies and agreements. I hope the FAUW Board can continue to attract talented younger faculty members so that it will remain an informed, critical, but loyal opposition.

FROM THE PROFESSOR FILES

Forward from a long chain of e-mails:

Here is a true story regarding exams at Cambridge. It seems that during an examination one day a bright young student popped up and asked the proctor to bring him Cakes and Ale. The following dialog ensued:

Proctor: I beg your pardon?

Student: Sir, I request that you bring me Cakes and Ale.

Proctor: Sorry, no.

Student: Sir, I really must insist. I request and require that you bring me Cakes and Ale.

At this point, the student produced a copy of the four hundred year old Laws of Cambridge, written in Latin and still nominally in effect, and pointed to the section which read (rough translation from the Latin):

“Gentlemen sitting examinations may request and require Cakes and Ale.”

Pepsi and hamburgers were judged the modern equivalent, and the student sat there, writing his examination and happily slurping away.

Three weeks later the student was fined five pounds for not wearing a sword to the examination.



BOOK REVIEWS

The World Trade Organization: A Citizen's Guide

Steven Schrybman

Canadian Centre for Policy Alternatives/Lorimer, 1999,
\$19.95

Just over a month ago, U. S. President George W. Bush surprised many people by announcing that, despite campaign pledges to the contrary, his administration would refuse to regulate the emission of carbon dioxide by power plants. Bush's letter referred to "the incomplete state of scientific knowledge of the causes of, and solutions to, global climate change," while a White House spokesman explained that the classification of CO₂ as a pollutant during the presidential campaign had been "a mistake." Only a week after the CO₂ letter, which incidentally torpedoed the environmentally-oriented Kyoto Protocol into the bargain, the EPA reverted from the Clinton administration's guidelines for levels of arsenic in drinking water to standards set in the 1940s. The new standards had also been, in the words of a mining industry spokesman, "unsupported by the science." Many Democrats and environmentalists – and even a few Republicans and industrialists – were left shaking their heads and wondering what further scientific revelations the Bush administration had in store: PCBs as sources of vitamins, perhaps? Chlorine gas as air freshener? The discovery that toxic sludge is, as an old *Saturday Night Live* ad parody called one mythical miracle product, "a dessert topping and a floor wax"?

Of course, none of these ludicrous hypothetical discoveries is going to come to pass (I hope). Bush is not merely some kind of reactionary lunatic, nor do his policies mark a return to the days of Ronald Reagan (who reportedly believed that air pollution was caused by plant life). In fact, in their emphasis on jobs ahead of potential environmental impact, Bush's decisions are very much of the twenty-first century: the era of the World Trade Organization, in which, as environmental lawyer Steven Schrybman puts it, "the rules of international trade have been operating to undermine the capacity of government to do what most voters elected them to do: develop policy and make laws that reflect the priorities and needs of Canadian society" – or any other democratic society (v). In a world in which one third of all productive assets are in the hands of multinational firms and 40% of international trade is carried out within corporate families, "free trade" has become the shibboleth of both economically dominant nations hoping to retain their dominance and developing nations seeking entry to lucrative world markets.

The roots of the free trade philosophy as we now know it,

in Schrybman's description (95), lie in a profound misinterpretation of the economic principles of Adam Smith and David Ricardo, who created the concept of "comparative advantage," according to which nations engaged in mutual trade all prosper most when each specializes in producing what it alone produces best. This principle, as applied by WTO panels and other modern free-trade mavens, not only underestimates the value of economic diversity within national borders, but also conveniently ignores the fact that Smith and Ricardo built their theories on the premise that capital would remain comfortably ensconced within particular nations, as in the days of the gold standard (of which Ricardo, at least, lived to see the beginnings). Within national borders, where capital moved fairly freely even in the 1700s, as Smith and Ricardo already recognized, comparative advantage simply does not work and sheer profitability becomes the major impetus of investment. The problem is, capital is now even more mobile than Smith and Ricardo could ever have imagined, with billions of (arguably imaginary) dollars/yen/marks/pounds circling the globe electronically every day, short-circuiting the principle of comparative advantage at the planetary level. As a result, profit is king and the WTO, "an 'economic constitution' for the planet written by – and almost entirely for – the world's largest corporations" (6), has developed into a power that can trump even the mightiest governments, by means of dispute resolution panels whose members need no legal training and whose decisions, taken behind closed doors, are unbound by the rule of precedent and automatically take effect. (Canadians have experience with such processes already, since the NAFTA agreement is similarly structured.)

The result has been a steady stream of WTO panel decisions in which government regulations on trade (broadly defined to include services and other intangibles), whether motivated by protectionism or by ecological concerns, have been overturned under threat of sanctions so draconian that even the U.S. government has been forced to toe the line – as it did when it gutted its own Clean Air Act rather than pay \$150 million a year (4). What is worse, it is not only other governments who can intervene in a nation's domestic policies; under the provisions of NAFTA, or of the draft Multilateral Agreement on Investment (MAI) that has failed to achieve ratification within the OECD and is now being redrafted for possible integration into the WTO network of agreements, investors are equal to national governments in the invocation of a dispute resolution. In other words, although protesters at the Summit of the Americas may not get a chance to meet national trade delegations face to face, any investor who feels aggrieved can sue a national government for redress – a remarkable innovation in an am-

bit where up to now, national governments alone have possessed legal standing. In fact, under NAFTA Canada has been sued for banning the import of MMT, a potentially hazardous heavy metal fuel additive, by the American company that manufactures the additive, who charged that the ban expropriated its business. Faced with the real possibility of losing the case, the Canadian government paid the company \$19 million, rescinded its ban, and publicly stated that MMT was not a threat; thereby saving most of the \$350 million which the plaintiff was demanding, but opening itself to further suits, which have indeed followed (disturbingly, the Canadian government refuses to disclose how many suits have been filed, by whom, or for how much, based on a strict interpretation of the secrecy rules established by NAFTA; 132-3). No wonder, then, that President Bush has little enthusiasm for combatting mere CO₂ emissions against the interests of business.

Shrybman's book is informative and well-organized, though his style is hardly elegant (and further marred by fairly frequent typos); given the breakdown of the WTO structure, the number of case studies Shrybman provides to describe the WTO and NAFTA decisions' effects on both Canadian and foreign governments and businesses, there is much here of interest even to the hard-nosed business-minded conservative, though the book obviously addresses an environmentally conscious readership. For this readership, given the dire description of the WTO process presented here, perhaps the most surprising aspect of this book will be its upbeat interpretation of the challenges posed by the free trade agenda as ultimately positive developments.

On the one hand, Shrybman writes, the opponents of free trade have the opportunity to air their concerns about ecology and human rights in a context that makes it absolutely clear that these issues are directly linked, in terms of both cause and effect, to economic developments; and on the other, the creation of the WTO demonstrates that international cooperation can indeed lead to the creation of standard-setting bodies with real clout (7-8). Just as many national governments have come to incorporate and ultimately defend the rights of women, of children, and of minorities, so too can the framework of the WTO be changed. It is only a matter of enough people with enough influence coming to believe that American jobs, or jobs in any other nation, cannot simply be traded off against economically, ecologically, and ethically sustainable development: if there is no air or arable land, there will be no jobs to lose and no one to lose them. In other words, the WTO can serve not as the antithesis of socially liberal environmental action, but rather as the model and the precursor of a sort of super-Kyoto Protocol, before which even the world's one remaining superpower might someday quail. Shrybman believes that the citizens who are explicitly framed as the audience for this

book ultimately still have that power; and surely even the most conservative among us must hope that indeed they do. If big government is bad, after all, how can big management be any better?

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The Rise and Fall of Modern Medicine

James Le Fanu
Carroll & Graf, New York, 2000.

In 17th century England, life expectancy was 18 years, and only one person in a hundred lived to 75. Today, life expectancy is 70 years or more in most Western countries. What accounts for the difference?

Certainly better nutrition, brought about by improvements in agriculture and transportation, played an important role. But another factor was the rise of modern medicine. James Le Fanu, a British physician and science writer, ably documents medicine's amazing successes from 1940 to 1980 in the first half of his book, *The Rise and Fall of Modern Medicine*.

Le Fanu identifies ten "definitive moments" in modern medicine: the development of the drugs penicillin, cortisone, streptomycin, and chlorpromazine; surgical techniques such as open-heart surgery, kidney transplants, and in vitro fertilization; the detection of smoking as a cause of lung cancer; the cure of cute lymphoblastic leukemia; and the discovery of the infectious agent helicobacter as a cause of peptic ulcers. Le Fanu narrates the story behind these achievements with flair and style, although the successes of British scientists are overemphasized to the detriment of work done in North America. The first half of the the book can be profitably read by anyone interested in medicine or science.

The second half - "The Fall" - is the controversial one. Here Le Fanu describes why he believes the golden age of discovery of new drugs is coming to a close, and constructs a polemic against two trends in modern medicine: the "New Genetics" and the "Social Theory".

Le Fanu is deeply puzzled by the fact that biological organisms produce secondary metabolites of complex molecular structure, and that some of these prove useful in fighting human diseases. He finds the effectiveness of

antibiotics an unfathomable mystery, and rejects the evolutionary explanation that antibiotics are a form of chemical warfare developed by organisms over a period of millions of years. Citing Selman Waksman, the discoverer of streptomycin, Le Fanu argues that an evolutionary explanation cannot be correct because (a) only a handful of organisms produce antibiotics (b) the presence of antibiotics in soil at a level high enough to destroy other organisms has not been demonstrated. But neither of these reasons is compelling.

First, through the process of evolution, organisms adopt a wide variety of strategies to gain a reproductive advantage. There is no more reason to expect that every organism should produce antibiotics than there is to expect that every organism should have sharp teeth, wings for flight, a large brain, insulating fur, excellent eyesight, or any one of a million different adaptations that evolution has provided. The explanation for any particular adaptation is necessarily *contingent*: depending on, in the words of French biologist Jacques Monod, both chance and necessity. So much for argument (a).

Second, Le Fanu apparently doesn't know about the work of Washington State scientists David Weller and Robert Bonsall, who showed conclusively how the naturally-produced antibiotic 2,4-Diacetylphloroglucinol in soil controls "take-all", a root disease of wheat caused by the fungus *Gaeumannomyces graminis*, thus undermining argument (b).

Why is Le Fanu so opposed to an explanation of the effectiveness of antibiotics based on evolution? Although he doesn't say so outright, a quote from Ecclesiasticus 38:4 at the beginning of the book – "The Lord hath created medicines out of the earth; and he that is wise will not abhor them" – strongly suggests a sympathy with a supernatural explanation. Further evidence for this conclusion is Le Fanu's use of a very lengthy excerpt (p. 204) from Michael Denton's creationist tract, *Evolution: A Theory in Crisis*. (Denton's unreliable book is marred by very severe misunderstandings that are easily recognized by any professional biologist [1].)

It is then a little surprising to learn that Le Fanu erects the theoretical foundation of his attack on the "New Genetics" and the "Social Theory" on an evolutionary basis.

By the "New Genetics", Le Fanu means harnessing our understanding of the genetic basis of life to help cure disease, through genetic engineering of new drugs, prenatal screening, and gene therapy. By the "Social Theory", he means the belief that many diseases are caused by dietary and environmental factors, and hence these diseases can be cured or ameliorated by changes in lifestyle.

Le Fanu is probably correct when he says that the initial promise of the New Genetics has not yet been realized, and he is probably correct when he says that the benefits of a low-fat diet have been greatly exaggerated. But he goes beyond far beyond these reasonable claims. Le Fanu contends that medicine will *never* reap substantial benefits from the New Genetics, and further that there are good theoretical reasons to believe that the Social Theory cannot be correct, even in principle.

For example, Le Fanu states that "...genetics is not a particularly significant factor in human disease. This is scarcely surprising, as man would not be as successful a species as he is (many would argue too successful), were it not that natural selection had over millions of years weeded out the unfit."

Le Fanu's incorrect evolutionary reasoning is a splendid example of how poorly understood Darwin's important theory still is, 150 years after the *Origin of Species* – even among medical professionals who could be expected to have mastered it.

Le Fanu is wrong. Genes *do* indeed play a significant factor in disease. Type 2 diabetes, heart disease, and colon cancer are just a few of the maladies with a strong genetic component, even if we cannot point to specific single genes that cause them. It may be true, as Le Fanu points out, that these diseases are multifactorial, but that just means the fight against them will be challenging, not impossible.

Second, although Le Fanu recognizes that genes are pleiotropic – a single gene may have multiple effects when it is expressed – he does not seem to appreciate the devastating consequences this fact has for part of his argument. As explained in the evolutionary theory of senescence, evolution may select for genes that have beneficial effects on reproductive fitness early in life, but deleterious effects later in life. Illnesses such as heart disease, which largely afflict people well after their reproductive years, will *not* – contrary to Le Fanu's claims – necessarily be "weeded out" through natural selection. (Readers interested in this line of reasoning will want to read Randolph Nesse's and George Williams' splendid book *Why We Get Sick: The New Science of Darwinian Medicine*.)

Examining gene interaction, Le Fanu concludes that its complexity makes our genetic mastery of disease impossible. Quoting geneticist Philip Gell, he says, "The heart of the problem lies in the fact that we are dealing not with a chain of causation but with a network that is a system like a spider's web.... The gap in our knowledge is not merely unbridged, but in principle unbridgeable and our ignorance will remain ineluctable."

I find this conclusion extraordinarily pessimistic. Our understanding of genetics and development is still in its infancy. We have only this year completed an initial classification of the human genome, and an enormous amount of work remains to be done. Both Gell and Le Fanu need to review Clarke's first law: "When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong." [2]

Le Fanu's attack on the Social Theory of disease is also based, in part, on a faulty understanding of evolution. He writes, "Thus the Social Theory might seem plausible enough, but Man as the culmination of millions of years of evolution is capable of surviving in the most diverse of circumstances. It would thus seem highly improbable that suddenly, in the middle of the twentieth century, he should have become vulnerable to lethal diseases caused by his 'lifestyle'."

There are many problems with this kind of reasoning. First of all, although people do survive and prosper in a wide variety of different habitats, they do not do so uniformly. For example, life expectancy continues to be substantially lower in countries where malaria is endemic.

Second, an adaptation that is beneficial in one environment, such as sickle-cell gene in the case of malaria, can become deleterious in another environment. Today's human population is much more diverse, with many people living in environments radically different from their ancestors. The lifestyle may change, but the genes haven't had a chance to catch up.

Third, man's life expectancy has probably been 15-20 years for all but a tiny fraction of man's two-million-year existence. It follows that the typical causes of death for people in Western countries today are radically different from what they were for 99.98% of man's evolutionary history. It is not in the least implausible that these modern causes of death, occurring later in life, could be due in part to diet or environmental factors.

Fourth, the typical diet in Western countries, high in sugar and saturated fats, is likely quite different from what most people have eaten over the last two million years. The desire for these foods may have been evolutionarily beneficial in the Pleistocene, but is considerably less so today. For example, diet seems to play a significant role in the development of Type 2 diabetes among the Pima Indians, who eat very different foods today than just 75 years ago.

Le Fanu says, "The environmentalist theory is invalidated by the biological necessity that the human organism be

resilient and not readily injured by minuscule levels of pollutants in air and water." This argument may be true when applied to naturally-occurring toxins, such as tannins. But today's humans are exposed to a whole soup of artificial toxins (e.g., dioxins, PCB's, DDT, strontium-90, nickel, carbon monoxide, organic mercury compounds) that people were rarely or never exposed to before in their evolutionary history. There is no reason to believe our biology should be so resilient that it can even handle radically new toxins never before encountered!

It follows that the theoretical basis behind Le Fanu's attack on both the New Genetics and Social Theory is quite flawed.

Despite these flaws, the second half of *Rise and Fall* is not completely without value. Le Fanu argues that poorly-understood diseases, such as multiple sclerosis and acute childhood leukemia, may be caused by some type of infectious agent, an interesting hypothesis that deserves further study.

One final problem is that the book is marred by carelessness. For example, the last name of open-heart surgery pioneer Walter Lillehei is consistently misspelled as "Lillehai", and the University of Chicago is inexplicably called "Chicago University".

My advice to readers of *The Rise and Fall of Modern Medicine* is to savor the high adventure of the first half and take the flawed second half with a grain of salt. But not too much salt – it might adversely affect your blood pressure.

[1] See <http://www.talkorigins.org/faqs/denton.html> or the review by Philip T. Spieth in L. R. Hughes, ed., *Reviews of Creationist Books*, National Center for Science Education, Berkeley, 1992.

[2] Arthur C. Clarke, from a chapter entitled "Hazards of Prophecy: The Failure of Imagination", in his book *Profiles of the Future*, 1962.

Jeffrey Shallit
Department of Computer Science

UNIVERSITY OF WATERLOO
2001 - 2002 COMPENSATION NEGOTIATIONS

MEMORANDUM OF SETTLEMENT

27 March 2001

The agreement reached by the Faculty Association and the University for the salary year 1 May 2001 to 30 April 2002 is as follows:

- A salary scale increase of 2.65%
- An increase in sabbatical compensation from “full-year at 80% salary” to “full-year at 85% salary”
- Extension of the right to convert one week of annual vacation entitlement into a 2% salary increase when within three years of retirement (as per Memorandum of Agreement Article 11.4) to 30 April 2007

Additional Information

Sabbatical compensation will not be open for negotiation for a period of 3 years. “85%” also replaces “80%” for “early sabbatical” leaves as defined in UW Policy 3.

The change to sabbatical compensation applies to sabbaticals that begin May 1, 2001 or later. It does not apply to any part of a sabbatical that began or begins before May 1, 2001.

A NOTE OF THANKS

A great deal of work and expertise is required in some FAUW committees. And this is nowhere more true than in the Compensation Committee. During the last few years this committee has benefitted greatly from the direction of Dr. Mohamed Elmasry. Dr. Elmasry constantly reminded the Administration and external arbitrators that we are seriously falling behind salaries paid at the University of Toronto and, yet, as a faculty, we are just as good as the faculty at Toronto.

His argument proved persuasive and for two years in succession Dr. Elmasry helped us to attain the best settlements possible in these Hurrised times. He is going on sabbatical next year and our best wishes go with him.

Over the last two years Dr. Elmasry worked closely with Dr. Metin Renksibulut. Dr. Renksibulut knows as much (probably more) about the finances of the university as do his counterparts in the administration. He is assuming responsibility for the Compensation Committee, so we know that committee is in good hands.

*Catherine Schryer
President, FAUW
Member, 2001-2002 Negotiating Team*

PRESIDENT'S MESSAGE

Catherine Schryer
Department of English

Greetings and salutations!

As the incoming president of the FAUW, I wish to thank my fellow Board members for their vote of confidence in my ability to provide direction for the next year.

In particular, I wish to thank the two past-presidents, John Wilson and Fred McCourt. As a director on the Board for the last four years or so, I watched with admiration as both John and Fred negotiated with skill the ins and outs of this university and did so with skill and diplomacy. Both know more about the policies and procedures that govern this university than they perhaps ever wished to know. Over the last few years both have also encouraged more women and more new faculty member to join the Board and participate in FAUW committees and activities. Both have promised that they will continue to provide the Board and myself with advice and direction. I look forward to their support and will be continuing in the direction that they have carved out for the Board.

As the new President, it is traditional to take occasions such as this to outline one's plans for the year. My first aim is to continue the tradition of effective governance that I have experienced since I joined the Board four years ago. My second aim is to develop further the services and resources that the Board provides to faculty members. In particular, I will be working closely with the AF and T committee to develop even more effective policies and procedures to deal with grievance cases. In my view, the role of the professoriate is coming under attack. The grievance cases at Toronto – the Olivieri case, for example – are symptoms of an increasing campaign to devalue academic freedom. It is no secret either that the current Provincial government would gladly dismantle tenure if it could. As a professoriate, we will continue to need strong policies and clearly laid out procedures to protect our interests. Thirdly, I hope to encourage the university administration to improve its policies regarding the hiring and treatment of women faculty members. This university has one of the lowest rates of hiring and retaining female faculty members of any university in Canada (at the bottom right next to the Royal Military College). I would like to see this situation change. Fourthly, I hope to continue Fred and John's tradition of bringing new people into the Faculty Association's committees and on to the Board. Joining a committee or the Board itself is an excellent way to learn how this university works, and I will be encouraging new participants. Finally, I plan on keeping open lines of communication between the Board and members, between the Board and the Faculty Relations Committee (FRC), and

between the Board and the administration.

Towards the end of April, the Board will be saying farewell to five Board members – Fred McCourt, Vera Golini, Alicja Muszynski, Anne Fullerton, and Mohamed Elmasry – and welcoming five new members – Mieke Delfgaauw, Metin Renksizbulut, Ray McLenaghan, Conrad Hewitt, and Bill Power. Conrad Hewitt joins the Board as the President of the St. Jerome's Faculty Association, replacing Vera Golini. I have already spoken of my admiration for Fred McCourt. I would now also like to thank Vera, Alicja, Anne, and Mohamed for their participation in Board activities. Vera was, as many of you know, the editor of the *Forum* for several years, and chair of the Hagey Lecture Committee. We shall miss her enthusiasm. Alicja was the chair of SWIC for several years and an active member of the FRC. Anne has been the OCUFA Director for the last year and a half, acting as liaison between FAUW and the Ontario Confederation of University Faculty Associations. Mohamed was the chair of the Bargaining Committee for several years. I had the opportunity of sitting on that committee this last year and witnessed first hand his superb bargaining skills. We will miss Fred, Vera, Alicja, Anne, and Mohamed. However, we will be welcoming Mieke, Metin, Ray, Conrad and Bill, each of whom brings new and much needed skills to the Board.

During the next month or so the new Board will be dealing with several issues. Policy 3 on sabbatical leaves is almost through the second draft stage and will be available for general commentary shortly. In my view, as we continue to work on this policy, it is becoming clearer and more protective of the interests of individual faculty members. We will then continue on to Policy 69 on conflicts of interest. If you have a particular view on this issue, please contact us. We are also continuing on-going discussions with the administration regarding the recent grievance case related to changing grades and a better definition of academic freedom.

We are collectively in a time of vast change. To circle one's wagons and gaze inwards ignoring the effects of change is not an option. Change needs to be managed as humanely as possible. I hope with your help to contribute to this effort.