

Two Approaches to Tense

The Systemic Functional approach¹

Halliday & Matthiessen describe 36 different tenses in English. In theory more complex forms are possible, but in practice tenses 25 to 36 are vanishingly rare².

Past	1	Took
Present	2	Takes
Future	3	Will take
Past of past	4	Had taken
Past of present	5	Has taken
Past of future	6	Will have taken
Present of past	7	Was taking
Present of present	8	Is taking
Present of future	9	Will be taking
Future of past	10	Was going to take
Future of present	11	Is going to take
Future of future	12	Will be going to take
Past in future of past	13	Was going to have taken
Past in future of present	14	Is going to have taken
Past in future of future	15	Will be going to have taken
Present in past of past	16	Had been taking
Present in past of present	17	Has been taking
Present in past of future	18	Will have been taking
Present in future of past	19	Was going to be taking
Present in future of present	20	Is going to be taking
Present in future of future	21	Will be going to be taking
Future in past of past	22	Had been going to take
Future in past of present	23	Has been going to take
Future in past of future	24	Will have been going to take
Past in future in past of past	25	Had been going to have taken
Past in future in past of present	26	Has been going to have taken
Past in future in past of future	27	Will have been going to have taken
Present in past in future of past	28	Was going to have been taking
Present in past in future of present	29	Is going to have been taking
Present in past in future of future	30	Will be going to have been taking
Present in future in past of past	31	Had been going to be taking
Present in future in past of present	32	Has been going to be taking
Present in future in past of future	33	Will have been going to be taking
Present in past in future in past of past	34	Had been going to have been taking
Present in past in future in past of present	35	Has been going to have been taking
Present in past in future in past of future	36	Will have been going to have been taking

The SF approach is to describe what is happening in English in a systematic way, but it does not try to extrapolate a formal rule-structure for all languages from that description.

¹ Michael AK Halliday & Christian MIM Matthiessen (2004). *An Introduction to Functional Grammar* (third edition). Arnold: London, UK. Ch.6, pp.337-348.

² Martin Edwardes (2011). Are Complex tenses really real? In *Applied Linguistics, Global and Local: Proceedings of the 43rd Annual Meeting of the British Association for Applied Linguistics, 9-11 September 2010, University of Aberdeen*. Scitsiugnil Press: London, UK.

A Cognitive Approach³

The model presented here was first described by Reichenbach (1947)⁴ as an interaction between point of speech (S, always the present), the point of event (E, when the action of the verb actually takes place), and the point of reference (R, which corresponds to the location of a modelled self). Using Reichenbach's three points, seven natural tenses emerge: the present, in which the event, the modelled self and the unmodelled self are telescoped into one time point; the past, requiring a current memory of an event that has happened; the future, requiring a current forecast of an event going to happen; the past of the past, requiring a memory as a feature of a self modelled into the past; the future of the past, requiring a forecast as a feature of a self modelled into the past; the past of the future, requiring a memory as a feature of a self modelled into the future; and the future of the future, requiring a forecast as a feature of a self modelled into the future.

These seven tenses map to H&M's tenses 2, 1, 3, 4, 10, 6, and 12. The lack of methodical correspondence between the two systems means that they represent quite different approaches to tense formation.

Reichenbach's seven tenses are represented in different languages in different ways. In English they are formed from a mixture of inflections and auxiliaries, but other languages use different methods.

The seven tenses do not exhaust what we are able to do with Reichenbach's three points. Proximity allows us to use the modelled self at the point of reference as an assumed present. We can thus use expressions like *Daddy's taking us to the zoo tomorrow*: the present tense indicates that the event is current, but the word *tomorrow* tells us that it is actually going to happen in the future. Similarly, reportage often uses the present tense to create immediacy in a story about past events (for instance, *It is the eve of Waterloo; Napoleon is in his tent ...*). Proximity adds two more tenses to the original seven, as the following table shows.

Proximate tenses are not covered in the H&M model; they are semantic forms and not systemic constructs. Once again, this demonstrates quite different approaches to tense formation.

Tense	Point of Speech (S) Unmodelled self	Point of Reference (R) Modelled self	Point of Event (E)	
Simple Present	Present			Takes
Simple Past	Present		Past	Took
Simple Future	Present		Future	Will take
Past of Past	Present	Past	Past of (R)	Had taken
Future of Past	Present	Past	Future of (R)	Was going to take
Past of Future	Present	Future	Past of (R)	Will have taken
Future of Future	Present	Future	Future of (R)	Will be going to take
Proximate Past	Present	Past		Takes
Proximate Future	Present	Future		Takes

All the tenses in this table use Reichenbach's three points, but with movement of the modelled self to produce the simple tenses and the proximate tenses. Simple past and future merge the point of reference with the point of speech in the present; proximate past and future merge the point of reference with the point of event in the past or future; and present tense merges all three points in the present. Reichenbach's three point analysis thus gives us an effective way to describe the key tenses used in languages. Of course, it is possible to extend this system by adding a point of reference to the point of reference, producing four-term constructs such as *it will have been going to take* (H&M's tense 24); but these constructs are not easy to understand, and tend to introduce effects that are not strictly tense-related. For instance, the difference between *it has been going to take* (H&M 23) and *it had been going to take* (H&M 22) is that the first indicates an intention continuing into the present, while the second indicates a former intention now abandoned. There is no true four-point analysis in *I had been going to take*, other temporal effects are at work.

Doing Other Things with Time

Reichenbach's three-point system encapsulates the way time is expressed in language through modelling of self into past and future; but it can also be used to illustrate a series of other linguistic temporal effects.

³ Based on Martin Edwardes (2010). *The Origins of Grammar: an anthropological perspective*. Continuum Press: London, UK. Ch.12, pp.126-131.

⁴ Hans Reichenbach (2005 [1947]). The Tenses of Verbs. In Inderjeet Mani, James Pustejovsky & Robert Gaizauskas (eds.), *The Language of Time: A Reader*. Oxford University Press: Oxford, UK. Ch4, pp.71-76.

The first of these is continuity. The point of event can represent a single complete event (*I wrote a letter*); a single ongoing event (*I am writing a letter*); or one of a series of events (*I am writing some letters*). It can even refer to a series of events of which none are happening at the point of event (*I write a letter every week*). Continuity therefore adds width to the point of event, allowing it to express duration as well as point in time.

A second linguistic temporal effect is imminence, which is about the distances between Reichenbach's points. A point of event can be close in time to a point of reference or more distant; and a point of reference can be close to or further from the point of speech in the present. The nine tenses given above dictate the temporal ordering of point of event and point of reference, but imminence determines the distance between them.

Although imminence is in reality highly variable, in many languages only *near* and *far* are recognized. In some East African languages, there are two past tenses to indicate imminent and non-imminent events (Lee, 1992, p9)⁵, and this is partially the case in English. For instance, in the sentences *I wrote a letter* and *I have written a letter*, the point of reference is the same (the present) and the point of event is also the same (the past); but the point of event of the second sentence is closer to the present than the point of event of the first.

Imminence can occur in the future, too. In the sentences *I will write a letter* and *I am going to write a letter*, the point of reference and point of event are both the same (the present and the future respectively); but, once again, the point of event of the second sentence has greater imminence. In this case we can create even greater imminence with *I am about to write a letter*, indicating that, in English, imminence is not just a binary dichotomy of near and far.

In English, imminence is often expressed with relative adverbials, like *soon* and *just*. It can also be indicated by absolute adverbials, like *tomorrow* and *last week*, or with prepositional phrases, like *by tomorrow* or *before next week*. The relative adverbials tend to affect the distance between point of reference and point of event, while the absolute terms tend to affect the distance between point of reference and the present. Thus, in *tomorrow, I will have almost finished it*, *almost* indicates that the point of reference of *tomorrow* is close to the point of event of finishing, while *tomorrow* fixes the distance between the point of reference and the present as one day. *Almost* has a second role, converting the event from completed at the point of event to incomplete. It therefore also has an effect on the continuity of the construct, showing that temporal effects cannot always be isolated linguistically.

Adding Depth

Temporality is not just limited to individual events, it is also involved in defining order between events. With language, each signalled event is no longer isolated, it can be connected to other events in the past or future. This process, here called connectivity, is not an expression of temporality within a single language construct, it creates temporal connections between constructs; and it therefore strongly corresponds with the Systemic Functional Logical metafunction. Connectivity, in terms of temporality, is the feature that facilitates the never-ending discourse of language.

Temporal connectivity can identify events as contemporary or sequential. For instance, in *he looked and listened*, the connective *and* means that he was looking at the same time as he was listening. Different connectives can place identities into a time series: in *he ate the plum, then the peach and finally the banana*, the event, eating, is being applied to a series of objects in turn. While some connectors, like *after* and *before*, explicitly create the temporal relationship between events, this is not true for all connectors. For instance, in *he jumped on his horse and rode into the sunset* we see *and* as linking two events serially: both events are in the past, but the first has to happen before the second can occur. In comparison, in *he sat on his horse and stared at the sunset* the two actions are probably contemporary. To convert the actions to a series we would use *and then* or *just then*. Our knowledge of context is, therefore, at least as important as the words uttered in determining temporality.

Connectives allow events to be placed into a structured temporal relationship, a capacity at the heart of human story-telling. This is no small side-effect of language, it is central to it. Every time we make models we are telling ourselves a story, extrapolating existing circumstances through a net of possibilities to reach a conclusion; and if our first story does not end as we wish we can model others until we get the result we want.

Continuity works at the point of event, determining the duration of the event; and imminence works between point of event, point of reference and point of speech, determining the distances between the points. This gives a rich single dimension for linguistic expression of time. Connectivity adds another dimension to temporal space which allows individual events, each with their own timeline, to be linked together. Connectivity is perhaps the most important dimension in terms of narrative: without the ability to link constructs together logically and semantically, dialogue becomes an exchange of unrelated facts and narrative becomes impossible. Connectivity links single utterances together

⁵ David Lee (1992). *Competing Discourses: perspective and ideology in language*. Harlow, UK: Longman.

into the continuous interpersonal narrative that language has become, and it is therefore a clear differentiating feature between human language and other signalling.

Time, Uncertainty and Fiction

There is a third dimension of temporality, which is concerned with how language deals with the certainty or uncertainty of events. Conditionality allows events to be placed onto a vector of probability, which works with the other two vectors of continuity and time itself. In English, conditionality is mainly expressed through adverbials, it has only limited expression through auxiliary verbs. For instance, *I may have done* and *I may do* are permissible English forms, but **I may had done* and **I may will do* are not. With adverbials the range of temporal expression is wider: *perhaps I had done, I will possibly do, I have likely done, I was probably going to do, maybe I will have done, hopefully I will be going to do ...* These all add uncertainty onto pre-existing verb constructs.

Because our experience of past and future time is non-symmetrical, the effect of conditionality in the past and future is somewhat different. Events in the future of the point of speech already have uncertainty in that the future, by its nature, is unknown, and adding conditionality only increases the uncertainty. Events in the past, in contrast, have greater certainty, and adding conditionality can convert certainty into uncertainty. This is why conditionality in the future tends to be about volition, establishing personal control over an undetermined future, while in the past it is about review – and often regret.

Auxiliary conditional verbs (*may, could, should*, etc) also reflect the asymmetry between past and future, and the replacement of *will* with *may* illustrates this particularly well. *I may have done* does not express the same temporality as *I will have done*: while *will* expresses a point of reference in the future, *may* causes the point of reference to merge into the present. It seems as if this form of conditionality moves the point of reference through the vector of probability instead of through the time vector, which indicates that seeing conditionality as a separate dimension of temporality is a productive metaphor.

What does the vector of conditionality give us? In terms of the future, it allows us to plan, to choose between a range of alternatives; in this form, therefore, it probably existed before *Homo sapiens*. If we look at tool-making as an indicator of planning then it is indeed ancient. Experiments with New Caledonian crows (*Corvus moneduloides*) have shown them capable of planning the retrieval of difficult-to-access food, by making the tool necessary to achieve access and then using it appropriately. In the laboratory the crows worked with unfamiliar materials and an unnatural environment, but they were still able to bend a metal strip into a hook and use the hook to lift a pot of food out of an otherwise-inaccessible hole (Weir et al, 2002)⁶. Attributing to the crow the capacity to plan gives the simplest and most likely explanation for this behaviour. Other experiments with chimpanzees have shown them capable of working together in tasks that require planning for co-operative activity (Melis et al, 2006)⁷ – although they do seem to be better at individual planning for competition than shared planning for co-operation (Hare & Tomasello, 2004)⁸.

The full power of conditionality, however, only becomes available with the capacity to model the self into past and future. If the unmodelled self in the present can model what-ifs in the future then the models of the self projected into the past and future can also model what-ifs; so the self modelled into the past can model conditionality into a future which is still the unmodelled self's past. From this modelling into probability space comes all our fiction – and, indeed, a lot of our history. We can model from known facts to possibilities and, if enough facts point in the same direction, we can develop a consensus view of what has probably happened. The old Soviet adage that 'the future is certain, it is the past we cannot predict' is, for historians, too real to be funny.

Nonetheless, the power of fiction, unleashed by conditionality merged with self modelling, has been a powerful and defining feature of being human. We are a story-telling animal (Niles, 1999)⁹, probably the only one; and, if our storytelling is indeed unique, it is an important difference between us and other animals.

⁶ Alex A.S. Weir, Jackie Chappell & Alex Kacelnik (2002). Shaping of Hooks in New Caledonian Crows. In *Science*, 297: p981.

⁷ Alicia P. Melis, Brian Hare & Michael Tomasello (2006). Engineering cooperation in chimpanzees: tolerance constraints on cooperation. In *Animal Behaviour*, 72: pp275-286.

⁸ Brian Hare & Michael Tomasello (2004). Chimpanzees are more skilful in competitive than in cooperative cognitive tasks. In *Animal Behaviour*, 68: pp571-581.

⁹ John D. Niles (1999). *Homo Narrans: The Poetics and Anthropology of Oral Literature*. Philadelphia, Penn, USA: University of Pennsylvania Press.