So for the first time, I attend a maths education conference, and to some extent enjoy it. I meet one or two people who later become friends It is good to have David with us, but I wonder if it is maths that we have in common. More perhaps to do with learning and teaching, people and reading? One of my sons is doing badly at maths. How can that be, I ask David, and what should I do? He says, far too many people are already good at maths. Is he able to cope with life? Does he have enough skills for that? And, of course, he does. (Later, he gets 6% for School Certificate maths, but now, nearly twenty years on, he understands mortgages well enough.) We eat out, have coffee, David catches the ferry across the harbour, and walks the long distance home.

This journal, with its significantly uncapitalised and focused title, arrives three times a year in my letter box – the only maths education journal I actually look forward to reading At least it will be interesting. Probably it will be provocative, often it will make links with surprising ideas and fields. Like David himself, it will certainly not be intellectually flabby.

> *Vancouver, its mountains close and generous against the sky. Everywhere, daffodils and trees in blossom. Round English Bay, Sunday morning walkers with dogs, and coffee in silver thermos cups Bicyclists in Stanley Park. And from here, on the sloping road near David's, blossom against the bay, the mountains, the sky.*

And David is sick. Stubborn, sometimes furious, always independent, in and out of hospital, a despair and a delight to a group of his friends, who talk and do crosswords with him, care for him, bring CDs and tulips, keep up with his extensive email friendships, and meet each other, some for the first time. But it is the last time that I see David.

I miss his edginess, his provocation It would be so easy to become morally, intellectually, emotionally flabby I miss him.

Mathematics is About

TOM KIEREN

Many years ago I was speaking at a conference in Regina, Western Canada. On one of my OHPs I had the phrase: "MATHEMATICS IS ABOUT ...". David Wheeler was at that conference too and happened to listen to my presentation Afterwards, he came up to me and commented on some things I had said In referring to the slide mentioned above, he said when he first saw it he took it to mean that mathematics was *about* – that is, that somehow we were always in the presence of mathematics: it was around us to be seen or looked at.

Of course, that was not what I had meant at all I was trying to make the point that for each of us our mathematics knowing is in some way about other experiences we have had or, as Freudenthal suggests, it is a way for us to organize our experiences David had a comment on that too I had explicitly invoked 'recursion' to capture the sense of 'aboutness' suggested by the phrase above. Rightfully so, David both questioned my use of the word 'recursion' and cautioned me about using words in imprecise ways in talking about mathematics or its knowing and of coming up with jargon in the process. Those of you who know us both will not be surprised that it was neither the first nor the last time David so cautioned me.

Although I frequently was subject to and likely earned his friendly criticism over the years, ideas that came up in David's responses to my words (as well as in his own thinking and writing to be sure) still crop up in my own thinking about mathematics and its knowing. Consider his comments above When we think about mathematics knowing today, it is tempting to think about the mental operations and abstractions that a person uses to think and act mathematically Or it is reasonable to think about our interactions with others, especially more knowledgeable others, as a source of or at least a basis for our own knowing of mathematics.

David's comment on mathematics being around us or our being in its presence reminds me to think about the cultural dimension of our thinking. David was blessed with co-ordinated hindsight and foresight, in that he could consider the mathematical problem-solving actions of a student in front of him in light of the nature of ideas and practices of the historic as well as the contemporary mathematical communities. As I observe the actions of students of many ages, I am prompted to ask in what ways the 'mathematics being about' or the 'presence of mathematics' might be observed to occasion the knowing actions or might be used to do so.

I have continued to use recursion as a way of thinking about and observing how students modify their own thinking over time (and through re-presentation possibly modify the thinking of others). In so doing, I am necessarily conscious of my use of the word and particularly its implications for the way in which the person uses and modifies their 'memories' and changes their own mental structures I am also necessarily conscious of how one represents such changes or growth in thinking for others Whenever I do this, I think of that long-ago challenge from David.

Finally, I have not stopped using words in unusual ways or even coining them in my writing and speaking. But I never do so that I am not prompted to think about the consequences for me and others as we think about how persons come to know mathematics and use that knowing in helping students in their knowing or devising elements of a 'better' mathematics curriculum I hope I am thinking more clearly both about mathematics and its knowing. To the extent I am successful, it is in part that David and his work has occasioned and continues to occasion my own knowing.

Recalling David Wheeler

JEREMY KILPATRICK

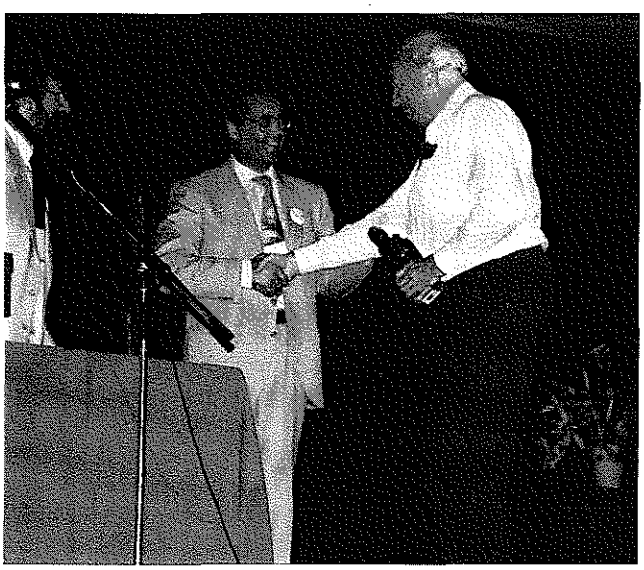
In early 1989, David began his role as chair of the International Program Committee of the Seventh International

Congress on Mathematical Education in Québec with a two-page memo to the committee. In the first item of a list of matters likely to come up for discussion, he questioned whether the forthcoming congress ought to be modeled on the preceding two. David thought not, arguing that the attempt in earlier congresses to encourage face-to-face work and discussion in small groups had had the paradoxical effect of minimizing important differences and disagreements.

It was typical of David to begin by trying, as he said, "to initiate dialogue, not push a particular point of view". And it was also typical both to advance his own tentative, contrary view for the committee to think about and, in that view, to promote the idea of the congress becoming a place in which difference and disagreement would be honored. For David, professional meetings were not about broadcasting information; they thrived instead on contrast, disputation, thorough explication and sustained dialogue.

At the first meeting of the IPC, in Ilkley, England, in September 1989, the agenda questions began with the following: "Are there ways of improving the quality of presentations and the productivity of discussions [at the congress]?" Throughout that meeting, and in the meetings that followed, that question guided everything David did as he led the committee in designing and developing the program. Despite being waylaid by illness for several months early in 1990 and then retiring from Concordia Unviersity and moving to Vancouver later that year, David kept up a prolific correspondence as he juggled the many requests, delays and confusions that plague any IPC chair.

Just as Henry Pollak, IPC chair for ICME-4, had used his perch at Bell Labs to telephone around the world in putting the program together, David adopted the new medium of BITNET to extend his reach, meanwhile writing and sending countless letters via regular post. When the congress date finally arrived, in August 1992, David was given the usual expressions of gratitude. But only those who had worked with him on the IPC knew of the truly monumental effort he had made in bringing that congress program to a successful culmination.



(photo: Marty Hoffman)

Chairing the IPC for IMCE-7 was only one of David's host of accomplishments in advancing mathematics education both as an international community and as a field of scholarly study. His move to North America in the 1970s prompted two of his proudest accomplishments: the founding of the Canadian Mathematics Education Study Group and the launching of *For the Learning of Mathematics*.

In the early days of *FLM*, David often expressed to individual members of the Advisory Board his concerns about its viability. Reporting on a meeting of the journal's directors in August 1981, he wrote, "We need a *lot* more subscriptions, and we also need the time to accumulate them. I wonder if this will turn out to be my most spectacular error!" Responding to reassurances that the error would not have been his but ours, its readers and potential readers, he wrote:

> I appreciate your remarks about FLM – though it could still prove to be my error of judgment in thinking that the "time was ripe" for it. I think that I have to suppose that the fact that my projections about costs and subscriptions have turned out wrong means that I got *something* wrong, fundamentally wrong in my assessment. The least culpable error may be in overestimating the audience for the kind of journal it is – in Gattegno's words, "I don't think there are 1,000 people who want to *reflect* about mathematics teaching".

If there are many more than a thousand such people now, it is in large measure due to the hard work and inspiring leadership of David Wheeler. He was himself a paradox: a deep thinker with the outlook of a mischievous boy. Who could forget his impatient snort when something especially stupid came his way? He was especially tough on researchers he thought should know better. I remember talking with him once as we sat outside a session on research he had found too much to take and realizing that this conversation we were having was far more enlightening and thought-provoking than any of the journal articles I'd recently read.

But no matter how impatient or discouraged he became, David's sunnier nature always came through. I think he would have agreed with Mark Twain:

> Intellectual 'work' is misnamed; it is a pleasure, a dissipation, and is its own highest reward.

David Wheeler: Originalité, Simplicité et Humour Discret

COLETTE LABORDE

La création d'un journal bilingue, dans lequel on pouvait publier en français, est loin d'être passée inaperçue en France! L'apparition de *For the Learning of Mathematics* fut pour moi l'occasion de mieux connaître David Wheeler par ses écrits, remplis d'idées originales et teintés d'un humour discret.

David Wheeler était persuadé de l'importance du