

Chapter 4: Cleaving the Air - Sect. 3

THE DIGITAL CLOCK: THOUGHTS ABOUT TIME

“Do not squander time,” said Benjamin Franklin, “for that is the stuff life is made of.” Our consciousness, even more than it is posted in space, unrolls in time. I can imagine abolishing space from my awareness—if, say, I were floating in a sensory deprivation tank or became blind and paralyzed—while still continuing to think as usual. But it’s almost impossible to imagine abolishing *time* from one’s awareness, leaving the last thought immobilized like a stuck car horn, while continuing to have a mind at all. For Descartes the distinction between the physical and the mental depended on this difference. Matter is extended in space, but consciousness exists in time as surely as it proceeds from “I think” to “I am.”

As with every other aspect of human nature, it’s been claimed that there are cultures out there that have no conception of time. The linguist Bernard Comrie examined the claims and has noted that they are not credible.⁷⁵ A person belonging to a culture with no conception of time could not generalize that people invariably are born, grow up, age, and then die, and thus would be unsurprised to meet someone who started out as a corpse, came to life as a senior citizen, grew younger and younger, and eventually disappeared into his mother’s womb. Needless to say, there is no society populated by such madmen. And people in societies all over the world order the events in their autobiographies, genealogies, and histories, and their myths

about such things as the creation of the world or the arrival of their ancestors.⁷⁶

People also keep track of time in the words and constructions of their language. In many languages the ordering of events is expressed in adverbials *like yesterday* or *a long time ago*. And in about half the world’s languages it is embedded in the grammar in the form of tense.⁷⁷ The semantics of time suggests that even the claim that many peoples conceive of time as cyclical should not be taken too literally. Though people are aware of the recurrence of days, years, and phases of the moon, it does not overwrite an awareness of the linear sequence of events that make up the flow of life. No language has a tense, for example, that means “at the present moment or at an equivalent point in a different cycle.”⁷⁸

But our intuitive conception of time differs from the ceaseless cosmic stream envisioned by Newton and Kant. To begin with, our experience of the present is not an infinitesimal instant. Instead it embraces some minimum duration, a moving window on life in which we apprehend not just the instantaneous “now” but a bit of the recent past and a bit of the impending future. William James called it “the specious present”:

The practically cognized present is no knife-edge, but a saddle-back, with a certain breadth of its own on which we sit perched, and from which we look in two directions into time. The unit of composition of our perception of time is a duration, with a bow and a stem, as it were—a rearward- and a forward-looking end.... We do not first feel one end and then feel the other after it, and from the perception of the succession infer an interval of time between, but we seem to feel the interval of time as a whole, with its two ends embedded in it⁷⁹

How long is the specious present? The neuroscientist Ernst Poppel has proposed an answer in a law: “We take life three seconds at a time.”⁸⁰ That interval, more or less, is the duration of an intentional movement like a handshake; of the immediate planning of a precise movement, like hitting a golfball; of the flips and flops of an ambiguous figure like those on pages 43 and 145; of the span within which we can accurately reproduce an interval; of the decay of unrehearsed short-term memory; of the time to make a quick decision, such as when were channel-surfing; and of the duration

of an utterance, a line of poetry, or a musical motif, like the opening of Beethoven's Fifth Symphony.

Time, at least as it is expressed in the grammatical machinery of language, also differs from Newtonian time in not being measurable in units. A language's tenses chop the ribbon of time into a few segments, such as the specious present, the future unto eternity, and the history of the universe prior to the moment of speaking. Sometimes the past and future are subdivided into recent and remote intervals, similar to the dichotomy between *here* and *there* or *near* and *far*. But no grammatical system reckons time from some fixed beginning point (as we do in our technical vocabulary with the traditional birth of Jesus) or uses constant numerical units like seconds or minutes.⁸¹ This makes the location of events in time highly vague, as when Groucho told a hostess, "I've had a perfectly wonderful evening. But this wasn't it."

There is a close parallel in the degrees of precision that are available to languages in the way they express number, space, and time.⁸² Using phrases composed of words, we can express quantities from the infinitesimally small to the infinitely large with any degree of precision, thanks to number phrases (*three hundred and sixty-two*), directions (*the third house on the right off Exit 23*), and dates and times (*seven forty-two P.M., May seventeenth, nineteen seventy-seven*). But if we restrict ourselves to simple words and compounds, the distinctions plummet into the dozens—with number, a few words like *one*, *two*, *twelve*, and *twenty* (or, in many languages, only "one," "two," and "many"); with space, prepositions like *across* and *along*; with time, temporal adverbs like *now*, *yesterday*, and *long ago*. And when we rely on the distinctions coded in grammar, the distinctions become still more schematic. In English, we distinguish only two numbers (singular and plural), and perhaps five tenses (depending on how you count); this is similar to the way that many languages dichotomize location into "here" and "there."

The imprecision in the way languages express time is related to the imprecision in the way we experience and remember it. Though no one experiences time as coarsely as the handful of distinctions in a tense system would suggest, we don't live by a mental stopwatch either.⁸³ There is a joke about a father who asks his son, a physicist, to explain Einstein's theory of relativity. The son says, "You see, Dad, it's like this. When you're in a dentist's chair, a minute seems like an hour. But when you have a pretty girl on

your lap, an hour seems like a minute." The father ponders the explanation for a moment and says, "So tell me. For saying things like this, Mr. Einstein makes a living?"

In fairness to Mr. Einstein, his theory says that time is relative to the inertial frame in which it is measured, not that it is subjective. The human experience of time *is*, of course, subjective, and it speeds up or slows down depending on how demanding, varied, and pleasant an interval is. But one aspect of Einstein's theory does have a counterpart to the psychology of time, at least as it is expressed in language: the deep equivalence of time with space.

The similarity between space and time is limpid enough that we routinely use space to represent time in calendars, hourglasses, and other time-keeping devices. And the cognitive similarity also shows up in everyday metaphors where spatial terms are borrowed to refer to time. George Lakoff and Mark Johnson have explored a number of these "conceptual" metaphors, so called because they consist not of a single trope but of a family that share an underlying conception.⁸⁴ In the TIME ORIENTATION metaphor, an observer is located at the present, with the past behind him and the future in front, as in *That's all behind us*, *We're looking ahead*, and *She has a great future in front of her*. Then a metaphorical motion can be added to the scene in one of two ways. In the MOVING TIME metaphor, time is a parade that sweeps past a stationary observer: *The time will come when typewriters are obsolete*; *The time for action has arrived*; *The deadline is approaching*; *The summer is flying by*. But we also find a MOVING OBSERVER metaphor, in which the landscape of time is stationary and the observer proceeds through it: *There's trouble down the road*; *We're coming up on Christmas*; *She left at nine o'clock*; *We passed the deadline: We're halfway through the semester*. Lakoff and Johnson note that the two metaphors are incompatible, even though both use space for time. As a result, expressions like *Let's move the meeting ahead a week* are ambiguous. They can mean "make it earlier," if *ahead* is defined by the parade of time past the observer, or "make it later," if *ahead* is defined by the path of the observer through the landscape. (Note the parallel with the fly on the sunbather's thigh, which is both *above* and *below* her kneecap.)

Although the use of space to represent time appears to be universal, the way that time is aligned with a dimension of space can vary.⁸⁵ In English alone, the moving-time and moving-observer metaphors coexist with time

» a pursuer, in *Old age overtook him*, and with time rotated to the vertical, in *Traditions were handed down to them from their ancestors*. Vertical metaphors for time are even more common in Chinese, with earlier events being “up” and later events being “down,” presumably a legacy of their writing system.⁸⁶ And in Aymara, a language spoken in the Andes, the time-orientation metaphor is turned around 180 degrees so that the future is said to be behind one and the past in front.⁸⁷ The metaphor is unusual, but when we examine the concept of the future we will see that it is not as bizarre as it may seem.

Metaphor is not the only way in which language relates time to space. Time can be related to space and to substance in an even deeper way: in the semantics of tense and verbs. The equivalence is deeper than metaphor because it is not a mere sharing of words. It consists of a congruence in the *construal* of time, space, and substance, with no tangible linguistic thread connecting them.

Time is encoded in grammar in two ways. The familiar one is tense, which can be thought of as the “location” of an event or state in time, as in the difference between *She loves you*, *She loved you*, and *She will love you*. The other timekeeper is called aspect (we encountered it briefly in chapter 2); it can be thought of as the *shape* of an event in time. Aspect pertains to the difference between *swat a fly*, which is conceptualized as instantaneous (that is, within the specious present); *run around*, which is open-ended; and *draw a circle*, which culminates in an event that marks the act’s completion. Aspect can also express a third kind of information related to time: the *viewpoint* on an event. An event can be described as if it is being seen from the inside (in the thick of the event as it unfolds), as in *She was climbing the tree*, or as if it is being seen from the outside (taken in as a whole), as in *She climbed the tree*.⁸⁸ (The word *aspect* is from the Latin for “to look at,” and is related to *perspective*, *spectator*, and *spectacles*.)

Though most people have heard of tense, few have heard of aspect, because the two are often confused in language lessons and traditional grammars. Tense and aspect both have something to do with time, and both are expressed in the same vicinity, namely, on the verb or auxiliary. And as we shall see, some inflections blend a bit of tense with a bit of aspect, making it hard to keep them straight. But conceptually, they are completely different. Indeed, in theory they are independent—an event that unfolds in time in a particular way (aspect) can do so whether it takes place yesterday, today, or

tomorrow (tense). And remarkably, tense and aspect each has a distinct counterpart in the realm of space and substance. We will see that the meaning of tense (location in time) is like the meaning of spatial terms, and that the meaning of aspect (shape in time and viewpoint in time) is like the meaning of words for things and stuff—complete with plurals, boundaries, and a count-mass distinction.

Tense has the reputation of being the most tortuous part of grammar. In his column-within-a-column called “Ask Mister Language Person,” Dave Barry answers the following request:

Q: Please repeat the statement that Sonda Ward of Nashville, Tenn., swears she heard made by a man expressing concern to a woman who had been unable to get a ride to a church function.

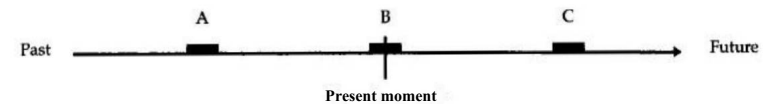
A: He said: “Estelle, if I’d a knowed you’d a want to went, I’d a seed you’d a got to get to go.”

Q: What tense is that, grammatically?

A: That is your pluperfect consumptive.

The horrors of tense arise from the convoluted ways that tenses can combine with verbs, aspects, adverbs, and each other (as in *Brian said that if Barbara walked home, he would walk home too*). Nonetheless, the basic meaning of tense is perfectly straightforward.

The best way to understand the language of time is to depict it, naturally enough, in space. Consider a line that runs from the past through the present moment to the future. Situations (that is, events or states) can be represented as segments along the line:



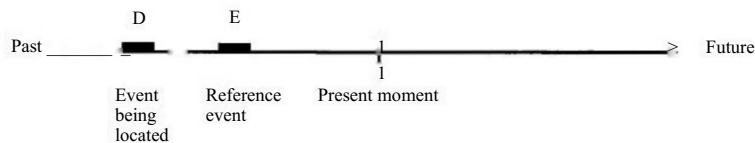
In English, the three basic tenses are child’s play: the past tense is used for situation A in the diagram (the situation precedes the moment of speaking), the present tense for B (the situation overlaps the moment of speaking), and the future tense for C (the situation follows the moment of speaking). But for other English tenses, and for many tenses in other

languages, we need to introduce a third moment in time: not just the event you are talking about, and the moment at which you are speaking (that is, the present moment), but also a *reference time*: an event that has been identified in the conversation and that is serving as the “now” for the actors in the narrative. (Often the “now” for the actors will be the same as the “now” for the speaker, but sometimes the two are different. For example, if it’s Friday, and I’m telling a story about what Sally did on Monday, then Monday is the “now” for Sally—the reference time—even though it’s no longer “now” for me.) Then we can define tense with two questions:

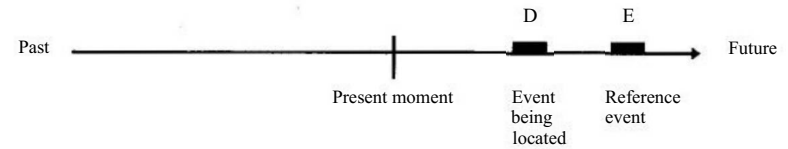
- Does the event occur before, after, or simultaneously with the reference time?
- Does the reference time occur before, after, or simultaneously with the moment of speaking?

With two extra wrinkles—some languages permit two or more reference times, and some languages distinguish “before” and “way before,” “after” and “way after”—the answers to the two questions can, according to Comrie, capture the meaning of every tense in every language (presumably even the pluperfect consumptive).⁸⁹

In English, the reference time plays no role in the past, present, or future tenses, but it is needed to define the other two major tenses. The pluperfect—*She had written the letter*—is shown here as pertaining to situation E:



It implies that the letter-writing (D) took place prior to the “now” (E) in the story being narrated, which is prior to the moment of uttering the sentence. This is clearer when we identify the players explicitly: *Francesca had already written the fateful letter* [event being located] *when the count knocked on the door* [reference event, in the past]. The future perfect—*Francesca will have written the letter*—is similar, except that the reference event is located *later* than the present moment:



I mentioned that tenses (locations in time) work like prepositions and other spatial terms (locations in space). A tense locates a situation only relative to a reference point (the moment of speaking or a reference event), rather than in fixed coordinates such as the clock and the calendar. It cares about direction (before or after), but ignores absolute distance (days, hours, seconds). And it generally ignores the composition of the thing being located, treating it as a point or blob without visible internal parts.

But time is not identical to space, neither in reality nor in the mind, and that leads to some differences between tenses and spatial terms.⁹⁰ Most obviously, time is one-dimensional, so there are fewer tenses than there are spatial terms. And because of this one-dimensionality, the present moment (“now”) intrudes between the past and the future with no detour around it, ineluctably dividing time into two noncontiguous regions. So unlike space, where we have terms like *there*, *far*, and *away from*, which refer to the entirety of space other than “here,” no language has a tense that refers to the entirety of time other than “now,” embracing the past and the future with a single marker. (There is a counterexample, but it is a word rather than a tense: *then* can refer to the past or the future, as in *She saw him then* and *She will see him then*.)

Another essential difference between time and space is that the two directions of time are very different.⁹¹ The past is frozen and cannot be changed (except in science fiction like *Back to the Future*), whereas the future is a mere potentiality and can be altered by our choices in the present. This intuitive metaphysics is reflected in the way that many languages make only a two-way distinction between past and nonpast, the latter embracing the present *and* the future. Many languages don’t express the future in the tense system at all but in a distinction between events that have actually taken place or are now taking place (*realis*) and events that are hypothetical, generic, or in the future (*irrealis*). The metaphysical and epistemological difference between past and future also underlies the Aymara metaphor in which the past is ahead and the future behind. The past has taken place

and is knowable, as if it can be seen before your eyes, whereas the future is up for grabs and is inscrutable, as if it were out of view.

Even in English the future tense has a different status from the other tenses. Rather than being a form of the verb, it is expressed by the modal auxiliary *will*. It's no accident that the future shares its syntax with words for necessity (*must*), possibility (*can, may, might*), and moral obligation (*should, ought to*), because what will happen is conceptually related to what must happen, what can happen, what should happen, and what we intend to happen. The word *will* itself is ambiguous between future tense and an expression of determination (as in *Sharks or no sharks, I will swim to Alcatraz*), and its homonyms show up in *free will, strong-willed, and to will something to happen*. The same ambiguity between the future and the intended can be found in another marker for the future tense, *going to* or *gonna*. It's as if the language is affirming the ethos that people have the power to make their own futures. You might be wondering whether this is a product of some go-getter attitude, can-do spirit, or Protestant work ethic imbued in Anglo culture. Not so: in languages from disparate cultures all over the world, future tense markers evolve out of verbs for volition or verbs for motion, just as they did in English.⁹²

The muddling of volition and futurity also plays out in the ways that the future tense is used differently for one's own actions and someone else's. Other than totalitarian despots, a person can determine his own immediate future more reliably than someone else's, so the mixture of willfulness and prediction packed into a future auxiliary can vary from the first person to the second and third. According to many language mavens, in proper English the future auxiliary is *shall* for the first person but *will* for the second and third; if you switch them around, you get a declaration of intent rather than a genuine future tense. Thus *I will drown, no one shall save me* is the defiant vow of a suicide; *I shall drown, no one will save me* is the pathetic prediction of a doomed wretch. I am skeptical that any Englishman has made this distinction in the past century, Winston Churchill seemed determined enough when he said, "We shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills; we shall never surrender." But it is true that many languages blur the future tense with notions of possibility and determination. This also explains a puzzle about tense noted by Zonker Harris in *Doonesbury*:



Doonesbury © 2002 G. B. Trudeau. Reprinted with permission of Universal Press Syndicate. All rights reserved.

The future tense is often used by flight attendants and waitstaff at fancy restaurants as a display of politeness. It pretends not to foreclose any possibilities, as if the listener's approval will be solicited at every stage, before anything is set in stone. As we shall see in chapter 8, it is an example of a common tactic of politeness in the world's languages: Pretend to give the listener options.⁹³

Though native speakers of English use its tense system effortlessly, it often bewilders people who learn it as adults. While doing the research for this chapter, I came across this sentence in a paper by an Italian linguist: "It may be useful to step back and get a more general picture of what goes on." No native English speaker could have written that sentence; we would say *what is going on*. But why? The answer is that English has two present tenses—the simple present (*it goes*) and the present progressive (*it is going*), and they are not interchangeable. The difference hinges on the second way in which language encodes time: aspect.

Aspect, recall, is about the *shape* of an event, and one's *viewpoint* on it. By "shape" I mean how an action unfolds in time. Linguists sort verbs into classes, each called an *Aktionsart*, German for "action type," based on their temporal contour.⁹⁴ The deepest divide is between "states," in which nothing changes, like *knowing the answer* or *being in Michigan*, and "events," in which something happens. Events in turn divide into those that can go on indefinitely, like *running around* or *brushing your hair*, and those that culminate in an endpoint, like *winning a race* or *drawing a circle*. The ones with an endpoint are called "telic," a word related to *teleology*, from the Greek *telos*, "end." The endpoint is usually a change of state in the direct

object that was caused by the agent. The act of *drawing a circle*, for instance, is over when the circle is complete.⁹⁵ Allegedly, Lizzie Borden took an ax and gave her mother forty whacks. If so, she *killed* her (a telic event) at the moment of whichever whack it was that caused her mother to become not alive. (Borden, as it happens, was acquitted.)

Verbs are also divided by whether they describe an event that is spread out in time, like *running* or *drawing a circle* (they are called “durative”), or instantaneous, like *winning a race* or *swatting a fly*. Of course only Superman can execute an action in no time at all; the rest of us have to raise the fly swatter, bring it down, hit the fly, and so on. But the event can be thought of as instantaneous if it lies within the specious present. Linguists sometimes call these events “momentaneous,” a lovely word that was last in vogue in the seventeenth century.

To get a feel for all this, it helps, once again, to visualize time as a line.⁹⁶ Let’s depict an event that lacks a fixed boundary (like *running around*) with a fuzzy border:



This is called an “activity,” an event that is durative (it lasts in time) and atelic (it lacks an inherent endpoint). We can now use a pip for a momentaneous event, like *swatting a fly*:



A telic event has no fixed beginning, but by definition it has a terminating moment, when the agent has brought about the intended change:



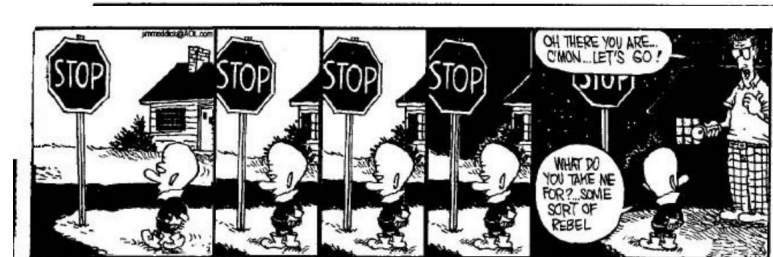
Telic events can be described in two ways: with a durative verb, which embraces both the buildup and the climax, like *drawing a circle*, or with a momentaneous verb, which zeroes in on the climax, like *winning the race*, *reaching the top*, or *arriving*. (Confusingly, linguists call these *accomplishments* and *achievements*. I can never remember which is which, so I will call the latter *culminations*.) We also have iterative verbs, like *pound a nail*:



and verbs for the inception of states, like *sit down* (as opposed to *sit*, which is an activity):



The difference between inceptive verbs and momentaneous verbs can be illustrated by our friend Mr. Pi, the space alien whose overly literal grasp of English has already illuminated a number of subtle semantic distinctions:



Monty © United Feature Syndicate, Inc.

I mentioned that a remarkable feature of the verb action classes is that they are shaped in the same way as physical objects and substances, as if events were extruded out of some kind of time-stuff.⁹⁷ Just as in the realm of matter we beheld bounded objects (*cup*) and unbounded substances (*plastic*), in the realm of time we see bounded accomplishments (*draw a circle*) and unbounded activities (*jog*). Just as we met substance words that name homogeneous aggregates (*mud*) and plurals that name aggregates made of individuals (*pebbles*), we now meet durative verbs that name a homogeneous action (like *slide*) and iterative verbs that name a series of actions (like *pound*, *beat*, and *rock*). And in the same way that a huge inventory of shape nouns (*pediment*, *cornice*, *frieze*, and so on) was reduced to a skeleton of lines, sheets, and blobs, a huge repertoire of action verbs (*drumming*, *piping*, *leaping*, and so on) is reduced to a skeleton of instants and durations. The difference is that time is one-dimensional, so there are fewer skeletal “shapes” for events to assume, and thus we are left with fewer action classes than shape classes. Still, even a one-dimensional shape can be given a zero-dimensional endpoint. Lederer wonders, “Why is it called ‘after

dark' when it is really 'after light'?" The answer is that *dark* can refer to the instant that an interlude of darkness begins. It is a perfect mirror of the answer to his question of why we say that something is *underwater* or *underground*, where a word for a three-dimensional solid may also be used for its two-dimensional boundary.

Why look at action classes so closely? It's because they play many roles in language and reasoning.⁹⁸ The action classes determine the logical conclusions one can draw from a sentence, because the truth of a proposition depends on the stretch of time it refers to. If Ivan is *running* (atelic), we can conclude that Ivan ran, but if Ivan is *drawing a circle* (telic), we cannot conclude that Ivan drew a circle—he may have been interrupted. Note again the similarity to substances and objects—half a portion of applesauce is still applesauce, but half a horse is not a horse.

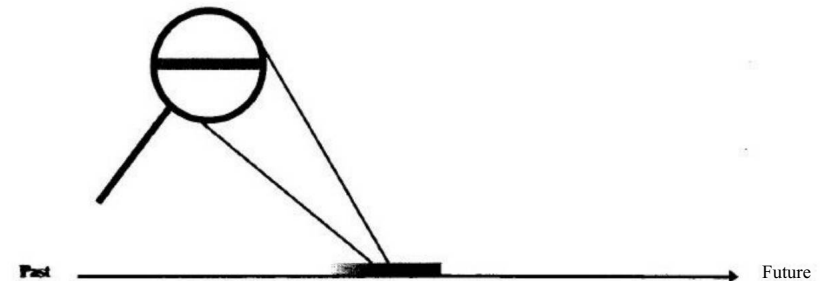
Action classes also affect the way that verbs mate with explicit expressions for time. You can say *He jogged for an hour*, but not *He swatted a fly for an hour*, because the phrase *for an hour* imposes an endpoint on an event. That works with an activity, like running, which is spread out in time and can be lopped off by a boundary, but not with a momentaneous event like swatting a fly. It's even a bit odd to say *He crossed the street for a minute* or *She wrote a paper for an hour*, since those telic accomplishments are already bounded by their culminating events and don't accept a second endpoint. But a phrase like *in an hour* works the other way around: it imposes a *beginning* boundary on an event by measuring backward from its endpoint. You can *cross the street in a minute* or *write a paper in an hour*, but you can't *jog in an hour* (other than with the meaning "an hour from now"), because it has no endpoint. Nor can you *swat a fly in an hour*, because it lacks a durative activity that can be measured out and bounded. The Doors' song "Love Me Two Times" sounds strange at first, because the temporal phrase *x times* applies only to events, not to states, and *loving someone* is a state. Of course we are meant to interpret the verb as a euphemism for having sex, which is an activity and an accomplishment (sometimes in more ways than one).

Phrases like *in an hour* and/or *an hour* are part of a mental system in which stretches of time are dynamically spun out, measured, and sliced off, like the Fates in Greek mythology determining the lives of mortals. They are temporal versions of the mental packager in the noun system which can convert substances into objects, as when you order *a beer* or

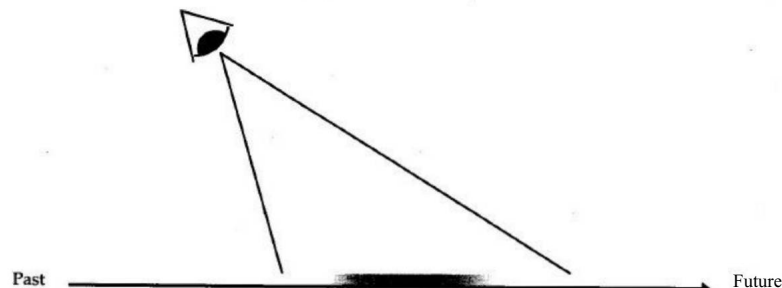
take out *three coffees*." Another way to package events is to reach for the toolbelt of English particles like *out*, *up*, and *off*, which provide a culmination point to an endless activity, as in the difference between merely *shaking* something and *shaking it up*. To shake something up means to shake it until it has changed its state, sometimes metaphorically, as when Elvis Presley confessed to being "All Shook Up." What Mr. Pi shows us with his literal-mindedness Mr. Lederer shows us with his wit, and here he calls our attention to the way that many particles with spatial senses like *up*, *down*, *up*, and *out* are also used in an aspectual sense, to cap off an activity:

Why do "slow down" and "slow up" mean the same thing?... You have to marvel at the unique lunacy of a language where a house can burn up as it burns down and in which you fill in a form by filling it out. English was invented by people, not computers That is why when the stars are out they are visible but when the lights are out they are invisible and why it is that when I wind up my watch it starts, but when I wind up this poem it ends.¹⁰⁰

Languages have an even more powerful device for packaging durative activities or grinding telic ones: the second aspect of aspect, viewpoint. Actually a better analogy than grinding and packaging is *zooming in* to scrutinize the internal stuff of an event, with its boundaries outside the field of vision, or *stepping back*, allowing the entire event, including any fuzzy boundaries, to shrink to a smudge.¹⁰¹ The first is called the *imperfective*, and can be visualized like this:



And the second is called the *perfective*, and can be visualized like this:

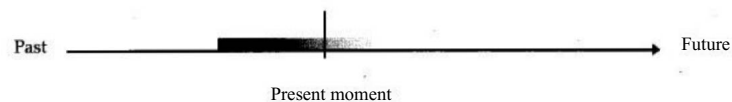


Why “perfective”? Because *perfect* can mean “complete,” not just “flawless,” as in *perfectly useless*, *a perfect nuisance*, and technical terms like a *perfect fifth* in music and a *perfect square* in mathematics. “Perfective” is thus a good term for a point of view that allows us to take in the whole event.

English has an imperfective aspect in the present progressive *Lisa is running* (as opposed to *Lisa runs*, the simple present). The progressive zooms in on a portion of the action making up a bounded event, turning it into a boundariless activity, just as one can mentally zoom in on the plastic composing a cup and think of it as a substance without literally having to grind the cup into bits. So while it’s odd to say *Lisa drove home*, *but she never got there*, you can certainly say *Lisa was driving home*, *but she never got there*—the *-ing* in *driving zeroes* in on a portion of her driving home and excludes the endpoint from one’s field of view. The imperfective is commonly used in a narrative to set the stage for an event (describing the scenery, as it were), while the past and present are used to advance the story line (as in *Lisa was driving home when suddenly a spaceship landed on the roof of her car*). Unlike many other languages, such as Russian, English doesn’t have a way to mark the perfective aspect with its own suffix. But we can interpret verbs as perfective in context, as when we say *After Sarah jogged, she took a shower*. The activity of jogging, which ordinarily has no boundaries, is now taken in as a completed event, as if from a distant vantage point.

We have visited every tense in English but one, the so-called perfect, as in *I have eaten*. The perfect, confusingly, is not the same as a perfective; indeed is not really a tense at all, but a combination of a tense and an aspect.¹⁰²

It indicates that something is currently in a state or condition that resulted from an action in the past:



For example, *I have eaten* (perfect) suggests that one is now satiated and doesn’t have to eat again, whereas *I ate* can merely describe an event in a narrative at any time in the past. Unlike the state stipulated by a telic verb like *melt the butter*, the state implied by the perfect has to be interpreted in context—it is any feature of the aftermath of an action that is now deemed significant. That’s why it takes some degree of chutzpah to say *I have spoken* or *I have arrived*, rather than the humbler *I spoke* or *I arrived*. (“Do not arouse the wrath of the Great and Powerful Oz! I said come back tomorrow! Oh! The Great Oz has spoken! Oh! Pay no attention to that man behind the curtain! The Great and Powerful Oz has spoken!”)

In theory, tense and aspect should be completely independent. That’s because the temporal contour of an event, and one’s vantage point on it, should be independent of its location in time, just as the shape of an object, and whether you have zoomed in on it, are independent of its location in space. In practice it doesn’t always work that way. That is because life as it unfolds is never perfectly synchronized with one’s speechifying, so the relation between the events taking place in the world and the precise moment you’re wagging your jaw is anything but straightforward. As a result, the interpretation of the present tense is not the same for all verbs but depends on the action class. In describing a current state, for example, you have to use the simple present—*He knows the answer*; *He wants a drink*, not *He is knowing the answer*; *He is wanting a drink*. But in describing a current activity or accomplishment, you have to use the progressive—*He is jogging*; *He is crossing the street*, not *He jogs*; *He crosses the street* (or the Italian linguist’s *get a general picture of what goes on*). Presumably this is because the progressive, which turns an action into a state, is redundant with verbs like *know* and *want* that already *are* states. But it is a prerequisite for activities and accomplishments, which are perfective by default and need to be cracked open for the present moment to have a stretch of the activity to

latch onto. Momentaneous events can't easily be described in the present at all—*He swats a fly* and *He is swatting a fly* both sound odd—because it's unlikely that a punctate event will just happen to take place at the exact instant one is describing it. The progressive turns a momentaneous event into an iterative one—*The light is flashing* means it's doing so repeatedly (compare *The light flashed*, which can mean only once). This is the kind of complexity that makes foreign speakers want to tear their hairs out.

As for the simple present tense, it is available for speakers to use in two different ways. One is in an ongoing narration. This is the tense of play-by-play sportscasting, as in *Lafleur skates down the ice... He shoots... He scores!* When the reference point of the narration is not the present moment but some point in the past, we have the “historical present,” in which a writer tries to parachute the reader into the midst of an unfolding story (*Genevieve lies awake in bed. A floorboard creaks...*). The historical present is also often used in the setup of a joke, as in *A guy walks into a bar with a duck on his head.*¹⁰³ Though the you-are-there illusion forced by the historical present can be an effective narrative device, it can also feel manipulative. Recently a Canadian columnist complained about a CBC Radio news program that seemed to him to overuse the present tense, as in “UN forces open fire on protesters.” The director explained to him that the show is supposed to sound “less analytic, less reflective” and “more dynamic, more hot” than the flagship nightly news show.¹⁰⁴

The other use for the simple present is for actions that are habitual (*Sarah jogs every day*) or generic (*Beavers build dams*), where the verb describes a *propensity* of the subject to do something. The propensity extends over time, and hence it can be said to be in effect at the present moment, even if Sarah is at work or all the world's beavers are asleep at the precise instant you utter the sentence.

And now, dear reader, you are equipped to understand the most consequential debate about tense and aspect in human history:

QUESTION: Mr. President, I want to go into a new subject area... [Your] counsel is fully aware that Ms. Lewinsky . . . has an affidavit, which they were in possession of, saying that there was absolutely no sex of any kind in any manner, shape or form with President Clinton. That statement was made by your attorney in front of Judge Susan Webber Wright.

CLINTON: That's correct.

QUESTION: That statement is a completely false statement.

Whether or not [your attorney] knew of your relationship with Ms. Lewinsky, the statement that there was no sex of any kind in any manner, shape or form with President Clinton was an utterly false statement. Is that correct?

CLINTON: It depends upon what the meaning of the word “is” is. If “is” means is and never has been, that's one thing. If it means there is none, that was a completely true statement.¹⁰⁵

In August 1998 President Clinton gave this infamous testimony (since immortalized in *Bartlett's Familiar Quotations*) to a grand jury impaneled by special prosecutor Kenneth Starr. Starr was investigating perjury and obstruction of justice in a deposition Clinton had given during a sexual harassment lawsuit by Paula Jones earlier that year, in response to accusations that Clinton had had an affair with Monica Lewinsky. Clinton's lawyer had said in the deposition that “there is absolutely no sex of any kind” between Clinton and Lewinsky. In this testimony, Clinton was affirming that the statement contained the verb *is*, the present tense, and that their affair was in fact over at the moment the statement was made, so the statement was true. Note how he correctly distinguished the present-tense *is* from the perfect *has been*, which would have implied the existence of some ongoing state that held at the moment the statement was made. The prosecutor, incredulous, continued:

QUESTION: I just want to make sure I understand you correctly. Do you mean today that because you were not engaging in sexual activity with Ms. Lewinsky during the deposition that the statement Mr. Bennett made might be literally true?

CLINTON: No, sir. I mean that at the time of the deposition . . . that was well beyond any point of improper contact between me and Ms. Lewinsky. So that anyone generally speaking in the present tense saying that was not an improper relationship would be telling the truth if that person said there was not, in the present tense—the present tense encompassing many months. That's what I meant by that.... I wasn't trying to give you a cute answer to that.

Clinton gets full marks in this test of the semantics of tense. As we have seen, other than in an ongoing narration like a play-by-play in sports, the English present tense is used to refer to a state defined by a propensity or habit, not to a specific event. And at the time at which the verb *is* was uttered, Clinton and Lewinsky had broken up and were unlikely to have sex again, so the propensity was no longer in force. Admittedly, the termination of a durative, atelic state defined by a propensity to act is inherently fuzzy (like the boundary of an *area* like *gravel* or *pebbles*). How much time must elapse since the last cigarette before a would-be former smoker can say, “I don’t smoke”?

As to whether Clinton gave a “cute answer,” this is the point at which semantics leaves off and pragmatics begins. As we shall see in chapter 8, listeners assume that speakers are conveying information relevant to what they want to know, allowing them to guess the meanings of vague expressions. This works fine when the interlocutors are cooperative and the listener’s guess is the same as the speaker’s intent, but not when they are adversaries, as in a legal investigation. As Clinton noted, “My goal in this deposition was to be truthful, but not particularly helpful.” Given that the lawyers in the Jones trial presumably wanted to know whether Clinton had ever had an affair with Lewinsky, the issue then becomes whether he was legally justified in answering the question narrowly (according to its semantics) or whether a sworn commitment to “the whole truth” required answering the question as it was intended (according to its pragmatics). The Starr report reached the latter conclusion, and cited Clinton’s testimony about the meaning of *is* as one of five instances in which he tried to obstruct justice and deceive the American people. The U.S. House of Representatives agreed, and in December 1998 voted to impeach him. The U.S. Senate disagreed, and in February 1999 voted to acquit him. In any case, Clinton started a trend of presidents getting into trouble because of the fine points of conceptual semantics, as we saw with regard to George W. Bush and the verb *to learn*.

The semantics of time has one last parallel with the semantics of space, and this one speaks to the Kantian project of identifying the abstract frameworks that organize our knowledge. Just as spatial language turns out to be defined not only by the geometry of objects but by how people use them, temporal language is defined not only by the way that events erupt and unroll according

to a clock but by the goals and powers of the actor. The action classes were originally sketched out by Aristotle, and fit with his theory that every event has a form, a substance, an agent that brought it about, and a goal that it serves. He would not be surprised to learn that each of the four major action classes (state, activity, culmination, accomplishment) smuggles in a concept of human will in addition to its concept of temporal shape.¹⁰⁶

A state is defined not just by an absence of change but by being outside the sphere of voluntary control. Generally you can’t *persuade* or *force someone to know the answer*, or talk about him *deliberately* or *carefully knowing the answer*; nor can you issue the imperative *Know the answer*. The coupling of statehood and involuntariness in our language reflects a deeper coupling of the concepts in our ascription of moral responsibility. Because we construe states as involuntary, we tend not to hold people criminally responsible for them, at least not upon careful examination. Thus in 1962 the U.S. Supreme Court ruled that while a legislature can outlaw the *use or sale* of narcotics, it cannot outlaw *being addicted* to them. Another court decision deemed it unfair to convict someone for *being drunk* in public (the case involved a man who got drunk in his home and was dragged into a public street by the police), although someone could still be prosecuted for *getting drunk* in public or for *going out in public drunk*.¹⁰⁷ One exception to this generalization is the crime of *possessing* narcotics, which is indeed a state. Perhaps not coincidentally, many people feel that such laws are unfair.

Also involuntary is the momentaneous culmination that consummates an accomplishment, like *winning a race*, *finding a diamond*, *reaching Boston*, or *noticing a painting*. These verbs don’t harmonize with adverbs of effort (*He deliberately won the race*), with verbs of initiating an action (*I persuaded him to notice the painting*), or with the imperative mood (*Find a diamond!*). Once one of these pursuits has been undertaken, it’s the world that determines the moment of culmination, not one’s intention.

Activities and accomplishments, in contrast, are generally thought of as voluntary. For that reason, accomplishment verbs, such as those in *baking a cake* and *hiding a key*, can be commanded by imperatives, and can be accompanied by volitional adverbs like *deliberately* and *carefully*. Indeed, with an accomplishment it’s the actor’s goal that determines the exact event that consummates it, such as causing a picture to come into existence in the case of *drawing a picture*, or being at the other side of the street in the case of *crossing the street*. Once again, this is not just a fine point of grammar but

a keystone of our moral sense. Since a crime requires both a bad act and a guilty mind, criminal acts are identified by activity or accomplishment verbs: *to kill*, *to steal*, *to rape*, *to bribe*, and so on. If an accomplishment has not been consummated (as in the case of a would-be strangler who is interrupted by the police), we can charge the person only with a criminal attempt. And because a culmination is construed as involuntary (it is determined by the world rather than by one's intent), people are often foggy about which crime has been committed when there is a disconnect between the intended change that defines an accomplishment verb and the actual change that took place. Many hours of law-school argumentation have been spent on what to do with a man who stabs a corpse thinking it is his sleeping enemy, or whether it makes sense to charge a shooter with attempted murder if the nearest hospital is five minutes away and his victim survives, but to charge him with murder if the nearest hospital is fifteen minutes away and the victim succumbs.

So just as spatial language does not invoke an empty coordinate system, temporal language does not invoke a free-running clock. Space is reckoned with reference to objects as they are conceived by humans, including the uses to which they are put, and time is reckoned with respect to actions as they are conceived by humans, including their abilities and intentions. As central as space and time are to our language and thought, a conscious appreciation of them as universal media into which our experiences are fitted is a refined accomplishment of the science and mathematics of the early modern period.