

Brock 5

Commentary

There is something very satisfying about watching a building grow. From a certain sameness of construction materials there emerges a new individual in the architectural landscape; the feeling of accomplishment is shared by everyone from the original planners and the people who poured the concrete to the person who eventually cleans the windows at night when all the rest have gone home.

Transforming ideas into reality is also the work of some of the academics we meet in this issue — the one who helps turn abstract notions into new legislation, or uses mathematical concepts to solve personnel headaches. At the same time, however, the need for idea-makers has never been greater. Imagination is just as valuable a natural resource as fossil fuel, and sometimes as difficult to find. The magazine will also introduce you to people who could take the phone book and make it memorable.

The face of Brock is evolving; the new swimming pool fills a gap in the landscape and a more important space in our programs and community life. Some growth is not as easy to see, but it's there — and the general feeling is that the university is coming of age. Having a strong alumni is one of the best examples of this; with more than 7000 people at least one step beyond Brock, the university has entered a new phase of effecting changes and shaping society.

Bring on the 80's.

Lesley Higgins

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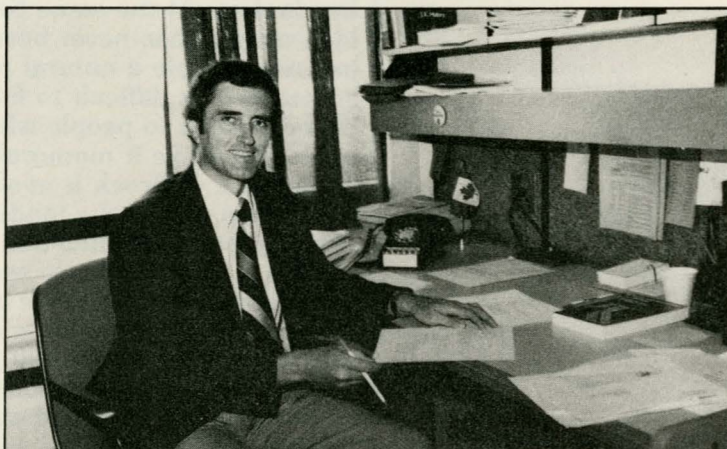
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Making sense of the mandarins

When someone says *bureaucrats*, what images spring to mind? Thomas Carlyle denounced them as "the continental menace", while that ultimate liberal, John Stuart Mill, lauded the fact that "the work of government has been in the hands of governors by profession; which is the essence of meaning of bureaucracy". A dictionary will tell you that a bureaucrat is an official who tries to concentrate administrative power in his 'bureau'; an irate taxpayer may give you an altogether different story about a self-important rules and regs dragon.



Ken Kernaghan will define bureaucrat in several ways — but all without the "invidious connotation that the word has today".

"I'm biased, I guess, but I have always felt that there was too little recognition of the role that the bureaucracy plays."

As a specialist in the burgeoning field of public administration, Kernaghan finds himself a cross-appointed professor of both politics and administrative studies. "The study of public administration is generally considered to be a sub-field of political science," he explained, although separate schools of public administration are now emerging in Canada. "If you could sit down *de nouveau* and say, what's the best way to study public administration, that would be the ideal." Teaching and conducting research within the existing academic framework is not a problem, however — it is more a case of common sense.

"Any student who graduates these days with a BAdmin or a BCom should understand how government works. There's such an intertwining of concerns." Tantamount to such an understanding, in Kernaghan's mind, is an accurate idea of who and what a public servant (bureaucrat) is. And isn't.

"Much of the public's idea comes from contact with members of the bureaucracy at the lower echelon. These people are relatively constrained in the flexibility they can exercise in making decisions.

Out in the field, in local offices, they cannot depart from established rules and regulations." This striving for consistent and uniform treatment is small comfort to the fisherman in Glace Bay who has different needs from the accountant in Victoria. "It does make it difficult to reconcile regional needs," he conceded.

Public servants are people too, Kernaghan says — and they represent an almost staggering percentage of the population. "Broadly interpreted, I would say that one sixth of all Canadians are government employees." They may be working in one of the 'regular' departments of federal, provincial, regional, or local governments. But they also include the diversity of people working for 'public' corporations — everything from the CNR to a liquor control board. In the federal realm, there are 30 regular departments, and more than 400 'ABCs'.

Agencies, boards, and commissions — from the CBC to the Atomic Energy commission, they wield a great deal of power and influence. And they represent a perplexing blend of careerism and patronage, honest achievement and pork-barrelling. Kernaghan insists that, "There are not that many so-called political appointments in the senior positions of the federal services. There are some, and Trudeau certainly made some. Yet most 'political' appointments are made in the ABCs. Many defeated or retired candidates, or party faithful, are appointed to

the boards and agencies."

The St. Catharines academic can speak with such quiet authority about the inner workings of the public service because of years of close observation and writing. His professional activities include a ten-year association with *Canadian Public Administration*, a respected journal of which he is now the editor. The textbook he edited, *Public Administration in Canada*, is in its third edition. Numerous articles and papers have been produced: each expanding another facet of the activities, ethics, and responsibilities of the nation's public servants. Prof. Kernaghan is not one for depending on second-hand information. The year before he became the first director of Brock's School of Administrative Studies, in 1974-75, he served as director of educational research for the Public Service Commission's Bureau of Executive Education.

"One of my concerns as an academic is to have an impact, not only on my colleagues, but if possible, on the direction and processes of government," he said, adding that however noble the goal, "you take a chance that you aren't going to satisfy either."

"Ethical conduct: guidelines for government employees", a monograph Kernaghan produced in 1975 for the Institute of Public Administration (IPA), far surpassed a 'satisfactory' rating. The draft 'code of ethics' has become the basis of many codes of behavior written for public servants — and it played a major role in the development of federal 'conflict of interest' legislation. "It gave them the language they needed," commented Kernaghan.

His first impulse is to insist that "a very small percentage of the total number of government employees are involved in unethical conduct", whether it be conflict of interest, a question of confidentiality, political partisanship, or the case of civil servants making public, critical, comments about the government. When the IPA held a press conference to introduce the monograph, one reporter asked Prof. Kernaghan whether or not he had 'inside knowledge' about unethical practices — the newsman was concerned that recent public revelations about questionable activities were actually just the tip of the iceberg. Kernaghan's reply, then, was that the iceberg was a very small one. Today, he admits, "It has grown much larger. It is an even more serious problem than when I originally began my research."

(It should be comforting to know that there has been "just a revolution in the extent to which governments have instituted regulations and ethical codes".)

Although a "substantive policy field" of administration, the powers and responsibilities of the bureaucracy "have not been very well-examined in Canada". Perhaps that is why Kernaghan has zeroed in on "discussing and analyzing the means by which public servants may be held responsible for the power they exercise — and have to exercise, I may add".

The analysis begins at the top of Parliament Hill: with deputy ministers, the senior administrative officials. "Some of these deputy ministers are appointed on partisan grounds," Kernaghan said, "but most are not. I have really been impressed with the quality of senior public servants in Ottawa." Given that politicians may come and go, and cabinet ministers may be shuffled in less time than it takes to change the stationery, providing continuity in government is a task that generally falls to the civil service. There are two relevant sayings on the inside. Government ministers are described as 'birds of a brighter plumage, but a swifter passage.' Put another way, The dogs may bark, but the caravan continues on.

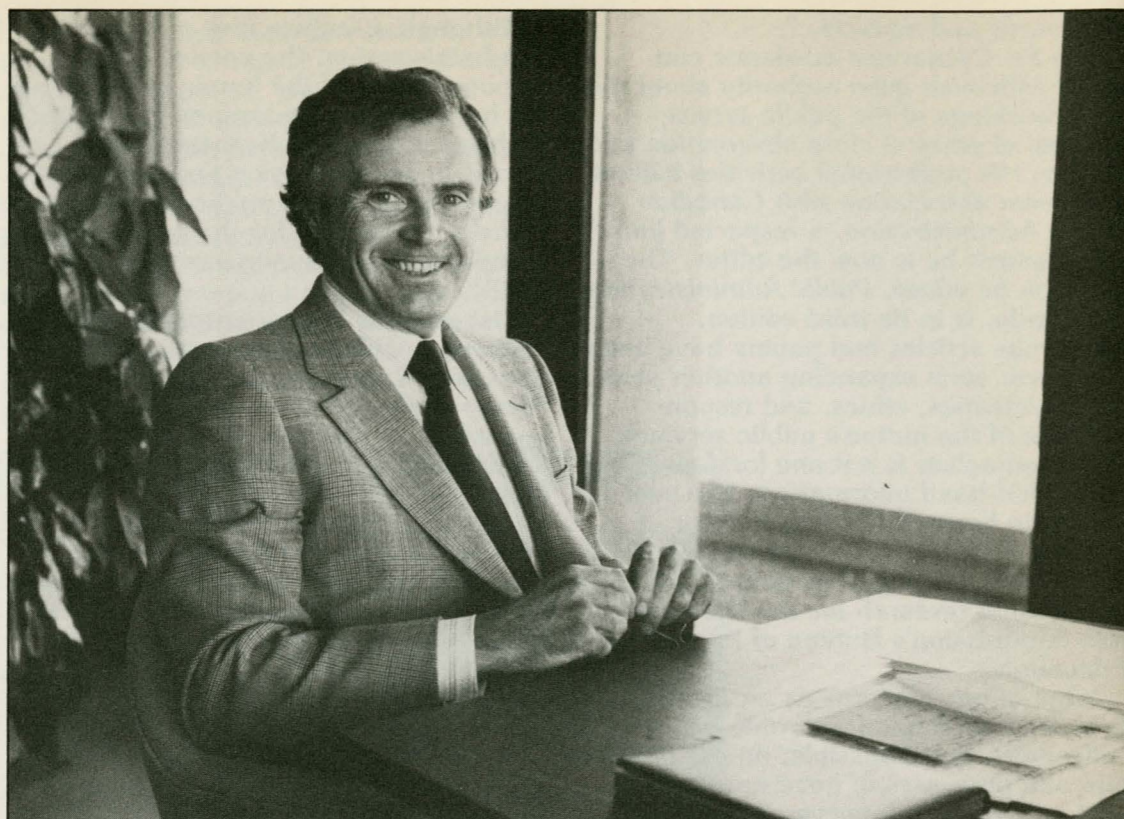
Until there's a federal election. Some public servants, although not partisan, represent too much permanence — entrenched ideas and approaches that have long been a source of the new government's discontent. "Joe Clark is appearing to replace those senior bureaucrats who are 'too committed' to certain policies," Kernaghan commented. "Some key public servants are being removed anyway because they had been giving the (Liberal) government advice about policy — and as the opposition, the Conservatives were very critical of those policies."

Prof. Kernaghan is sceptical about some of the Tory campaign pledges. Eliminate 60,000 positions from the civil service? "I get the impression that the number was pulled out of a hat — it is a fairly rough estimate." Such a large reduction would be difficult to achieve in three years if the government tried solely 'to attrit' (new buzz verb). "But Sinclair Stevens is talking about 'privatizing' certain crown corporation. These employees, I assume, would be counted among the 60,000."

With or without Joe Clark's interventions, in the next few years public administration will continue to provide Ken Kernaghan with "a great agenda of research".

"Government in Canada, and in other industrialized, democratic countries, is huge and complex." Kernaghan's task, to use the jargon, will be to de-complex it.

Alan Earp, AUCC man



"Elementary and secondary schools can remain wholly a provincial matter, but universities should not be restricted. Scholarship and research transcend provincial boundaries."

When Alan Earp describes the urgent need for a national education policy, he speaks with new authority. Last June Dr. Earp was elected president, for a two year term, of the Association of Universities and Colleges of Canada (AUCC). "The AUCC is the national collectivity of all degree-granting institutions in Canada: universities, primarily, and some colleges," he explained. "Its principal task at the moment is to make representations on behalf of all institutions in respect of national concerns."

Foremost among these concerns are the lack of planning, co-ordination, and adequate funding. "The previous federal government abdicated its role in post-secondary education," Dr. Earp criticized. "The universities' position has been weakened. Because of the lack of federal presence, the universities aren't getting the funds they deserve." Historically, higher education has been a federal as well as a provincial responsibility; until the 1960's, it was the AUCC's task to transmit funds to the various schools. 'Provincialization', a phenomenon of the late 60's, resulted in changes in the fiscal payment plan, so that today we have the situation where, "the provinces deliberately obscure the fact that money is coming from the federal government".

Provinces cannot afford to make decisions in isolation, Dr. Earp said. "You can't have both medicine and engineering in P.E.I., nor can you have veterinary science in every province. There has to be national planning.

"Because Ontario is so large, it is quite possible for us to be comparatively self-sufficient," he admitted. But our universities have paid dearly for regional xenophobia. "I don't think there's any question that the fall from eminence has been greater in Ontario." Seven or eight years ago, Dr. Earp estimates, our facilities and programs were among the best in the country. Current statistics show that the Davis government's budgetary priorities have resulted in our being ranked eighth in the country. Fiscal restraint is very much a national experience, but "the problems are more acute in Ontario. The squeeze has gone on longer".

Not unaware of the problems facing the universities, provincial education ministers have discussed ways and means of co-ordinating their efforts. Ontario's Dr. Bette Stephenson, especially, is in favor of allowing the Council of Ministers of Education to develop into a quasi-federal education ministry. This would not be a solution, Dr. Earp insists — just another level of bureaucracy to deal with.

As things are now, "it's a bureaucratic nightmare". Post-secondary education matters are divided between at least three federal departments:

science and technology, external affairs, and secretary of state. "How does another country deal with Canada in terms of higher education?" Dr. Earp conjectured — and then presented a typical (typically disheartening) example.

Last year the Chinese government announced plans to place more than 500 students in universities and technical schools around the world. When it came to talks with Canadian authorities, however, "they found that they had to deal with ten different provinces".

"It has been an absolute nightmare of confusion," exclaimed Dr. Earp. "As a result, Canadian universities will miss out on a lot."

Missing the boat, academically speaking, would seem to be a national *forté*. In a 1978 brief to the federal (then Liberal) government, the Science Council of Canada noted that "Canadian science is in serious trouble". "Today," the document stated, "we are contemplating vast energy projects, new ways to harvest our oceans and forests, essential health-care programs, and a multitude of techniques and programs to safeguard the natural environment. The scientific and technical excellence that underlies Canada's ability to do these things — and to control the way that they are done — is at risk . . ."

Improving the state of research and development (R&D) in Canada is one of Dr. Earp's, and the AUCC's, primary goals. "If we're going to be competitive — in industry, in commerce — we've got to have the research," he commented. Canada spends less on R&D than any comparable industrialized country — less than one per cent of the gross national product (GNP). The Liberals suggested, but did not implement, a plan to increase expenditures to 1.5 per cent of the GNP. The Conservatives insisted that spending 2.5 per cent was necessary; whether or not they will honor this commitment remains to be seen.

"The feds are saying this at a time when research in the universities, because of the decline in operating funds, is at an all time low," said Dr. Earp. By the time funds for research are made available, the universities may again face the situation of having to look outside Canada for qualified scientists, technicians, and teachers. "We must act now both to conduct the initial research and to train the people who are going to carry it out.

"If we are going to have Canadians conducting the research, they should be in graduate schools now."

Should we be surprised that the presi-

dent of one of the country's smaller universities is now 'chairman of the board' for all of them? "It doesn't often happen" that the AUCC head comes from a small institution, Dr. Earp admitted (his predecessor was the rector of the University of Montreal). "In part, it can be seen as the recognition that small universities count too.

"Speaking as Brock, I'm interested in talking to not only Trent but U. Vic, Mt. Allison, and the University of Winnipeg." There is some dichotomy of interests between the large and small universities, but "in most issues, we're not divided".

Peking man

There are weighty responsibilities attached to the office of AUCC president — well as some enviable perks. Dr. Earp travelled to Helsinki in the summer as an observer at the Conference of Rectors of European universities; as a member of the council of the Association of Commonwealth Universities, he attended meetings in London, England last June, and will go to India in January. He has attended the installation of several new Canadian university presidents. And there are other "odd things", such as sitting on the advisory council for the Order of Canada.

What may strike many as his most adventuresome journey thus far took place last spring, when Dr. Earp, as AUCC vice president, participated in the Canadian Education Delegation visit to China. The concentrated two week tour included visits to university-level institutions in Peking, Tsinghua, Nanking, and Shanghai. The impressions he carried home are a mixture of dismay and admiration.

Overall, he was deeply impressed by how much, when compared with other developing countries, "the Chinese have accomplished in terms of the achievement of a reasonable standard of living for the entire population. There was no evidence of conspicuous poverty or conspicuous wealth".

"But after that," he commented, "you start to feel that, technologically, you are back in the early 1950's".

The "devastating effects" of the Cultural Revolution were far greater than the delegates had anticipated. "How terribly deep and damaging were the wounds they dealt themselves," said Dr. Earp. "I think that Chairman Mao had the feeling that the young had had it too easy: here was a generation that had grown up without struggling, without the Long March. Mao never liked 'intellectuals'; they made him uneasy

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and suspicious." In his official report on the China visit, Dr. Earp made these further observations:

"Chinese officialdom makes no attempt to hide this (the disaster that was the revolution), blaming present circumstances upon the machinations of the Gang of Four and their distortion of the teachings of Chairman Mao Tse-tung. The rehabilitation of the universities is now acknowledged to be a matter of very high priority. Chinese intellectuals, we were told by the vice-minister, are good intellectuals and make great efforts to learn the works of Chairman Mao. By now most of them are products of the post-revolutionary period and the new interpretation is that they are a force that can be relied upon.

"The extent of the devastation was perhaps brought home most dramatically at Fudan University in Shanghai, 'two and a half years and one day since the downfall of the Gang of Four'. The latter had sought to make it a show window of the new radicalism, in which the only faculty would be that of 'struggling against the capitalists rodents'. The homes of 5,000 members of the university had been searched and some 800 had been severely persecuted; 36 had lost their lives and others were crippled or bed-ridden as a result of beatings. The president, an elderly and distinguished mathematician who spoke to us, had been branded 'a reactionary academic authority' and was forced to labor on the Shanghai docks."

An "opening-up" is definitely taking place, Dr. Earp said. "There is a greater relaxation of restraints; self-expression is possible, as is political dissent." Yet the people who have "just survived the Cultural Revolution and the Great Leap Forward" are naturally apprehensive about the future. Who will succeed the present leaders, and, will a change in authorities precipitate another major policy shift? Most important of all, wonders Alan Earp, "As the Chinese gain wider experience with different standards of living, will they remain content with their present standards?"

Backstage at the sea-ment pond

In construction site trailer No. 1, one wall is dominated by a detailed master schedule. Across the top, the grid allows for every day of every month from late last June through to May 1980. Along the side is an exhaustive list of every and any task connected with the project — from evaluating the site and clearing the topsoil through to testing the filters and polishing the floors.

The 'project' is Brock's swimming pool complex, a \$3,125,000 addition to the Physical Education centre that has been planned, off and on, since 1967. Designed by Moffat, Moffat and Kinoshita (the centre's original architects), the swimming complex will feature an eight lane, 50 metre pool (167 by 60 feet) for recreational, instructional, and competitive swimming and diving. A hydraulic floor in the shallow end will make the facility accessible to children, non-swimmers, and the handicapped; the movable bottom will adjust the depth of water from zero to five feet.

The trailer, one of two on the site, belongs to Elrose Construction, a Toronto company that won the contract on the basis of a \$2,638,000 bid. Putting together just the right bid is a very complex procedure, explained project manager Neil Owens. It usually takes a month to prepare, and represents a careful assessment of material and labor costs, time, inflation, "and the competition". With a public tender such as Brock's pool, names of those firms vying for the project are usually published in 'the trades', so that sub-contractors may offer their services for particular facets of the job.

"Elrose exercises total control over the project," said Owens, who is also the firm's Ontario division vice president. "We had our choice of all the 'subs' except for the people who will actually be building the pool." For that specialized task, the architects chose Canada Gunite.

To a potential user, the pool is a long-awaited Olympic-sized wonder. To Neil Owens, however, it is an average-sized project with a fairly basic design. "The only unusual thing is the hydraulic floor," he commented. That, and the geology of the Niagara escarpment. Now about four weeks behind schedule, construction has undergone "a few setbacks" because of the amount and quality of rock they encountered. "We excavated so far and then hit a type of rock we hadn't expected," Owens said. According to the topography of the land, they had to dig up to eight or ten feet and then blast another ten. Some 1500 cubic yards of stone were removed, estimated project superintendent Earl

Spencer.

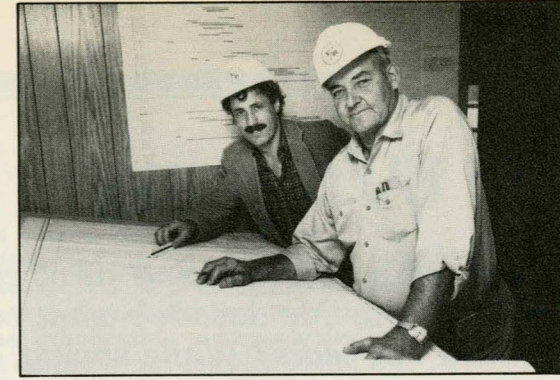
Both men agree that the next major hurdle is to have the external structure finished before winter sets in. "We'll have it closed in by Christmas," said Owens. The steel roof is scheduled for erection beginning the middle of October; two weeks of steel work and two weeks of roofing are involved. Protection and heating costs can certainly tax a contractor, Owens commented, "But you can't really budget for winter because you don't know how severe it will be."

"The critical point is when we get freezing weather," Mr. Spencer elaborated, "especially when the high for the day is 20 degrees (F) and the low at night is 10." After a certain date, all water used in mixing concrete is heated at the plant. The challenge comes in trying to protect the mixture from the frigid air. Tarps are used for the poured forms, and inside, propane space heaters to warm the structure and ensure proper concrete curing.

Original architectural and engineering plans for a project are "reasonably detailed", Mr. Owens said, but contractors also rely on 'shop drawings' prepared at each phase of construction. Testing is another on-going process.

"There's testing throughout a project," he pointed out, and a variety of inspections and re-inspections. For example, an independent lab appointed by the architects monitors the quality of materials. "When we pour concrete, they come and take a sample of what we poured, and then, back at their lab, test its strength." Because this will be a public facility, the department of health is also involved.

"We can't just throw something up and then say, here it is," Owens said jokingly. He too has heard the 'tower is sinking' myth, but will have nothing of it: "The pool is built on rock, and subsequently we don't anticipate any sinkage." With any structure built on soil, "some settling is expected", he added. "The architects would have designed the footings so that the structure



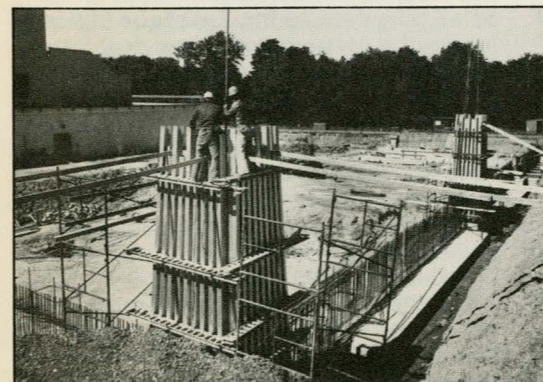
Neil Owens (left) and Earl Spencer consulting one of many sets of blueprints.

would sink uniformly."

Even pools come with a one year warranty — "on anything that might go wrong" with materials or equipment. At the time that the complex celebrates its first birthday, it will be thoroughly inspected once again. If a flaw is found, promised Owens, "we'll get our sub-trades back in to repair it".

When the pool was put out to tender last spring, word came back to the University that the project was considered to be 'a plum' by the bidders. The construction boom has indeed peaked in southern Ontario, Owens said; the Eaton Centre extension was the last major project in downtown Toronto. Other Elrose Ontario projects include civic centres, arenas, and (perhaps surprisingly) public and secondary schools. Their stationery, however, mentions two offices — one in Scarborough, and one in Qatar. In conjunction with several other Canadian firms, Elrose is involved in the construction of hotels in Rhodes and Damascus, and a series of public buildings in Doha, Qatar. The Middle East is not without its problems, though, and Owens acknowledged that "the president is a little disillusioned because of all the uncertainty".

Back at our cement pond, optimism continues to grow as the pool becomes a physical reality. Certainly by early summer, the 550,000 (U.S.) gallons of water will be in place, and at least a capacity crowd of 528 swimmers will be ready and willing to test the complex's splashability. The official opening has yet to be scheduled, but you can be sure it will be one date Neil Owens, Earl Spencer, and a lot of happy Brock people won't miss.



What will the 80's bring?

New decade, new leaves to turn over? Having survived the changes and vicissitudes of the 'Me decade', what can we look forward to in the next ten years? While shying away from theatrical predictions (World To End, Experts Say), our contributors address what they feel will be among the major issues, ideas, and dilemmas of the 1980's.

Future Schlock, or, The Arts

Maurice Yacowar
Drama and Film Studies

The future lies ahead. But we won't know what part was the lie until it's come, gone and done been analyzed by the historians of the future. Be that as it may — and it will — any reasonable, balanced judgement must waver between the blackest depths of despair and a sliver of hope that maybe things won't be so bad after all.

The population pattern that threatens the school system with vacant seats where vacant minds used to sit may have a happy effect on our popular music. As the dominant adolescent market loses its power, the industry will redirect itself to the larger, older audience, the rising executive class who bought "yummy yummy yummy I got love in my tummy". (Nostalgia freaks will turn to the good old happy 70's. Elvis Presley will retain his historical reverence but the critical attention will be lavished on the more talented luminaries that his showmanship and longevity eclipsed: Chuck Berry, Jerry Lee Lewis, and their unknown black R & B forerunners. Little Richard will reconvert.)

The LP will be replaced by a videodisc that plays the filmed performance or a psychedelic counterpoint on your tv while you hear the sound through your stereo. Today's LP's will sell as antique oddities to young classicists who wonder what we did with our eyes while we listened to the records in those primitive days.

Videodiscs will not be an important influence on film until the 90's, but the videotape revolution should sweep the country in the 80's. For a few hundred dollars everyone will have a machine that tapes a Gong Show rerun while they watch a new one on a different

channel. The present black-market in private film collections will be almost totally replaced by videotapes. But private film-tape collections will not hurt the film and TV industry any more than the tape recorder and radio hurt concerts or lending libraries publishing.

TV will be improved by the video threat. For networks will realize they cannot throw up crud just to compete with crud on other networks. With video tapes supplying a quality alternative to what's telecast, the quality of new programming will have to be raised. Indeed networks will have to aim for programs that people will want to tape and replay, in order to keep their clout with advertisers.

Film will remain the most powerful art form in the world. It will also keep its Janus nature, with one face sneering at the gutter of *Hots* and *King Frat* while another peers heavenward with films that stir the soul and exalt the senses. Oodles for everyone.

In film as in the other arts there will remain the tension between the representational and the non-representational spirits. In the visual arts this is expressed by the increasingly explicit treatment of the fleshly life and the increasingly abstract expression of the mind.

All in all, the 80's will grow out of the 70's, extending, inflecting, tempering, or reversing what we least notice in what's around us now. But alas, the human possibility of excitement and expansion by the arts will remain restricted by the foolish forces of night. Mrs. Grundy, Rev. Bowdler, the Fascist censors; there will always be the attempt to sustain ignorance, inexperience, blindness, prejudice, and thoughtlessness wherever there is a threat of growth. In the ignoble tradition of Newspeak, the group determined to return us to the Dark Ages will call itself Renaissance; for they believe darkness to illuminate and they seem invigorated by the deathly and dull. And so it goes.

A shift in the Canadian political scene

William Matheson, dean
Division of Social Sciences

Professor Frank Underhill, writing in 1946, admiringly quoted one of his teachers who had commented that: "... our Canadian history is as dull as dish water and our politics is full of it". It is unlikely that the same comment could be made about Canada in the 1970's — what with the flamboyancy of Pierre Trudeau, the fulminations of John Diefenbaker, the election of the PQ government in Quebec, the intensification of Western alienation, and the victory of the Progressive Conservatives in the 1979 federal election.

But what will the 1980's bring? One is hesitant about borrowing Mr. King's crystal ball and making predictions but one can safely say that most of our problems will stay with us but their intensity will shift as will the techniques politicians use to deal with them. The results of the referendum in Quebec on the question of "Sovereignty-Association" will be inconclusive because of the vague wording of the question put before the voters. The PQ party will likely lose power in Quebec to the Liberals and Mr. Ryan will prove to be as relentless as Mr. Levesque in keeping on the pressure for a new deal for French Canadians in Canada. But one suspects that the new *locus* of stress on the Canadian federal system will be the West, especially as Alberta fights to keep the revenue derived from oil production. The lack of national unity in Canada will continue to plague federal politicians as they try to govern in an increasingly decentralized country.

One can also anticipate changes in our party system. It is quite possible that one of the two major political parties will disappear on the federal level as

a mildly left-right polarization develops. The Liberals will elect a new leader — and given the scarcity of attractive leadership candidates from outside of Quebec, the new leader could well be another French Canadian, (might one suggest the fluently bilingual Jean-Luc Pepin) who will have his work cut out for him as he attempts to restore his party to the status of a truly national one. On the other hand, Mr. Clark, who appears to be developing into the Louis St. Laurent/chairman of the board type of politician, could well find that this style of leadership is not attractive to Canadians, with disastrous results for him and his party. The NDP must contend with the growing strength of so-called "neo-conservatism", a movement which will likely soon decline as its largely middle class supporters learn that a reduction in government spending and employment has a far more adverse effect on them than they expected.

Contemporary marriage: something old, something new

Mel Perlman
Sociology

The 80's will bring forth a number of conflicts concerning the Canadian family. Foremost among these will be the meaning and purpose of marriage and the family. Traditionally, marriage was a sacred phenomenon and/or a social obligation, centering on the church, kin group, community. The most recent meaning suggests that families and the marital relationship exist for the individual. Each person is responsible for his or her own success or failure, and marital success stems less from permanence than from a meaningful dynamic interaction of persons, even if the partners change.

This individualistic meaning of marriage is strongly associated with a pleasure-seeking philosophy, and is partly responsible for a series of inter-related current trends: increases in sexual permissiveness, venereal disease, abortion, illegitimate births, child abuse, teen-age marriages, abused wives, divorces, remarriages, voluntary childlessness, and questioning the necessity of limiting sexual relations to marriage (even after one is married). Additional trends include alternate lifestyles such as living together, communal families, triads, homosexual marriages, single-parent families, etc. None of these alternate lifestyles, however, is likely, in the

80's or even beyond, to replace for the majority the marital relationship which, although in need of modification, continues to provide the long-term emotional gratification so strongly desired and needed in our complex world. The necessary modifications concern changes in sex roles for which we now have a beginning.

Indeed, the above trends are also related to this fundamental, positive social change of our time, namely, the change in sex roles through which women are slowly gaining greater equality with men. Not until this basic change has proceeded much farther are we likely to see any decrease in the negative consequences of the individualistic meaning of marriage — which I expect to reach an extreme in the 80's. I hope the 80's will also bring a return (and I already see some signs of such a return) to some of the positive aspects of the traditional meanings of marriage which — when combined with the positive aspects of the individualistic meaning so as to form a new synthesis — will provide the foundation for both lasting and meaningful marital and family relationships. In my view, such relationships can only be achieved once women have indeed gained equal status with men, who in turn have adjusted to their new sex roles as equal partners. Whether this will be achieved in the 80's seems therefore the key question.

Challenges facing the life sciences

Donald Ursino
Biological Sciences

Rather than forecast what the 80's will bring, I shall take the more cautious approach of identifying areas where extensive efforts in research — both basic and applied — are likely to be directed. Restrictive funding for research and society's current orientation towards 'relevancy' will continue to make agricultural productivity, medicine and

health, and environmental quality the dominant themes.

As the world's population continues to increase, agriculture will remain under pressure to improve the yield and nutritional value of crops. Improvements will undoubtedly occur as we increase our knowledge of photosynthesis, biological nitrogen fixation, plant cell hybridization and breeding, and plant responses to abiotic (pollutants, acid rain) and biotic (disease) stresses. However the real challenge will lie in achieving these goals while simultaneously reducing the environmental insults which contemporary agriculture in developed countries contributes. Reducing our dependency on fertilizers and biocides, and on high energy-consuming cultural practices, will not come easily. Furthermore, the threats provided by over-grazing, salination, deforestation, erosion, and desertification are very real indeed. The most serious problem, ultimately, may not be "can we produce more food?" but rather, "what will be the environmental consequences of attempting to do so?"

In the area of medicine, cures for cancer, heart disease, venereal disease, and diabetes will continue to be sought in the 80's, primarily through chemotherapy. It is hoped that in the next decade the public will increasingly realize that these 'diseases' are to a large extent social or lifestyle diseases initiated or aggravated through the abuses of poor nutrition, insufficient exercise, unhealthy environments, and

The possibilities of the arts will remain restricted by the foolish forces of night.

What will be the environmental consequences of future scientific research?

careless behavior, and that they can only be dealt with effectively through preventive measures.

People will continue to monitor the 'quality' of their surroundings, identifying more of those components which have deleterious effects on plants and animals. The list of mutagenic and carcinogenic compounds in our environment, including our food supplies, is likely to increase substantially. Although some biological research in the 80's will be directed at reducing the effects of our insults against the environment, again the lasting solutions will only come through prevention based on a better understanding of the complexity of our natural environment and greater recognition of man as a dependent and vulnerable component of this environment. More research is likely to be directed at developing our renewable resources (biomass) as fuel sources, and exploring the biological resources — both real and potential — in the oceans and arctic regions.

Concern for the quality of human life will continue to be expressed through research leading to more effective means of birth control. As well, concern for the quality of new-born life will also become more widespread as our knowledge and recognition of genetic disorders is increased, and as the techniques for prenatal diagnosis and genetic engineering become better developed and more widely available.

Through the techniques of cell hybridization and recombinant DNA genetics, we are likely to realize the development of new species with particular value to agriculture and medicine. In the 80's we will probably come closer to commercially feasible 'in-vitro' photosynthesis, and further our understanding of the aging processes in biological organisms. We are also likely to be better informed regarding the extent to which our behavior is genetically programmed.

The scope of the life sciences is indeed diverse and the challenges facing this discipline in the 80's are many. The potential for exciting discoveries remains

high. However, with increasing knowledge and the development of more sophisticated techniques for the manipulation of biological systems, the life sciences will continue to challenge traditional thinking and established values, and will present society with serious moral dilemmas and value conflicts. This has already been witnessed in the controversies surrounding abortion and euthanasia. Although biologists will continue to probe the characteristics of life and will continue to diagnose and treat the biological ills of society, we must hope that the 80's will bring about a greater public awareness that the real causes are not in fact biological. In my judgement, the lasting solutions are likely to come only through an expanded sense of reality; a clearer definition of our real needs — material, biological, and spiritual; a knowledge and pride in the creative activities of the past; a compassion for contemporary life in all its diversity; and a sense of responsibility towards future generations as yet unborn.

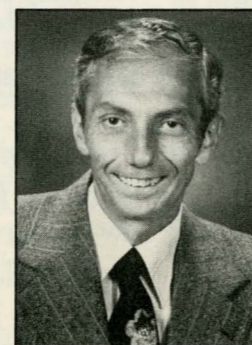
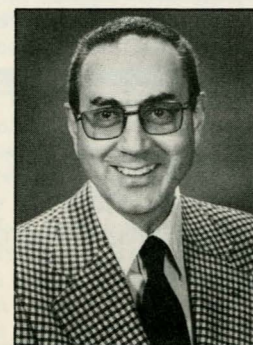
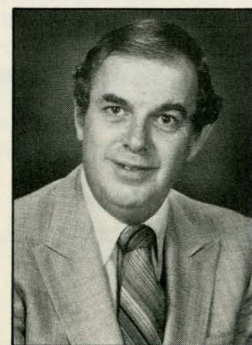
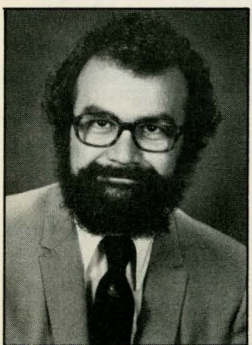
Troubled foreign affairs

Dan Madar
Politics

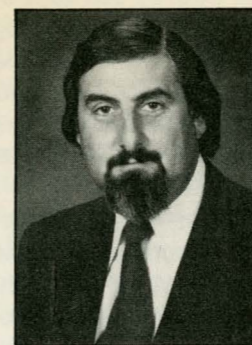
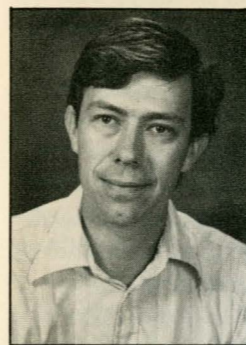
People who venture statements about the future, particularly in realms where cause-effect relationships are only dimly understood, always do well first to establish a suitably fallible note of contingency. This is especially so for the international future. The factors in play are so numerous and complexly inter-related that defining — much less projecting — international trends is tenuous and full of potential surprises. Remember books like *The Population Bomb* of a few years back? They pro-

jected rampant human fertility and evoked sombre images of the future, especially at mealtime. But the rate of population growth in the world overall is starting to slow down, and at a surprising rate. With that example in mind, what current trends might one descry?

One cluster, involving relations between Western industrial and developing nations, is particularly interesting. As the costs of energy, industrial goods, and food rise, a number of developing countries are having to borrow heavily in the industrial nations, often from commercial banks. The trend begets a strange interdependence. The borrowing countries depend on continued loans, and the industrial countries bank on repayment to avoid the alarming possibility of a massive default. As well, industrial countries are becoming increasingly reliant on commodities from the developing world. Tight economic realities and the example of OPEC may be fostering a pragmatic sense of both grievance and opportunity among the developing countries. At the same time, however, their relations among themselves are becoming increasingly diverse as a result of emerging economic and political differences. One analyst saw the recent Havana conference (for non-aligned nations) as the swan song of non-alignment as any unifying orientation. Militarization (arms spending in the Third World has risen 66 per cent in the last decade) and great-power competition, with the USSR increasingly able to play an active role, are related trends. Together, they portend increasing complexity — and unpredictability.



Maurice Yacowar
William Matheson
Mel Perlman
Donald Ursino



Dan Madar
Lewis Soroka
Stan Sadava
Peter Atherton

Persisting economic problems

Lewis Soroka
Economics

The problem with predicting the 1980's is that no one has yet figured out just what went wrong in the 1970's. But if forced to bet on a path, I would put two bucks (no more) on the one we have just staggered along. All the dull old problems — inflation, unemployment, energy — are likely to remain features of the landscape for some time to come. They will, however, create some new pressures. "Continental" energy programs — doublespeak for increased exports of natural gas to the U.S. — remain controversial, but the issue is becoming more immediate. (If John Connally becomes the next U.S. President, Albertans could be carrying American passports by 1984.) Tar sands, solar energy, pyramid power or methane gas from moose hooves offer little cause for energy optimism; rather, they are signs that conventional energy has become so expensive that even high-cost alternatives are feasible.

Another recent trend, the uttering of "baby" as a four letter word, has helped produce a decline in the birth rate which will, by the end of the next decade, make us all very nervous about pensions. All the RRSP's in the world are not worth much if we have a labor force of three trying to produce goods and services for millions of gray-haired swingers.

Continuing economic uncertainty will, however, continue to nourish a rapidly-growing industry: advice on how to cope. There will be many more books explaining why you must/must not buy gold/real estate/stocks/art/pork bellies, and how a new depression is/is not inevitable. Obviously, of course, the best way to keep pace with your Chargex bill is to write such a book. But if literature fails you, is there anything else you can do? Certainly. Work hard, brush after every meal, and make babies.

Mixed blessings in an ambiguous world

Stan Sadava
Psychology

What will become of the so-called "Me generation"? Revolting taxpayers want mortgage deductibility and government services — but not day care or welfare. Looking out for No. 1 becomes an exercise in "group think", all seeking "personal growth". The cry for help is not heard from one's embattled place in the gasoline line-up.

Despite scarcity and lowered expectations, the "Me decade" should become as obsolete as big cars, big business or big government. As we become aware of our common fate, cooperation and sharing may become as fashionable as Perrier or weekend encounters. We may discover that the real, lasting human ties of family and friendship are necessary for human existence, not just "human potential". Marriage won't become easier but we'll persist. The aging "baby boom" generation may learn to appreciate children and the elderly. As friendships become less interchangeable, we may resist corporate orders to relocate our homes.

We're also in danger. We just might submerge our rampant narcissism and cynicism in the Cause and the Leader. Weary of our confusing, ambiguous world, we'll crave "The Answer" — and someone to assure us that there is an answer. Under the stress of information overload and diminished expectancies, we may be seduced by the simplicity of a quick fix and an authoritarian will. Like Weimar, Germany, the people of Jonestown chose to escape the burden of freedom.

Psychology will have to question that peculiarly American ideal of rugged, self-contained individualism. Our focus will shift to issues of cooperation, community, tolerance of ambiguity and continuity in human relationships. As ever, psychology will be a powerful influence — if a mixed blessing.

Educational common sense

Peter Atherton, dean
College of Education

It would appear, superficially, that the current pessimism with which the public school system is affected would be reflected in the outlook for teachers' colleges in the 1980's. Such is not necessarily the case.

A reduction in the demand for new teachers has had the effect of reducing sharply the number of students entering the teacher training system of Ontario. However, with nearly 100,000 teachers in the province's school system, there will continue to be some demand for new instructors to take into account natural attrition. In addition, elementary school enrolments are expected to climb somewhat in the 1980's. Programs such as Brock's, which specialize in the preparation of elementary school teachers, are likely to continue to attract a substantial number of students.

Generally speaking, it is imperative that teachers' colleges adopt an aggressive attitude — in the sense that they take as their mission the totality of the education enterprise, and not simply the narrow concept of teacher training, pre-service. To this end, a second important thrust in the next decade will be the development of continuing studies programs designed to meet teachers' needs for increased degrees of specialization. (Brock has already begun to diversify its offerings to meet these needs.)

Although the challenges inherent in programs of this sort will make tremendous demands on the adaptability of faculty, they will create an opportunity for innovative approaches to both programming and instructional techniques.

Through the literary looking glass



Would you believe, *Winnie-the-Pooh* on a university reading list? Along with *Charlotte's Web*, *A Wizard of Earthsea*, and *Catcher in the Rye*? Spend some time in Pat Green's classroom and you will (re)discover the inviting worlds of young people's literature.

"For a long time," she says, "they've been doing a lot of things with children's literature in teachers' colleges. But they've never stopped to think about the literary value of the works."

The popularity of her first year Extra-departmental Studies course is indicative of a growing interest in the 'stuff that children's books are made of. "We're not studying reading, or children, or how to teach reading to children," Mrs. Green explains. "We're studying the books — as objects of criticism, rather than 'this story has such and such a word count'.

"As an academic discipline, it's just beginning. In fact, it's hardly past the seedling stages." A novel like

W.O. Mitchell's *Who Has Seen the Wind*, for example, "is becoming a classic, but so very little has been written about it".

Some people affectionately refer to the course as "kiddie's lit", but the title belies a reading program that encompasses everything from nursery rhymes to "books as sophisticated as *Watership Down* and *Catcher in the Rye*". Mrs. Green's goal is to expose her students to a variety of genres and themes: fairy tales and fantasy, adventure stories, realistic novels, 'contemporary problem' books, and animal fables and stories. Children's poetry is also dealt with briefly. Yet it's much more than simply picking out favorite old books that would be fun to read again. Rites of passage, how to deal with death, the nature of secrets, and the search for personal identity are just some of the themes explored; developing the skills of the critical reader is equally challenging.

Some parents and teachers enrol in

the course out of a sense of duty, but are very quickly caught up in the intricacies of subject and technique. "There's as much food for thought in young people's books as in adults' books," she points out. "They can be just as complex."

"You can go back and re-read a book and discover the source of all kinds of ideas you've been carrying around."

The tendency is to underestimate a story's influence; we forget (tv notwithstanding) that books can be a major source of our opinions and prejudices. "Each child takes what he or she needs out of a work," Mrs. Green says. "Kids may be affected in many different ways by what they read, although at a subconscious level. An adult is much more aware of what a book is going to do to him or her.

"Someone's got to know what's inside," she insists. "The adult must be able to talk intelligently to the child about the work."



Analogies between sound reading and eating habits are inevitable. "Children take in good food and junk food," says Pat Green, "just as they read good books and 'junk' books. Their conscious minds may not be aware that something is good or bad, but subconsciously they're absorbing an awful lot." Although a limited quantity of junk books won't be detrimental, a steady diet of mediocre or trashy stories could stunt a child's intellectual and imaginative growth.

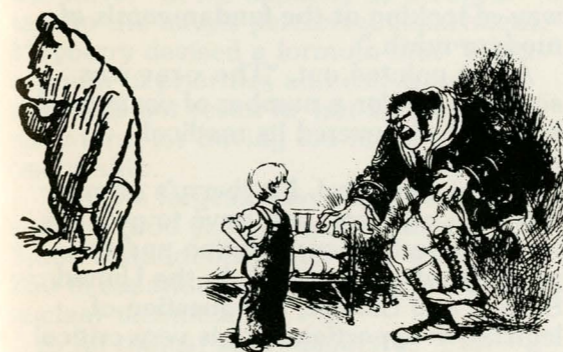
"I'd try to get kids away from books written by a syndicate, or by a formula — like the Hardy Boys. They're not going to warp their little minds, but there are so many *better* books available." In the realm of fairytales, she recommends, "Don't read the Disney-ed versions. Get a good copy of plain old Grimms or Perrault."

As a mother of two grown children (one of whom recently made her a very proud grandmother), Pat Green knows

all too well the tendency to hand children "the same things we read as kids". Although some stories are never out of date, it is essential to keep abreast of "the many good *new* books", such as *Tuck Everlasting* by Natalie Babbitt, Mordecai Richler's *Jacob Two-Two Meets the Hooded Fang*, and the works of E.L. Konigsburg.

Learn the inner workings of young people's literature, she maintains, and you will be able to make a lot of helpful recommendations. "If you see a child reading one particular kind of book, then you'll have some idea about what else to recommend. For example, if a child enjoys adventure stories, you can suggest a book that has the same elements, but perhaps is better written.

"Once a parent understands the books themselves, then he or she will know what to bring to the child's attention."



Reflections of a story-hour veteran

"I think everybody has a list of good books for children — all except Dr. Spock," commented Nancy Geddie, who has worked in the St. Catharines library system. "But we must realize that some of the books that appeal to adults don't necessarily appeal to all children."

"I lost most of my idealism about reading working in a library," she said ruefully, then added, "It's not all that bad, but it can be discouraging."

There are so many different media competing for a child's attention that books are often left by the wayside. Young people today have "pretty sophisticated tastes," she observed; a thoughtful parent or teacher should try and ensure "they're not exposed to too much, too soon. We forget that in some ways, they're just kids".

"The hardest kids to help are ages 9 to 13. They are reading by themselves,

but not what their parents want them to read — on principle." Divorce, drugs, the problems of growing up — these are among the favorite subjects; the popularity of certain titles or authors is very much a "follow-the-leader" phenomenon.

"Just don't assume they are reading enough in school," she cautioned. Take the time to learn about the adolescent's preferences, and be prepared with tactful suggestions.

As the veteran of many a story hour says, "The library is an excellent resource, but not enough people take advantage of it. Librarians are just itching to help mothers and young people — if only they would ask."

For children under five years of age, Mrs. Geddie recommends a wide range of story and picture books that includes established classics and contemporary gems. "If you can get kids interested in the first Narnia tales (by C.S. Lewis), then they're likely to read them all," she



says. "Brian Weldsmith's books are just beautiful, and kids really like them." Authors such as Jack Ezra Keats and Dennis Lee are entertaining and informative, as are the works of writer/illustrator Maurice Sendak.

... And back home again

If there is some final advice about adventures in the land of hobbits, heroes, and troubled teens, it lies in both women's insistence that adults have very definite roles to play in a child's literary development.

"It's very important to establish a reading tradition in the home," says Nancy Geddie. "Have books around the house, and make sure you set an example by reading regularly yourself, and reading to your children."

"Use common sense," Pat Green concludes. "And remember to be enthusiastic."

The apostle's creed for humane mathematics

Jim Mayberry has a lot of problems. And he couldn't be happier. This professor is the kind of scientist we don't hear too much about — the mathematician. Without benefit of the flashy labs and impressive equipment, mathematical research is often overlooked. Or, its significance is obscured when a new theorem or invention is unveiled. A conversation with Prof. Mayberry does a lot to restore your perspective.

There are three kinds of mathematics, says Mayberry, and each has as its goal the need "to solve problems". Applied mathematics is "being done for the sake of its applications to non-mathematical problems". One hundred years ago, most applications found their way into physics labs. Today, statistics has evolved as an entity unto itself, and practical computational skills have become an integral part of life for the social scientist and artist alike.

You just have to pick up a newspaper, Mayberry says. "Tomorrow's mathematical problems can be found in every column."

Those who are fascinated by the imaginative depth of mathematical concepts, and the elegant precision of its logic, count themselves as pure mathematicians. Math for math's sake can be rewarding, "sometimes, just because of an aesthetic sense"; yet Mayberry, an 'apostle of applied mathematics', says that the potential uses for abstract ideas should never be ignored.

"The pure mathematician has the great luxury that when he has a tool that works, he can look around for a problem to which the tool could be applied." Sometimes, however, he or she

can look too hard, as this classic story illustrates:

A pure mathematician was given a screwdriver for Christmas. After his wife explained how it worked, the mathematician went around using it all day, tightening every screw in the house. He went to bed a very happy man. The next morning, the wife woke up to find her husband filing a slot in the head of every nail in the house.

That shows a pure mathematician "at his best and at his worst" Mayberry laughed. "Many ridiculous things are done in the name of mathematics."

The realm of what's possible and impossible (and just plain fun) is usually left to recreational mathematics. "Until 1975, there was no argument that this type of math was entertaining — but was thought to be of no importance in itself." Then a Cambridge professor published a book about new areas of game theory. "Suddenly," Mayberry recalled, "we found out that looking at generalizations about games is a new way of looking at the fundamentals of modern math."

As he pointed out, "The x-ray was simply a toy for a number of years until someone discovered its medical applications."

To describe Prof. Mayberry's current research problem, you have to go back to the American constitution and the principle of 'rep by pop'. In the United States, and Europe, the question of legislative apportionment is very critical. "Many legislative bodies are prescribed so that the number of delegates shall be in proportion to the population," he explained. Dividing up a fixed number of seats, however, involves some thorny questions a calculator just can't answer — like what do you do with the fractions. When working out the proportions of seats per state, there are no 'whole' numbers.

"The problem of legislative apportionment is how to 'round off' those arithmetically-computed fractions. When you add constraints like a minimum number of representatives from each state, you have to do something much more complicated."

Before a new system of apportionment was adopted in the U.S. in 1941, more than 40 different formulae had been brought before Congress. Unfortunately, the quota method chosen is not without flaws itself, as the team of Balinski and Young first pointed out in 1971. "The accepted procedure was capable of producing results very far away from the original quotas," said Prof. Mayberry. Using projected population figures, Balinski and Young, and then Mayberry,

showed how a large state, such as New York, could eventually end up with fewer seats in the house than it deserved.

"It's been a lively area of mathematical research for the last five years," he commented. "We have found that you can't have perfect answers."

But you can take answers from one problem and skillfully apply them to another. With an enlisted force of more than 450,000 people, the U.S. Navy needed a consistent method of allocating people to jobs, and people and jobs to specific installations. What they had, actually, was another example of an apportionment question.

"Apparently, I was the first person to notice that the math for both problems was the same," Mayberry explained.

"The problem was to more honestly forecast — apart from where they would like to be — where people should be sent. We are currently installing a system that will also enable the navy to project the actual number of people they will have." In his capacity as a consultant to the navy's personnel department, Mayberry devised a formula that "takes account of priorities and constraints", and does not result in 'hot-bunking', a navy term for having too many men on board ship.

"For the largest specialties, there are some 40,000 yeomen to be allocated to 3,000 installations. There are more than 250 occupational codes, from clerks to nuclear technicians."

In all things, says Mayberry, "Efficiency is important: computational efficiency and mathematical effectiveness."

Ineffective teaching is the only mathematical problem that Jim Mayberry cannot abide. "A large number of people are convinced that math is something they cannot do. Partly because, in school, there are always students who are quite lost. It's easier for the teachers, for the students who don't do it well, and the students who do do it well, to keep up this fiction."

"Most people are convinced that math is something foreign to them — they do not need it, they do not use it. For them, math is something you do in school — and then, thank goodness, that's the end of it."

"The inhabitants of our schools, generally, have never thought that mathematics may be of some value. They see math as something that is hard and terrible and difficult and shaming."

So much of mathematics is either right or wrong that unsympathetic teachers try to use their 'correctness' to assert authority in a classroom. "Mathematics becomes a tool in the teacher's

psychological warfare," Mayberry observed. "It is an easy way out for teachers to maintain control."

"There are a great many students who have learned to check their brains before going into a mathematics class."

What Mayberry would like to see happen, both in the public schools and in some university classrooms, is for teachers and students alike to take the time to consider both sides of the mathematical coin. "A math problem is like a one-way mirror. Before you perceive the solution, you can't figure out the problem. After it's solved, you can't remember when there was a problem."

Whether you are juggling seats in Congress or the intricacies of six times two, "It is very important to remember what it felt like before you knew the solution."



Pomp and circumstances



The pageant that is convocation owes a large aesthetic debt to the draughty halls of medieval universities.

Headcovers and topcoats once donned for warmth in the Middle Ages have evolved into the largely symbolic hoods and gowns worn today. Whether academic dress has its roots in chiefly ecclesiastical or secular practices is not clear. We do know, however, that the inhabitants of European monasteries were wearing special gowns in the twelfth century, and that the members of university communities at Oxford and Cambridge followed suit in 1249 and 1257 respectively. A University of Coimbra statute, dated 1321, required that all "doctors, licentiates, and bachelors" wear gowns. In the second half of the fourteenth century, the statutes of certain British colleges forbade "excess in apparel" and prescribed instead sober long robes.

At Canterbury, where fur was used to combat the damp, senior students chose light grey or white fleece or fur, and the distinction between bachelor's and master's robes was established. Each institution developed rules governing the color, shape, and fabric of academic dress; Oxford instituted a policy in 1426 whereby students had to change the linings of their hoods to reflect the seasons.

The basic gown is an open-fronted garment, made of stuff or silk, and yoked at the back. Undergraduate gowns are traditionally the shortest, usually reaching just below the knee. (As in all things, ornamentation becomes less elaborate the lower the wearer's position is in the academic hierarchy.) Sleeves are one of the big things in academic costumes — their distinctive shapes and lengths have been variously used to indicate rank, college, and academic standing. Brock's undergraduate gown follows the Oxford BA pattern, with long pointed sleeves. Unlike the customary black European robes (the Scots are decidedly un-dour, with scarlet), our gowns are made of "aegean blue" stuff. The chancellor, on the other hand, has a robe of blue silk, trimmed with gold lace, and a cap to match; and the vice chancellor (president) is assigned a gown of charcoal grey figured silk, embroidered with silver lace, that has split sleeves and a turned back collar.

When medieval monks and scholars were not wearing their head coverings, the hoods hung down their backs over the tippets, short capes reaching to the elbow. Early fourteenth century hoods also consisted of a long laripipe or tail.

When the hood was in use, the tail was

wound around the neck for extra warmth. A century later, the tail was transformed into a separate scarf, which many universities still retain. The joint faculty/student committee that designed Brock's academic dress in 1967 chose a full scarlet hood lined with navy blue. Inset near the lower part of the cowl are three horizontal bars of old gold, 'in a fashion which suggests the military uniforms of the eighteenth and nineteenth centuries'.

Oxford and Cambridge developed unique systems of academic costume that were adapted and modified by later British, colonial, and Commonwealth universities. The proliferation of institutions, however, eventually exhausted the range of styles and hood colors available. Academic dress was standardized in the United States in 1894 by the American Intercollegiate Commission. The resultant "intercollegiate code" was also adopted by most Canadian universities, including Brock.



Every bachelor's hood is 36 inches long; the master's, 42 inches; and the doctorate, 48. Hoods are bound with velvet or velveteen, the color of which signifies the wearer's degree. Inside the hood, the binding is half an inch wide. The outside width again depends on the degree: two inches for a bachelor's, three inches for a master's, and five for a doctorate. From the code, the following department colors were chosen: arts and humanities, *white*; business administration, *drab (olive green)*; education, *light blue*; physical education, *sage green*; science, *golden yellow*. Brock women wear soft blue velvet caps modelled after the Oxford headpiece. The men do not wear mortar boards.

For some people, convocation is an exercise in dress-up that they would just as soon avoid. For many others, though, it remains a colorful tradition that brings together the best of the past and the present.

Testing, one, two, three

by Thomas C. Wheeler

Although dealing with American statistics, the increasingly widespread use of multiple-choice tests in Canada makes this thought-provoking article very relevant to our situation. Anyone who has applied to law school, graduate business school — or taken Psych 190 — knows something of the problems described by Mr. Wheeler.

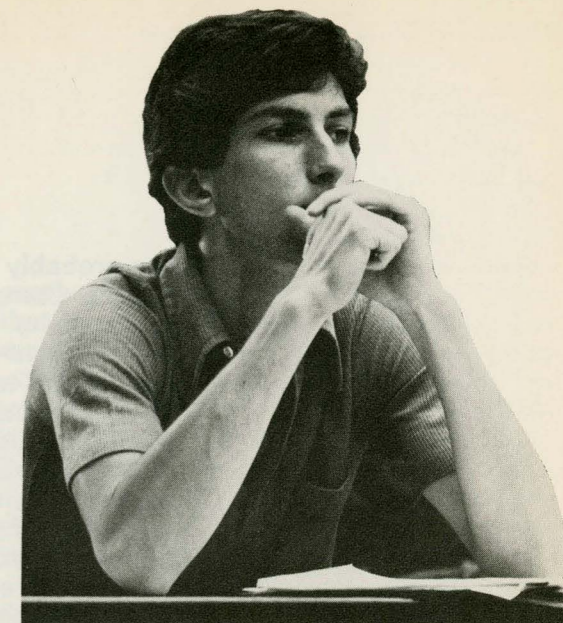
What today inhibits the writing of citizens, scholars and students? Americans, long vigorous and inventive in speech, object to the art of writing. Two out of three abilities expected from education — reading and writing — disintegrate as some insidious influence, thought by many to be television, captures succeeding generations of children.

In defense of literacy, every wordsmith has his or her own horror story to tell. In a scrawled note, a bright girl, not long out of high school, wished me a "Mary Christmas". An editor of a national weekly told me she would be wary of hiring a copy editor under 30, for fear of grammatical incompetence. A doctor, judging me physically fit and confiding a woe of his, deplored the inability of medical students he teaches to express themselves clearly in writing. An architect of my generation tells me that bright young architects he has hired cannot put together a coherent report. Although the young resent it, their elders utter more than the usual complaints of an older generation against the language of a new.

"This generation has grown up without learning concentration — you don't develop that by switching channels. What can teachers do but pander to the rapid alteration of mood and attention?" This view, from the chairman of an academic committee on literacy, puts the blame on television.

But an influence as devastating as television is the objective test system, introduced by higher learning — and now used in secondary education. Until the 1950's, students wrote essays in schools because they were expected to write essays on college entrance exams. But the university abandoned the essay requirement by adopting, a generation ago, the entirely objective test for admission, the Scholastic Aptitude Test (S A T).

Before World War II, the objective S A T had been a supplement to written achievement tests in various subjects. But when the S A T became dominant,



the achievement tests became objective, too, and also optional. When the university dropped the essay requirement, it failed to recognize the power of the system it launched. Once the college entrance exams were objective, secondary schools asked for less writing. Urged on by test manufacturers, high schools began to use objective tests both to prepare their students and for their own examinations. The university, by sanctioning the objective system, bears a terrible responsibility for the decline of writing in the United States.

Today, the test manufacturers — led by the Educational Testing Service (E T S) of Princeton, N.J. — are profiting from miseducation. E T S produces not only the S A T but a battery of tests used for secondary and graduate education. Although the tests have made writing seem unnecessary — although they have also damaged reading ability — they are too expensive to throw out or replace. Harmful though the tests are, the schools have submitted to a system that runs on its own power. Measuring students means measuring schools — according to the aggregate scores of the enrolled — and few schools dare drop out of the spiral of relative standing. Public schools are also tied to the tests by school boards demanding measurement.

Developed first for the army in World War I and widely used in World War II to test intelligence and ability, objective tests are gifts of war to civilian life. In the 25 years the S A T has been dominant, American education has been revolutionized. The marketplace has overturned the traditional foundations of learning — reading and writing — more completely than the efforts of any mechanistic theorist. Most Americans

are probably tested more than they are taught. Compositions, essay questions, term papers — vigorous thinking — all have yielded to one right answer out of four, boxes to be checked, blanks to be filled. Objective tests not only carry the prestige of being scientifically accurate — when they aren't — but also provide an easy way to handling the masses by machine. The results might have been predictable to any educational system that valued education. The national S A T verbal-aptitude scores have shown a steady decline over a 14-year period. If the scores show anything, they show how poor a judge teacher objective tests are. The American language — supple, imaginative and alive — has lost ground to the pretense of measurement. "Nobody ever cared about my writing" is a refrain I, as a teacher, have heard in several accents. After two decades of objective education, the "educationally disadvantaged" are not merely the poor and minority groups, but the supposedly well-educated and the well-to-do.

Many colleges now profess doubts about S A T scores and say that in admissions considerations high school grades and teacher recommendations are more important. One distinguished liberal arts college, Bowdoin College in Maine, found there was no correlation between high test scores and college performance. Finding the "productive value of standardized tests" questionable and test scores misleading, it has abandoned the test requirement for admission.

Echoing that point of view, New York's governor Hugh Carey signed legislation in July requiring that the public be given access to the tests. "The standardized tests are imprecise and open to potential misinterpretation," the governor said. "It must be . . . a candidate's right to have access to his results."

Beginning January 1, New York state students will be able to examine both their own tests and the answers. The testing services will also be required to disclose their research on the validity of the tests and to describe what the tests are supposed to measure and how to interpret the scores.

In 1978, for the first time, responding perhaps to criticism of the test, the College Entrance Examination Board

released a sample S A T exam to students registering for the College Boards. The test, it is often said, favors middle-class white students at the expense of minority groups. Certainly this is true. But middle-class blacks might do as well on it as their white counterparts. The S A T's tougher verbal questions can be conquered by informed guesswork, but often the correct answer depends on the sheer luck of the student's reading or experience. In a verbal section, the student is asked to "choose the world or phrase that is most nearly the *opposite* in meaning to the word in capital letters." One example is this:

WHET: (a) expire (b) heat (c) delay (d) slake (e) revise



A student who didn't know the meaning of *slake*, the right answer, could still do well in college. Even if he didn't know the meaning but knew the precise meaning of *whet*, he could get the right answer by process of elimination. On the accompanying answer sheet, E T S informs us that of students getting a verbal score above the median of 450 on this test, only 21 per cent settled for *slake*.

In an analogies section, in which the students is asked to "select the lettered pair that best express a relationship similar to that expressed in the original pair," come these pairs:

SWILL : SWINE ::
(a) roe : fish
(b) coop : poultry
(c) mutton : sheep
(d) pesticide : vermin
(e) fodder : cattle

If the student had read rural English novels or grown up on a farm, he would surely know what *swill* meant and make an instant connection with *fodder*. Only 28 per cent of the near-median scorers got E, the right answer. Since 450 is not a high S A T score, perhaps some poor farm boys succeeded where urban or suburban students failed.

To give the devil his due, it must be said that the S A T asks for an ability to

make fine distinctions, as in the analogy:

IMPREGNABLE : AGGRESSION ::

(a) imperfect : revision
(b) invincible : defense
(c) inequitable : criticism
(d) indivisible : separation
(e) immutable : preservation

Thirty per cent of the near-median scorers choose the right answer, D. Just as something is *impregnable* against *aggression*, so is something *indivisible* if *separation* is tried.

Vainly, E T S tries to measure writing ability objectively in a 30 minute part of the S A T called the Test of Standard Written English (T S W E). The test asks the student to spot the grammatical



errors in underlined sections of sentences; it also asks him to choose from among five possibilities the best way to phrase an underlined part. A student who can spot an error in an underlined section may still commit the same error in the frenzy of unaccustomed composition. Even if a student has a sure knowledge of grammar as shown on an objective test, the test still won't determine whether he can write an essay. For writing requires not only grammar but ideas and the ability to organize material. These abilities show up in actual writing. The test is in many ways an exercise in futility. The student's score is not counted in the S A T but sent to the college, supposedly to determine what level of freshman English the student should take. Good colleges will not use the score for placement purposes, as E T S recommends. Most colleges administer their own written essay exams to determine what level of composition course a student needs.

E T S does ask for a 250 word essay in one of the five annual offerings of the optional Achievement Tests in English Composition. But of the 1.4 million students who took the S A T in 1977-78, only 85,000 students wrote the essay. In the multiple-choice English Achievement Test, the student marks errors in "diction," "usage," "idiom," "wordiness,"

"sentence structure" and "metaphor" without ever demonstrating that he or she can avoid making such errors in his or her writing. Many good writers, students or not, may be unsure of academic terminology but write well out of their sense of language. That kind of talent would do poorly on the test.

The test encourages schools to teach primarily by terminology, since the final test asks for it. For example, the student must choose from several possibilities the right rephrasing of a sentence if a subordinate clause is changed to a participle, or if one sentence is changed to a clause. He is told, in effect, that writing is a juggling act, without purpose.

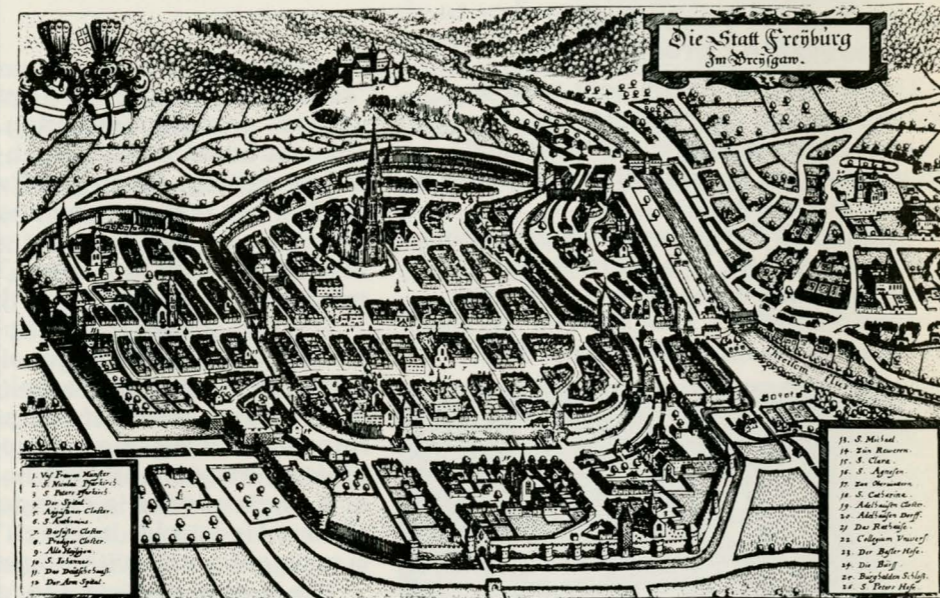
The testing services that dominate our educational system may be able to justify tests in mathematics, but they shouldn't be allowed to sap the strength from our language with objective tests in writing. If we are given another generation of tests, writing will become a rare art. The responsibility for salvaging writing falls to the American university, which instituted the objective tests for college admission 25 years ago and sanctioned their use throughout the school system.

The antidote is to restore writing requirements on college entrance exams. But the task is formidable: E T S has a vested interest in protecting its contracts; it is marshaling every "social science" argument it can in defense of existing tests and challenging the "scoring reliability" of essay tests. Justifying the multiple-choice approach, E T S declares that "students who recognize the problems in the writing of others are likely not to have those problems in their essays, an assumption confirmed by careful research." English teachers know this is often not the case. The real problem seems to be money. E T S throws up its hands at the cost of grading written exams, but surely a way exists to pay readers to read written essays.

No critic has defined the shortcomings of the S A T better than Ralph Nader. "E T S has us all locked into a test that doesn't look for creativity, stamina, motivation or ethics — which are the four qualities on which man's greatest achievements are based." Our mania for measurement, our naive

assumption that we will discover a true meritocracy through objective standards, contradicts the original American idea. When Jefferson wrote of a "natural aristocracy" emerging from an elementary and then a "higher degree" of education in preparation for the university, he thought that "worth and genius would thus have been sought from every condition of life". "Virtue and talent" were to be relentlessly encouraged and sought in schools at all levels. What worth, what talent, what virtue, does objective testing measure? Rather than rewarding visible intellectual work done in the classroom, the tests reward a cleverness that even the clever can doubt.

Though E T S announces that the S A T is not designed to judge the "worth" of anyone, the tests set implicit standards of worth by becoming a passport to education, income and social status. An S A T score — the score on a single test — can set the direction of a lifetime. Though there is increasing skepticism about the S A T, the score can still weight heavily. E T S admits that a 60 point difference in verbal scores is statistically meaningless. (The 60 points could have been attained by such external factors as guesswork.) Yet a 60 point difference between two students can mean that one will get into a particular college while the other will be denied admission. To "learn" to take the test, students spend valuable hours in cram schools and crash courses — and even attend summer school. Though the coaching sessions can be helpful, they also teach an appropriate cynicism toward "the system." Substantial education — the history of man or nation — is set aside in order to beat the test. The test is "the system," to be overcome by studying vocabulary lists, by taking practice tests, by learning the technique of test taking. Resentment and cynicism are two lessons taught by the American way of testing.



Extending the global classroom

by Doug Junke

Trying to find a summer job can be one of life's most arduous tasks. So when someone offers you a position, that's great. But when someone offers you an interesting job that is also a chance to travel and a chance to advance academically — that's aufsehenerregend!

At Brock, it's called GERM 398hc, a summer work/travel/study program in West Germany. Each year, the department of Germanic and Slavic Studies arranges for 15 to 20 students to become immersed in everyday European life. In the student's senior years, the three-month stay is given a half course credit if the duration and nature of employment can be considered as in-service training. If the student goes twice, he or she, naturally, can earn a full degree credit.

The success of the five year old program speaks for itself, says Prof. Herb Schutz, associate professor of German and program organizer.

The 'summer abroad' program began in 1974, with just six students. Last year a total of 14 were employed by German companies like Mercedes-Benz. Students were dispersed to all regions and employed by organizations ranging from libraries to ball-bearing plants.

Many industries have acknowledged their enthusiasm for the program by promising to participate again next summer.

"This is the only program of its type," said Prof. Schutz as he relaxed in his tower cubbyhole. "I know of nothing else of this sort in the country.

"It is a work program integrated with education. It is a totally original idea by which a student can, in effect, earn a full university credit.

"I think it is a good chance for a student to know another reality," he continued. "There is an economic connection between Canada and West Germany and we are working into that connection.

"And the program, unique to Brock, is making a name for itself. We have had nothing but good responses to the program from the (West German) companies. Not only have some requested a student again next year, but some companies have requested two, three or four."

Prof. Schutz feels that the careful selection and screening of candidates has paid large dividends for the course. "We don't just send anybody," he remarked, "because so much depends on it."

One prerequisite for participation is that they must have mastered the language. "They are deeply motivated students," said Prof. Schutz. "They may be selected from any discipline, but they generally have come from within our department.

"We try to select those who we feel will profit most by the experience," he commented, adding proudly, "there have never been any dropouts in our program."

The summer of '79 arrangements proved once again that the program is just as valid and successful in practice as it seems on paper.

"The students have returned with very positive comments, both regarding the program and their personal experiences in Germany."

The German experience is about to expand. Beginning next September, the German departments of Brock and Trent University in Peterborough will operate a joint exchange program with West Germany's Freiburg University. Prof. Schutz, who describes himself as the not-so-silent partner in the program along with Prof. Dave Stewart of Trent, says the program is intended for students normally in their second year of study, preferably those with a B average. They will spend an entire year in Germany; nine months studying, and

three working. The program would be of interest to those students who intend to study European history, philosophy, politics, economics, comparative languages and literature, and the social sciences as well as the sciences.

All courses taken at Freiburg will be fully accredited by both Brock and Trent. Participants will be taught by accompanying Canadian professors and Freiburg's own faculty.

"We have geared the program to second year students because we feel they would profit most by the experience," commented Schutz. "Not only will they benefit by the educational experience, but Freiburg is rich in history and culture. Its location near the Black Forest also will allow the student easy access to France, Switzerland and the rest of Western Europe."

"Once again, selection will be the key," he remarked about the choosing of candidates. "They not only have to be fairly strong students and be competent in the language but they also will have to be mature enough to cope with the experience."

Freiburg is an exciting location says Dr. Schutz. It is a city "where every stone touches history. It is a town that goes back to Roman times."

Considered together, the two programs "really give the department a focus" said Schutz. "We are very student-oriented in our approach. We are not just classroom-oriented. We do try our best to make it a total educational experience.

"How are we as a nation to deal with West Germany if we can't talk to them in their language? If we want to do business with them we should be able to provide people who can talk in their language and have some understanding of their culture.

"The country will need a much larger effort than what we are doing here, but at least our programs are a start."

Reprinted from The New York Times Magazine. Thomas Wheeler teaches at the City University of New York; the article is adapted from his book, "The Great American Writing Block".

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