

partial

for Gordon Reece

Gregory always liked the illustrations in books as much as the words, even during his career as a linguist. A practical linguist, master of many languages. Particularly and professionally oriental languages. He was — then, before — one of the few who could read the whole historical range of Chinese writing, even the nearly impossible Tang grass scripts, and old handwritten kanji with ancient pronunciations. Hangul, too: in fact he could explain in simple terms how the characters encoded the way you said the words, and he had a virtuostic capacity to write words in other languages in an adapted Hangul so that Korean speakers knew how to pronounce them. Better than the IPA, he would say. That was then, before everything changed, on the naive side of his stroke, during the exciting but exhausting years working on the enormous illustrated volumes on the aesthetic use of written words in many cultures. He could look for hours at mathematical books also; the proofs and theorems meant nothing to him but he loved the mysterious rows of curly symbols. Now his languages were gone. All eight of them. But he still liked looking at pictures in books, and it didn't really matter what they were pictures of, as long as they were vivid and somehow symbolic.

Three mornings a week his wife, a professor of music, would push him in his wheelchair to the cafeteria beside the lecture theatre where she gave her class. He would sit there with a book on his knees, Sometimes a picture book for children, sometimes a score, sometimes manga. Just looking at the pictures, and absorbing through the closed doors the varied and sometimes exotic music that illustrated her lecture. Any book would do, provided the illustrations were rich enough to engage him for two hours. Today she had dropped in his lap a book that had been left on the kitchen table by the student who lodged in their house and for reduced rent dressed, wheeled,

and watched over Gregory. Garabedian's *Partial Differential Equations*. This is a notoriously difficult book, likely to frustrate and puzzle all but the most gifted. But Gregory simply appreciated the curly ∂ s, the squiggly \int s, some with what he thought of as cummerbunds around their tummies, the upside down deltas balancing on the pointy tips of their heads and the more stable ones standing stolidly by. He was sitting there poring through the book, tracing the equations with his finger, when a couple of students noticed what he was reading. "That's so hard. I wonder if he understands about eigenvalues in chapter 11." "Look: that's just what he is reading." So they approached him and asked a few polite questions. In reply he stabbed his finger at one equation and then another, and sometimes at a bit of prose. Not in the order in which they were written but what seemed random at first and then, as they concentrated and struggled to make sense of the sequence a natural and simple order. It made sense. They thanked him and hurried onto their class, where they startled their despairing professor by asking some sharp and insightful questions.

The next morning he was there again, with the same book. The same students, now with a couple more. More questions. The same kinds of answer: seemingly random stabs and wavings of his hand. One student handed him her own copy of the book together with a highlighter. He illuminated a few equations and a few paragraphs, and then taking from her hand a coloured marker he drew lines, wobbly lines but still communicative connections, between them. She wanted to preserve the connections he had made and so she drew in heads to the arrows, to show the order in which these things were to be understood. Gregory's wife appeared, excited but drained from her class, and was delighted to see the attention he was getting. But it was time for lunch, and she was afraid that he might get too tired, so she apologized to the students and wheeled him towards her van. The students moved to a coffee shop and prompted by multiple doses of caffeine and the pressure of one another, made sense of what he had showed them.

The following week: more students, more questions. This time he took a couple of highlighters out of his pocket and adorned pages of Garabedian with emphases and connections. The students went and got their own highlighters and transferred all these annotations into their own copies of the book. Some of the highlights preceded others and one student inserted the coloured arrows to connect them in the right order. Soon everyone was doing this. Not all of their annotations were the same: different colours, different lines, sometimes different directions for the arrows. They blew up copies of the relevant pages so that they were enormous, wall-sized, and transferred all their illuminations and squiggles onto them. They were beautiful, and they covered the wall of a student study room with them. The students gathered in there, drinking coffee and chatting while meditating on the pictures. As they did so, they became more and more comfortable with partial differential equations. Some of them after a while developed an intuitive feel for which kinds of variations in value to associate with which equations. This always involved some tacit assumptions about the values around the edges, of course, but this was somewhat hidden by the fact that the pictures were from pages and did have borders.

It was as if a weight had come off their backs. A dreaded course had turned into something charming and entertaining. The less they feared it the more they understood. Their gratitude to Gregory was immense and heartfelt. And so the next week they gathered around him in his chair and rather than asking questions they explained to him what they had come to understand, as a kind of confirmation and exhibition. Gregory just listened. They were impressed by his quiet modest wisdom, not realising how difficult for him speech had become. They pointed to the diagrams and spoke as their fingers followed the arrows and swished across the highlights. It made sense to him, and he felt on the verge of replying. This continued for seven more days. At the end of each day he would look at each of them and nod, which they took as approval from high authority and an invitation for more of the

same.

The seventh time this happened he found words welling up in him. It felt as if the squiggles and swishes had connected with the scripts inside his head which themselves connected with the sounds of language. "Well" he said "now I tell you something." This was the most he had spoken for a year. Then, instead of saying more, he took a pen and turned to the blank page at the end of Garabedian. There he wrote something, in a form he knew well, a perfectly correct five-seven-five haiku:

the boundary of
speech and silence holds the seed:
beginning is all