PHILOSOPHY OF MATHEMATICS EDUCATION JOURNAL 10 (1997)

A PLAY ON THE WICKEDNESS OF UNDONE SUMS

A Play on the Wickedness of Undone Sums, Including A Brief Mytho-Phenomenology of "X" and Some Speculations on the Effects of Its Peculiar Absence In Elementary Mathematics Education

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Car ride to school. And I'm quizzing my 14 year old son, Eric, about how math is going lately, what they have been doing, whether he understands. The class has just entered in to the nebulous beginnings of algebra, and Eric offhandedly said "I don't really get this stuff about 'x.'"

Suddenly I was drawn away. I have been working for the past few years with Sharon Friesen and her teaching partner, Patricia Clifford, who have been working both in elementary and middle school classrooms over the past few years. Sharon is a brilliant mathematics teacher, and part of her brilliance is how she is able, even with the youngest of children, to maintain the integrity of the discipline of mathematics and help children find ways in to its real work, underneath the burgeoning and often seductive trivialities that pass for some elementary school mathematics "activities."

Our conversation, now so oddly coincidental with Eric's quandary: no mathematician would ever write "5 + 3 = __." They would always write "5 + 3 = x." If you do not write in the "x," you turn what is, mathematically speaking, an equation into an unanswered question, as if you are saying "five plus three equals?" with a rising pitch of voice at the end.

More disturbing still, without the "x," equality is turned into an operation, something you have to now do.

We talked through all those long lists of so-called "math facts" that children are given in school, each one missing an "x."

And how each one becomes filled with an odd and inappropriate form of anticipation and suspense, as if, with "5 + 3 = __," a pendulum were pulled over to the left hand side, tensed, unable yet to let go, needing our concerted intervention in order to achieve its blessed release.

Once the "x" is returned to its proper place, this suspense is not fulfilled but lifted. Equivalence becomes, not a question but a state, a point of rest.

It loses some of its compulsiveness.

With "5 + 3 = x," we can finally admit that there already is equivalence (even though what it is may be undetermined). Equivalence is now no longer an operation. It no longer longs or waits or demands to be done. It no longer needs us to do it. We need no longer be actors or manipulators or constructors drawn into the frays of action and manipulation and construction.

As this once-taunt pendulum now rests in equivalence, we, too, can now rest in it.

Without the "x," vision becomes narrowed and singular: answer it, make this equivalence (in school talk, "five plus three makes?" is commonplace). With the reappearance of "x," a wide field of movement and choice and decision and consequence flowers open. What was once made narrow and singular by the absence of "x" is now an open topography of relations, a "space," a "place" with

relatives and kith and kin.

So now, a new pleasure arises to replace the tensed pendulum jitters. Now that we know that there is an "x," we ourselves can rest with some existential assurance in a given field of equivalence, with all of the multiple possibilities involved. Against such a background of possibilities, manipulation becomes careful, measured. We can (carefully!) manipulate the equation "5 + 3 = x," into "5 + 3 - x = 0" or even "-x = - (5 + 3)," and so on.

Without the "x," the very idea that you can do anything to one side of an equation as long as you do the same to the other side is not simply meaningless.

It is impossible.

Without the "x," children can come to believe that subtraction is one more damn thing to be done (and teachers can come to believe that subtraction is one more damn thing to be taught).

With the "x," it is possible to see that subtraction is already co-present in the givenness of "5 + 3 = x" as an implicate relation living at the very heart of addition.

With such existential assurance that, we can now safely ask "What is 'x'?" We are safe, now, because our actions and manipulations and constructions are no longer necessary to the very Being of Things: that is given, it is already assured, even though what it might turn out to be still suffers the indeterminacy of "x."

Constructivism, we might say, has found its limit.

A "that there is" of implicate family resemblances flowers opens without us.

Alethia: the word hermeneutics invokes for truth as uncovering, opening up.

"5 = 3 = __," we might say, is lethal, deadening. Nothing can open up.

Truth in this hermeneutic sense is not possible with out an "x" which throws open a field of relations and revelations that we can now come upon and cannot simply "construct." With such a field of relations, we must be careful, considerate, quiet sometimes, sometimes full of vigour and ebullience. Our actions are held in place.

We are no longer little gods, and the stories of mathematics are no longer stories only about us and our heroic deeds of construction. We are in a place, and our deeds become heroic only if we do what is needed, what is proper to this place.

What is regained with the re-placement of "x," then, is a hint of the deep pleasures that mathematicians experience in entering in to open play-fields of possibilities, feeling the exhilarating rush as relations rattle open like the furls of wings, the heartpump sense of potency and option and quandary and challenge and difficulty and adventure and arrival within a still place.

Without an "x," the walls close in and smother movement and breath.

Trapped.

Spotted in sights.

The Teacher's Question: "5 + 3 equals? David? Well?! You wern't listening, were you?"

("No, actually, I wasn't.")

Clearly, some young children (and many adults I know) would not be able to or interested in doing the work of opening up this mathematical field and exploring it, taking its paths, seeking its ways, its patterns, its semblances, its seasons, its quandaries and comforts and thrilling perfections.

However, with the systematic early absence of "x" in mathematics education, there is no such field (the systematic early absence of "x" is thus akin to an ecological disaster, and the image of the Child-as-Constructor-Without-Limit is ecologically ruinous). Without an "x," mathematics loses its openness. It loses its truth. It becomes distorted into monstrous little "equivalence as operation" math-fact question lists in the early years.

Deadly.

And our children become distorted into little manipulative monsters roaming the landscape without regard.

So, back in the car, I asked Eric to recall all those addition and subtraction questions that, in his earlier grades, were written "5 + 3 = __."

"It should have been '5 + 3 = x.' The 'x' should have never been left out."

A moment's silence.

"Okay, so, algebra. Right. I get it. Why didn't they tell us this in the first place?"

Speculation: that the systematic and deliberate absence of "x" in early mathematics education turns the learning of mathematics into something more desperate than it needs to be. Perhaps worse yet, it turns mathematics itself into something that cannot fully make sense, that is distorted, misrepresented, flattened out, often lifeless, robbed of the truths of family resemblance and topography. It becomes "the solving of problems," and loses its character as an open world of relations. It becomes "unworldly"--nothing more than mental operations in the omnipotent, manipulative charge of a thinking subject whose competence is bewilderingly beyond me and, let me admit it, frightens me to no end in its confidence and blindness.

More than once, I have written the word "mathematics" on the chalk board in my Early Childhood Education teaching methods classes, and have turned around to tears, looks of panic, like deer caught in headlights, transfixed, unable to move or speak.

Horror, if you will, at the spittlefear smell of something awful impending.

Lifelessness: lethia.

This is the lifelessness these students experienced in their own mathematics education and the lifelessness that they are now dreading to pass on to their own children, as part of their professional responsibility.

So much of this because of an odd absence of "x."

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Maintained by Pam Rosenthall
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Last Modified: 11th November 1997