# A Matter of Time
### CL 65/Math 5
### Winter 2005

### Friday Discussion #2

The first question comes from a student comment on our web site:

> A thought left over from last week: One of the useful functions of time is to correlate different events, e.g. my breakfast with the opening of the NYSE or my German class with the parking guy's sweep outside Thayer. In order to construct a framework on which to orient events in our lives, we mark the effect that the passage of time has on things that tend to be both regular and physically salient, such as the planets moving or the breakdown of an atom. This gives us clocks, calendars, etc. What I don't understand is how this brings us any closer to measuring or even defining time. How can we say that the "scientific time" we've discussed is anything more than an attempt to describe a series of events? We may as well be observing the erupting of a geyser, the aging of a face or perhaps even the growth of love; it seems to me that decreasing the order of precision does not change the nature of the exercise.

---

The material below comes from the Connecting Across Borders sections of the textbook, *A Matter of Time*, by Lahr and Pastor.

From section 4.3:

Norbert Elias states on Pp. 20-21 of *Time: An Essay*:

> The fact that people must and can orientate themselves in their world by acquiring knowledge, their total dependence on the learning of social symbols for their survival as individuals and as a group, is another of the peculiarities distinguishing humans from other living beings.

> Among the symbols which human beings can learn and, from a certain stage of social development on, must learn as means of orientation, is time.

Keeping this quote in mind, think about the following questions.

1. How are time and space conceptualized by Zeno in his paradox?

   <u>Related Issues</u>

(a) What is the role of infinity in the paradox?

(b) What is the relationship between the finite and the infinite in the paradox?

(c) In what sense can we say that Zeno's concepts of space and time are a means of orientation?

(d) How do they, as means of orientation, relate to knowledge?

2. How are space and time conceptualized in the mathematical resolution of Zeno's paradox?

   Related Issues

   (a) What is the role of infinity in the mathematical argument?

   (b) What is the relationship between the finite and the infinite in the mathematical resolution?

   (c) In what sense can we say that the mathematical conceptualization of time and space is a means of orientation?

   (d) How do they, as means of orientation, relate to knowledge?

3. How are space and time conceptualized in Borges' *Death and the Compass*?

   Related Issues

   (a) What is the meaning and function of numbers and geometry in the story?

   (b) What is the difference between Lönnrot's concept of space and time and Scharlach's concept of space and time?

   (c) What is Borges' critique of the compass and the calendar as means of orientation?

   (d) Borges' critique notwithstanding, is abstract reasoning necessary in order to formulate models of reality?

   (e) Who is the pursuer and who is the pursued in the story?

   (f) Are different conceptualizations of space and time coexisting side by side in the story?

   (g) How do they, as means of orientation, relate to knowledge?

   (h) What is the difference between Lönnrot's compass and Borges' compass?

4. Plato separates knowledge into two kinds: knowledge of the world, that we gain from everyday experience and observation; and knowledge of ideas, what he calls the *real* knowledge. In our study of Zeno's paradox and *Death and the Compass*, which kind(s) of knowledge does each exhibit: Zeno, Lönnrot, Scharlach? Do you agree with Plato's classification?