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I Love You Fifty

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Synopsis

This article chronicles the merging of my roles of teacher and learner of mathematics with that of a relatively new pursuit: parenthood. Amidst my attempts to dutifully provide opportunities for my son to interact with various mathematical ideas and artifacts, it was an unanticipated moment of epiphany that allowed me to enter into his emerging world of mathematical significance and rediscover what first drew me to the teaching and learning of mathematics. My son's innocent, yet potent, understanding of number provides an image of the power of mathematics to organize experience, structure significance, and communicate meaning.

I am a math teacher.

It takes concentrated and extended effort to recall a period of time in my life when I did not identify as such. But for many years, my friends and family had me typecast as a stereotypical *math guy*. Typically, this manifested itself when someone needed assistance deciphering a school mathematics exercise or when a piece of arithmetic needed to be performed without electronic aid — an estimation or a percentage. Obviously, I held some affection for the discipline of mathematics, at least enough to endure an undergraduate serving. The truth is, though, the intrigue for me was less the subject itself, and more the process in which people came to learn mathematics — to do mathematics. I enjoyed the moments when people realized that their disjointed notebook exercises could be used to extend meaning, or their reaction of disgust and denial when I would point out that they evoked a mathematical structure to solve a problem, pose a new one, or make sense of their world.

For as long as I can recall, I have suffered from a crippling fascination with the questions, *what is mathematics?* and *why do we teach mathematics?* My assertions in response to both of these questions have been informed and challenged by my time spent as a classroom teacher and graduate student in mathematics education. My hope is that this chronicle provides insight into my answers to both these questions, without directly addressing either.

Teachers are constantly bombarded with messages of mastery. And, as a teacher, you are expected to exude the image of expertise — of polished completion. This is why, of all my encounters with teaching and learning in both formal and informal capacities, parenting has become, by far, my greatest educative challenge. Parenting simultaneously implicates both teaching and learning, and unfolds as an undeniable hybrid of the two. Every action in the chaos can feel crucial, yet the sheer bulk of requisite decisions makes each ephemeral, almost insignificant in time. Parenting is the assembly of spontaneous judgements based on a constant process of calibration to a child's needs. Emerging from this hodgepodge of teaching and learning are flashes of surprise when your child engages you in the unexpected. These titanic moments of discovery have the capacity to startle us out of routine and, in the case of the anecdote to follow, provide us with a perfect picture of teaching, learning, and the convoluted process of coming to know that intertwines the two.

My son was born around the onset of my master's program in mathematics education. As he grew older, my triadic role of father, teacher, and graduate student became a force of mutual influence. Each arena of my life spoke to the other, and the hectic combination of the three meant that the confluence of roles was often unintentional. I was (and continue to be) deliberate in surrounding him with opportunities to interact with mathematical artefacts. Often times, we engaged in exploratory conversations of space, object orientation, size, pattern, and number. After all, I was a math teacher; these forays into the mathematical were probably as much about me keeping up appearances as they were about us learning mathematics together.

In hindsight, my impressions of my son's mathematical ability were a sizeable underestimate. While I was interested in how he was constructing the concept of number through counting objects or comparing block towers of different heights, he was bringing forth a much more potent understanding of number and actively using it to organize his world.

My first glimpse into my son's world of mathematics came one day when I returned home from school. That week, my wife and I had been having particular trouble convincing my son of the many benefits of a naptime. (This, of course, was a single struggle in a long list of struggles when one gets into the habit of reasoning with a toddler.) I asked him if he had had a nap that day, and his response intrigued me.

"Yes, Dad. I had forty naps!"

Life continued without much pause. The next evening, I was tasked with the bedtime routine. For those of you who have yet to undertake a toddler's bedtime routine, it is important to note that bedtime, in my experience, is not as onerous as naptime. Perhaps it is the darkness outside of my son's window that somehow provides him with a symbol of his looming fate. Whatever the cause, bedtime contains the precious, fleeting moments of the day before competing duties call in the morning. I like bedtime.

Part of bedtime is the reading of stories. This always begins with me facetiously asking if he would like to read a story with me. Through the years, the question has become rhetorical, because my son has never once elected to forego storytime. On this night, however, the response was non-routine.

"I want to read forty books!"

Sensing a pattern, I commented on the enormous size of forty and that someday, we would count there. The evening concluded with the customary reading of two books.

I mentioned the emerging theme of forty to my wife that night. Neither of us could recall ever mentioning forty to him, but he had clearly begun to associate forty as large, desirable, and possibly even never-ending.

Throughout the next week, it resurfaced a number of times, all without my wife or I being able to recall having ever explained to our son what forty was.

We drove past a flock of birds:

"Woah, that's forty birds!"

We played at a local park:

“See the forty kids?”

Each time, forty was evoked in reference to a large group or collection. Without our prodding, he was beginning to make sense of his world in numerical terms. These phrases represented the emergence of mathematical significance alongside his environment. He was mathematizing his world in a fashion completely different than I, in my roles of father, teacher, and graduate student, could have expected — but maybe should have.

The culmination of this mathematical exposition occurred once again during our bedtime routine. That night, after we finished our two books, we were staring at the ceiling anticipating what we would do in the morning — Saturday morning. As I prepared to leave him for the night, I told him that I loved him. I had already begun to lift my head from the pillow when he turned and looked me square in the eyes, in a way that only toddlers can — with complete disregard for personal space.

“Dad, I love you fifty.”

Befuddled, I told him that I loved him fifty, too, turned off the light, and left the room.

I was once again left wondering where he had learned the word. More perplexing than this, I was left in sudden silence to ruminate on the significance that fifty now held in the world of my son. For him, fifty gave him access to the unfathomable — the expansive. What he aimed to communicate was beyond imagination, yet readily available. He was simply framing his understanding in his burgeoning concept of number while simultaneously reacquainting me with my love for the teaching and learning of mathematics.

I had spent so much time working through, what I perceived to be, mathematical opportunities with him, but it was only by experiencing how he had begun to use number to structure significance that I was reminded of the potency of mathematics as a way of being in the world. It was not through a simple mimicry that he expressed mathematics; it was through the incongruence in his mimicry that he brought forth mathematics. That is, he was not simply working within another’s careful rules; his mathematical action was evidence of the unique way he conceptualized the problem he noticed in his world: that of organizing the immeasurable into an expressible concept.

The concept of number provided that organization. In the process of him structuring his encounters with plenty, he had developed an understanding of forty. Forty represented some type of giant mathematical land grab of the numerous, but knowable. Eventually, this initiated a need for another concept, that of the too large to know. In other words, fifty, for my son, was much more meaningful than a location on a number line or another stop along a lengthy list of memorized numbers. Fifty was imaginative, whimsical, and quite possibly, infinite. He needed fifty.

In the meantime, he provided me with an ever-present reminder that doing mathematics is not about achieving some end goal, but constantly posing new and relevant challenges; it is a process of structuring significance. Mathematics gives us opportunities to go places and pose problems that are otherwise unavailable, and it is there that the process of learning mathematics contains the most beautiful and elegant expressions. This chronicle thus serves as a reminder for me, the teacher, to be mindful of mathematics as a sense-making activity and not just a series of problems to be imposed externally and solved in quick succession. Learning mathematics is about making meaning, about an active structuring of problems as they become relevant. It is about the emergence of knower and known, the strange amalgam of wonder and structure — and I love it fifty.