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7 Time, Language, and Thought: What Language Can Tell Us about Our Concepts of Time

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Ever since the early years of invasion Europeans emphasized what they perceived as the unexpected and bizarre nature of the Australian continent. “Fauna and flora have strange, special properties,” wrote the French geographer Louis Grégoire in 1883. “We find magnificent flowers, rich in honey, but with no scent; fruit that resemble our pears, but hang from the tree from their largest part. . . As for the animals, they are even more peculiar.”¹ Other early anthropologists shared this perspective, and their descriptions of Australian peoples also emphasized differences. Nowhere is this truer than with respect to the notion of time. The idea that Australian Indigenous ontologies of being in time differ fundamentally from Western ones has a long history, predating anthropologist W. E. H Stanner’s coining of the now-famous notion of “everywhen” and probably as far back as ethnologists Baldwin Spencer and James Gillen’s first mention of “Dreamtime” in the last year of the nineteenth century.² Since then references to “circular” conceptions of time in Australian Indigenous cultures, or to blurred distinctions between past and present, have flourished in both academic and nonacademic writings.³

It is important to acknowledge cultural diversity and its applied consequences, and we return to the culturally specific notion of Dreamtime in the next section.⁴ Yet we suggest that the idea of collapsing past and present suggests extreme conceptual differences. Taken literally, this merging projects highly improbable “others,” which jeopardizes cross-cultural understanding and justifies discrimination. For instance, such conceptions of time are often invoked to claim that Indigenous Australians cannot be good employees, since their culturally ingrained notion of time does not equip them to attend work regularly. Having lived, worked, and generally interacted extensively with many members of several Indigenous groups in inland Arnhem Land since 1997, I (Maïa Ponsonnet) am unable to point to evidence suggesting that the people I met in this part of Australia do not differentiate between past and present. Unsurprisingly, they distinguish yesterday from tomorrow (for which their languages have dedicated words), are well aware that last week’s events will not happen a second time this week, wait for planes when these are scheduled to land, and so on.⁵ Based on day-to-day behaviors and conversations, it is clear that no one in these communities “merges past with present” in the literal sense of the expression.

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In this chapter we seek to present a nuanced understanding of cultural differences while avoiding the pitfalls of exoticization and mystification. We first consider whether the representations of time that have currency among Australian Indigenous groups can sometimes differ from Western conceptions of time and whether invoking language as evidence for culturally distinctive concepts of time is realistic. We then note caveats to this question, discussing some of the conditions under which language can or cannot reflect shared cultural representations. Next, we discuss the expression of time in Australian languages and the extent to which it may reflect culturally specific conceptions of time. To communicate the results of linguistic research to a broader audience within a reasonably short chapter, we present a somewhat schematic version of multiple arguments and positions. We have endeavored to maintain the core substance of these insights in spite of some unavoidable simplification. Finally, language is complex and so are the concepts required for its analysis. In the discussion that follows, we have sought to explain the linguistic terminology in a way that nonspecialists can understand.

Practices and Symbolic Representations

While my (Maïa Ponsonnet's) interactions with members of remote Indigenous communities in Arnhem Land highlighted fundamental commonalities in basic conceptions of time across cultures, they also revealed significant differences in practices and habits related to time. People in Arnhem Land rarely keep track of dates or of people's ages (including their own), and they rarely use watches or clocks. When they discuss the passing of time, they often relate it to the location or progression of the sun, moon, and seasonal alternations.⁶ The older Arnhem Land languages that I am familiar with have words for "before," "after," "today," and "tomorrow," but not for units of measurement of time such as "year" or "hour," and people rarely count units of time.⁷ This is also the case for some Aboriginal groups in the Western Desert who do not habitually measure time.⁸

These cultural differences have many practical consequences and are worth taking into account when carrying out tightly scheduled activities such as those involving appointments.⁹ In fact these practical differences may be one of the sources for the idea that Australian Indigenous groups perceive time differently. It is important to note that this difference is one of inclination and habit, not ability. In my experience everyone in Arnhem Land remembers the dates and times of events they care about. And historically Australian Indigenous communities have always held complex schedules for jointly organized rituals, for instance.¹⁰

When discussing the culturally specific conceptions of time of Indigenous Australians, most authors refer to the notion of Dreamtime.¹¹ While the word has complex origins, nowadays it mostly refers to a Central Australian concept also known by mainstream Australians as jukurrpa, from the Warlpiri language.¹² Jukurrpa is now used in English to refer to the time during which ancestral beings produced the world as it is today—shaping the landscape, creating peoples and their divisions into groups, setting languages, norms, rules, and so on.¹³ Beyond Central Australia, many other Australian groups have similar concepts, with some nuances. For instance, jukurrpa links with dreams because its events can be revealed to humans in dreams. This does not apply to the otherwise comparable Dalabon concept of Nayunghyunki in Arnhem Land, for instance.

This ancestral time of creation—jukurrpa or Dreamtime—is understood to be associated with the present in several ways, and these associations are the root of the notion of everywhen. First, creation

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ancestors are said to still be visible in the landscape, in the form of rocks, trees, or other natural features. Importantly, this dictates that people live in the present according to the Law set in the ancestral time, following its rules generation after generation to reproduce the same patterns. This principle imparts a strong ideal of historical continuity—that is, the perception that people’s actions, behaviors, and life should remain the same in the present as they were in the past. Among many Indigenous groups, this ideology of historical continuity is reinforced by kinship systems in which individuals along a descent line bear the same name every second or fourth generation, again and again. Anthropologists and other outsiders often produce circular diagrammatic representations of such systems.¹⁴ While such representations are mostly exogenous, they are usually endorsed by Indigenous Australians born within these systems.¹⁵

Thus among Australian Indigenous groups, representations of time as continuous and circular are prevalent at the level of elaborate, explicit cultural ideologies, institutions, and symbols. It does not follow, however, that people who embrace such representations also experience time differently at a narrower, phenomenological scale. We also note that circular representations of time are prevalent in many cultures (e.g., seasonal calendars) and that theories of history as incessant repetition are also well attested in Western traditions (e.g., religious events) and elsewhere (e.g., the notion of eternal return, which postulates that the universe repeats itself cyclically).¹⁶

Language and Thought

Because language is another symbolically loaded cultural artifact, we often turn to figurative language for evidence of culturally entrenched representations.¹⁷ Most languages across the world metaphorically map time onto space, and in English and many other European languages the dominant—albeit not unique—metaphor is that of linear movement: “the year is behind us,” “winter approaches,” “the following week,” and so on.¹⁸ Space-based metaphors for time are less frequent in Indigenous Australian languages than in European languages, yet they are attested, as illustrated in the Dalabon citation in example 1, about the succession of generations.¹⁹ Note that the metaphor in this example is compatible with movement along a cycle, but this is also true of the English metaphors given above (especially the seasonal one).

1. Nga-h-wulkun-dorrung-ninj.

1sg-r-(younger)brother-with-sit/be.pst²⁰

Ka-h-marnu-yobbo-ng wulkun-ngan.

3sg>1sg-r-ben-follow-ppfv brother-my

Lit.: “I had a (younger) brother. He followed me, my (younger) brother.”

Free: “I had a (younger) brother. He was born after me, my (younger) brother.”

If metaphors for time do not reveal significant particularism, could a more systematic examination of the encoding of time in Australian Indigenous languages tell us something about their speakers’ conception of time? Discussions around language and thought, or language and shared conceptual representations (i.e., “culture”), typically evoke linguistic relativity, also known as the Sapir-Whorf

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hypothesis.²¹ This hypothesis postulates that the grammatical features of individual languages influence how their speakers view the world.²² While linguistic relativity is the focus of much debate and contention, influence in the opposite direction—that is, from shared cultural representations to language—attracts far less discussion and has far more implicit adhesion. Whatever the directionality, postulating some influence between language and shared conceptual representations assumes that we can use language as a window on cultural representations and therefore learn about a community’s worldview by studying its language. In the following subsections we explain why language is not always a reliable window on shared cultural representations.

Words and Concepts

Beyond the case of metaphors discussed earlier, words with multiple meanings can sometimes reflect shared concepts and habits. Thus that the English word “chair” denotes either a director or a seat tells us something about culturally entrenched practices of governance; in some other cultures ruling may be associated with standing or with traveling around for instance. On the other hand, these semantic associations are often misleading, such as when the world has evolved faster than the words; for example, in spite of an etymology related to Latin *diurnalis*, “of the day,” academic journals do not appear daily.

More generally, there is no one-to-one correspondence between words and culturally salient concepts. In French, for instance, the word *dépayement* describes a pleasant feeling triggered by a change of scenery. Although not many languages have a word for this feeling, there is no indication that French people are more sensitive to changes of scenery than other Europeans. Conversely, the absence of words does not always imply cultural backgrounding. Think of how broad the word “love” is in English: many different kinds of love play central roles in our lives, yet we have not adopted more specific words to talk about them. In the same way, the absence of words for “time” in many Australian languages does not tell us much about cultural representations of time.²³ Australian languages tend to have few abstract nouns, but this does not tell anything about their speakers’ abstract thinking.²⁴

That linguistic and conceptual structures do not always directly correspond has also been tested experimentally. In one psycholinguistic study speakers of four distinct languages viewed videos of people running, walking, hopping along, and so on, and then had to sort the clips based on their similarity with one another.²⁵ The set of words for gaits available in each of the four languages in the study delineates concepts very different from those in the other three languages, yet participants sorted the clips in similar ways, independent of their native languages. Thus in this case lexical structure does not reflect speakers’ concepts.

Ad Hoc Innovations versus Intelligent Design

A naive assumption that often underpins the language-as-a-window approach is that speakers design their languages on the model of their shared concepts, as if following a plan. In reality, as historical linguists have shown, across the world language structures typically result from surface linguistic associations that have little to do with speakers’ representations. For instance, that the English phrase “going to” expresses future tense is not motivated by speakers’ conceptual association between future and movement. The details of the linguistic reality behind this pattern are complex, but in short, it

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results from a number of “accidents of history” that led to the linguistic exploitation of the mundane co-occurrences of certain situations: when one goes somewhere to do something, this activity is bound to take place in the future. “Going to” is thus frequently used to describe actions occurring in the near future, and given this association, over time it became convenient to use to express near-future tense.

Language Structures and Language Use

One of the most successful demonstrations of the correlation between linguistic and conceptual structures concerns descriptions of space. Cognitive linguist Stephen Levinson shows that speakers of languages where cardinal points (north, south, east, west) are prevalent perceive the organization of objects in space differently than do speakers of languages where “left” and “right” are available.²⁶ However, subsequent studies point out that most languages offer both cardinal points and words for “left” and “right,” so ultimately the key parameter is not a language’s distinctive structure, but which linguistic tools speakers chose to use more often.²⁷ This suggests that studying the way people talk should tell us more about their shared concepts than studying grammatical or lexical structures, a point we return to later in this chapter.

Another assumption behind the language-as-a-window approach is that the linguistic tools available in a language (e.g., words, grammatical constructions) are tailored to speakers’ communication needs and therefore reflect the way speakers describe the world. In this spirit psycholinguist Dan Slobin suggests that the way speakers describe the progression of events correlates with the constructions available in their language: whether it has specialized grammatical categories for repetition, continuity, punctual events, and so on.²⁸ The extent to which having a lexical or grammatical tool dedicated to the description of a certain aspect of the world favors communication about this aspect certainly deserves further experimental testing.²⁹

However, there is already some evidence that the tools a language offers do not necessarily influence speakers’ communication about the world in significant ways. This has been illustrated by comparing descriptions of motion events by English and Greek speakers.³⁰ English grammar typically encodes the manner of motion in basic descriptions: “she flew to New York,” “they walked to school.” Greek grammar, by contrast, uses sentences like “she went to New York,” where the manner of motion is unexpressed unless specified by an adjunct, such as “by plane.”³¹ Comparing corpora of motion-event descriptions in English and Greek, Anna Papafragou, Christine Massey, and Lila Gleitman highlight that they do not differ in the meanings they actually convey: Greek descriptions communicate manner of motion just as effectively as English descriptions.³² Indeed, Greek speakers regularly express manner using adjuncts (e.g., “by plane”), and they neglect to do so mainly when the context makes the manner obvious. This demonstrates that what lexical and grammatical tools express explicitly is only a fraction of what speakers communicate, because exploiting inferences drawn from context is an integral part of how humans use language. This observation is particularly useful when considering linguistic descriptions of time, which we discuss in the next section.

We have presented many reasons why one cannot assume that language offers a window on shared cultural representations. None of these imply that language can never tell us anything about speakers’ shared concepts. There are certainly cases where it does. However, these may be the exception rather than the rule, and therefore potential correlations between language and representations should be

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considered carefully on a case-by-case basis. We do so in the rest of this chapter with respect to the language of time in Australian Indigenous languages.

Grammatical Categories and the Expression of Time

There has been little systematic investigation of grammatical temporal categories in Australian Indigenous languages, although recently some in-depth analyses of their meanings and uses have been proposed for a small number of languages (we discuss some of these in the next section). As a result much research is still needed before we can arrive at a typology of grammatical features in this semantic domain and geographic context. More work is also needed to arrive at a precise understanding of the temporal categories labeled in grammatical descriptions generally. In this context the survey we present in this section is not representative of Australian Indigenous languages as a group; it simply shows some of the diversity in the temporal systems selected. Despite the limitations we have highlighted, one useful overview is that of linguist Peter Austin, who surveys the lexical and grammatical resources available in a range of languages that had been described at the time and which we will take as a starting point.³³ Austin's survey is introduced with a reference to the Dreamtime and the proposal that both lexical expressions of time and verbal categorizations reflect a sense of continuity of the present with the past.³⁴ However, in our opinion, the subsequent survey does not justify this cultural association explicitly.

Traditionally, tense is defined as the grammaticized expression of location in time—that is, when time is expressed using features of the grammar as opposed to simple words.³⁵ For instance, in English we can express time with the word “before” or by using a past tense flagged by an -ed ending, as in “he looked.” Only the latter falls under the category of what linguists call tense. More precisely, tense formally expresses temporal reference, which is a relation between the time at which an utterance is made and the time the utterance is about.

We use the terms “topic time” for the time “I am talking about” and “time of utterance” for the time “at which I speak.”³⁶ Time of utterance is constantly updated as we speak; topic time constrains the time for which a speaker makes a claim. For instance, consider the following dialogue between a judge and a witness:

Judge: What did you notice when you looked into the room?

Witness: There was a book on the table. It was in Russian.³⁷

The topic time is established by the judge's question as the time when the witness looked into the room. That the book was in Russian is a permanent property; if the book still exists at the time of utterance, it is still in Russian, but the witness uses the past tense to constrain the claim to the topic time, the time under discussion. Thus topic time is not the actual time during which the situation held, the latter being the time of situation. This distinction is important to understand how we represent time in language and shows that language does not simply represent objective time.

Turning now to Austin's survey of tense systems in selected Australian Indigenous languages, we see that the variation found there reflects that found in languages around the world more generally. First, Austin discusses a type of tense called “relative tense,” which locates topic time not in relation to time

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of utterance but in relation to another time.³⁸ English expresses relative temporal reference with what are called absolute-relative tenses, the past perfect and future of the past.³⁹ The forms respectively convey anteriority and posteriority relative to a past time that itself has absolute time reference (it is past in relation to the time of utterance), as seen in examples 2a and 2b:

2a. Max arrived at 10. Bill had left a note for him.

2b. Lilly met Max at the party. She didn't know then that she would/was going to fall in love with him and eventually marry him.

Austin cites an example of relative tense in Jiwarli (Western Australia), where the temporal reference of verbs in dependent clauses is relative to that of a main verb.⁴⁰ An example of relative tense in independent clauses can be found in a neighboring language, Martuthunira, whose future tense form is used to talk not only about situations posterior to time of utterance but also posterior to another time.⁴¹ Contrary to English, where the future of the past is expressed by “would”/“was going to,” contrasting with the forms “will”/“is going to,” in Martuthunira the form of the verb is the same in absolute and relative uses.⁴² In such cases the context clarifies whether a situation is to be located relative to time of utterance or another time. Relative tense is also attested in other languages, such as Hebrew.⁴³ Therefore, there is no reason to believe that this reflects a specifically Australian conception of time rather than being a reasonably common way for languages to express relative time.

Austin also finds that the number of tenses in different languages varies considerably.⁴⁴ Yidiny (Queensland) was initially described as having a past/nonpast contrast; in other words, the present and future have the same form, different from that of the past. This is similar to Japanese, for example, but also to English, where the future is expressed by “will” and technically is not a tense. Under this analysis English also has two tenses, past and nonpast.

Jiwarli has a threefold distinction in its verbal inflections between past, present, and future, just like French. Kala Lagaw Ya (Torres Strait Islands) has a system with eight “remoteness” distinctions. Different suffixes on the verb can express remote past, yesterday past, last night past, today past, present, near future, tomorrow future, and remote future.⁴⁵ Such systems are sometimes called metrical tense systems, as they measure the temporal distance from the time of utterance in a fine-grained manner. Once again such systems are attested in other parts of the world. They are, for instance, common in the Bantu languages of Africa (e.g., Kikuyu) and the languages of Papua New Guinea.⁴⁶

Such a rich system of temporal remoteness distinctions in Kala Lagaw Ya certainly does not suggest that its speakers collapse past and present, and the diversity of temporal systems in languages across the continent does not suggest cultural influence. At the other extreme some Australian languages have been hypothesized to be tenseless. Following linguist Bernard Comrie, Austin discusses Dyirbal and Yidiny, suggesting that the former may have a system based on mood distinguishing what is actual from what is nonactual (e.g., potential) and the latter based on aspect (contrasting perfective and imperfective).⁴⁷

Determining whether a language has tense is clearly a delicate matter and requires detailed analysis, something that even a descriptive grammar of a language cannot address. For instance, a detailed semantic analysis has recently proposed that St'át'imcets (Lillooet Salish) be regarded as a “superficially

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tenseless language.”⁴⁸ Nonetheless, some linguists have distinguished tensed languages from tenseless ones. The observation that the Hopi language had no tense played a key role in Edward Sapir’s original articulation of the linguistic relativity hypothesis. However, the absence of tense cannot readily be treated as evidence of speakers’ conceptions of time. About half of the world’s languages have no tense.⁴⁹ These include Mandarin (China), Yucatec (Mexico), Kalaallisut (Greenland), and Vietnamese.⁵⁰ A tenseless language does not mean that speakers cannot locate in time the situations they describe. Rather, much of the temporal information is conveyed by another grammatical category often associated with tense, called aspect; in addition, pragmatic inferences from context and lexical expressions such as adverbials (e.g., “yesterday,” “in the past”) are used when further clarification is required.

Comrie defines aspect as “different ways of viewing the internal temporal constituency of a situation.”⁵¹ There are two levels of aspectual meaning: one is expressed grammatically through marking on verbs (viewpoint aspect); the other is inherent to the lexical meaning of verbs (situation aspect).⁵² In Wolfgang Klein’s framework aspect expresses a relation between topic time—the time under discussion—and time of situation.⁵³ A cross-linguistically widespread viewpoint aspect opposition distinguishes situations that are viewed as a single whole from situations that are viewed as ongoing at a given time. Linguists call the former perfective and the latter imperfective. Consider examples 3a and 3b in English:

3a. Max built a house (that summer).

3b. Max was building a house (when I visited him that summer).

Example 3a presents the house-building event perfectly, as whole and as completed—here, in the past. On the other hand, example 3b presents it imperfectly, as it focuses only on the middle part of the event, disregarding its beginning or end. With respect to situation aspect, verb phrases can be classified into different types, two of which are of interest here: bounded events (also called telic events) and unbounded events.⁵³ To simplify, bounded events inherently contain a final change of state serving as boundary. For example, “build a house” describes a situation that cannot continue beyond the time when the house is finally built. Unbounded events do not contain such a final boundary and are illustrated by such terms as “walk,” “be happy,” and so forth.

It is well accepted that the following general aspectual principles hold across languages:⁵⁴ Events presented perfectly are included in the topic time interval. In example 3a the building of a house is fully contained in the topic time, which can be explicitly denoted by an adverbial such as “that summer.” Events presented imperfectly overlap the topic time interval; in example 3b the topic time is “when I visited him last summer,” and the building of a house overlaps with it. It is not contained within it, as Max would have started the building before my visit and continued it after I left. It is viewed imperfectly, as ongoing at the time.

In addition, speakers interpret time based on pragmatic principles. Pragmatic refers to one of the ways in which human languages express meanings: semantic meaning is the core, invariant meaning of expressions; while pragmatic meaning results from the interaction of semantic meaning with context. Pragmatic meaning is more fluid and follows the assumption that speakers cooperate in conversation to

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infer specific meanings even when they are not expressed explicitly. In addition to the aspectual principles we have described, linguists Carlota Smith and Mary Erbaugh initially proposed a set of default pragmatic assumptions for the interpretation of temporal relations, which we summarize here as an example showing the various approaches speakers might use to temporally locate situations:⁵⁵

The Deictic Principle states that time of utterance is the central orientation point for language by default: past and future precede and follow it respectively. In other words, the speaker's "here and now" is the canonical orientation point.

The Bounded Event Constraint predicts that bounded situations cannot be located in the present. This is because as the time of utterance is constantly updated in discourse, it has no duration and consequently a bounded event cannot be included in it. Either the situation needs to be in the imperfective aspect or it must be a state (which has duration).

The Simplicity Principle of Interpretation says that hearers choose the interpretation requiring the least added or inferred interpretation. For instance, it can be argued that even if temporally the past and the future are just mirror images, the future is in fact more complex because it involves uncertainty. Therefore, given a choice between a past or future interpretation, the past is a simpler interpretation.

As a result we have a set of default assumptions for tenseless languages: unbounded situations are located in the present; bounded situations are located in the past; locating a situation in the future requires explicit information (e.g., a modal auxiliary like the English "will" or a future time adverb like "later"). To illustrate we can consider examples 4a and 4b from Mandarin:⁵⁶

4a. Ta dapuo yi-ge hua ping.

he break one-cl flower vase

"He broke a flower vase."

4b. Ta hen congming.

he very clever

"He is very clever."

Both verb forms could be used to describe situations with a different time reference than they do in these examples; they do not in themselves express tense. But by the principles we have outlined, in example 4a past temporal location is chosen in the absence of other information because of the bounded nature of the event of breaking a vase. On the other hand, as example 4b describes a state, it leads to an unmarked present time interpretation.

In languages that have grammatical tense, aspect also plays a role in the way we interpret temporal relations between situations. Pragmatically inferred discourse relations between sentences additionally (and importantly) enable a hearer to draw temporal inferences.⁵⁷ Consider example 5:

5. Max came in. He sat down and switched the tv on. The Eagles were playing an important match.

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The entire situation is described using the past tense, which in English does not tell us anything about whether the events either are successive or overlap each other. We understand that the first three clauses all describe bounded events (“came,” “sat down,” “switched the tv on”). We also understand that the events happened in the order in which they are described to us (following Grice’s principle that speakers are assumed to be “orderly”).⁵⁸ The last situation is described imperfectly (“were playing”) and presents a backgrounded event. This tells us that this event was ongoing at topic time, and we therefore know that it overlaps with the time of switching on the television in the situation described. Thus even with languages that have tense, speakers also rely on other means to describe the temporal structure of the situations they talk about.

In summary this brief overview has shown that languages vary greatly in the grammatical resources available to express temporal location and sequence. In general the burden of expressing temporal concepts can fall to the semantics of lexical expressions (such as temporal adverbs) and grammatical categories (tense, aspect), to pragmatic principles, or to various combinations of the above, depending on the specific categories available in a given language. Within this variation all languages offer effective means of expressing temporal location and sequence, and all can characterize situations as occurring at, before, or after a point of reference. From this perspective the exact shape of the system cannot tell us much about the way speakers construe time.

Temporality in Narratives

As we have discussed, the grammatical tools available to talk about time in Australian Indigenous languages present no cross-linguistically remarkable traits; they mirror what we find across the world. What about the way these tools are put to use? Could a close examination of how grammatical temporal categories operate in Australian narratives, and more generally of how narratives are temporally constructed, shed light on culturally specific conceptions of time?

A case in point here is the use of a type of temporal clitics that have been reported in several Australian languages. “Clitics” is a linguistic term that designates small pieces of words that occur only in combination with other words; an English example is the possessive ’s. Many Australian Indigenous languages have an unusual type of temporal clitics, which have been analyzed in some detail in several languages: =rru in Panyjima (Pama-Nyungan, Western Australia) and Martuthunira (Pama-Nyungan, Western Australia); =biyang in Jaminjung (Pama-Nyungan, Northern Territory); and =lku in Walpiri (Pama-Nyungan, Northern Territory).⁵⁹ What is interesting about these clitics is that they are the equivalent of either the English “and then” or “and now,” depending on the tense or time under discussion. Semantically these clitics always mean that the topic time has moved forward after a previously described event and that this latter event has been completed, so the clitic signals temporal succession and a change of state, which in an English narrative may be rendered as “and then.” If the topic time is the present, something is the case now that was not the case before, which translates as “and now.” This is illustrated in examples 6a and 6b from Jaminjung, commenting on an old photo showing a partially constructed shed:

- 6a. gurrany burrb yirri-w-arra-nyi girrang,
neg finish 13pl>3sg-pot-put-ipfv yet

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ga-yu=biyang ngarlu \burrb-nyunga na,

3sg-be.prs=seq shade finish-orig now

“we hadn’t yet finished putting it (at the time the photo was taken), but the shed exists now, it is finished now”⁶⁰

6b. balarraj=biyang burri-ngawu, thanthu=wung

cliff=seq 3pl>3sg-see.pst dem=restr

“they then saw a cliff, right there”

jajurr=biyang ga-rdba-ny=ni yumburu-wurru=marlang,

halt=seq 3sg-fall-pst=ds horn-propr=given

“he stopped abruptly, the reindeer”

jarlig=biyang.. ga-rdba-ny jamurrugu-ngining \

child=seq 3sg-fall-pst down-loc.all

“the child then fell down towards the bottom”⁶¹

{~?~IM: insert unp-mcgrath-fig12 here.}

Figure 12 is a simplified representation of how the meaning of =biyang is the result of a composition of semantic information contributed by the clitic itself and the grammatical tense of the verb or inferred temporal location.⁶² As a “now” the clitic expresses a meaning found in some languages (e.g., Russian and Korean) that have more than one word for now, one of which can be used only if a change of state has occurred. As a “then” =biyang progresses time forward in past or future narratives. Dench describes the function of the clitic =rru in Martuthunira in such contexts as serving “to define a kind of narrative present, a statement that what has already been said can be now taken as established, and that the narrative will build from this point.”⁶³ For Panyjima Marie-Eve Ritz, Alan Dench, and Patrick Caudal conclude that “while -rru often corresponds to the adverb ‘then’ in English, its contrastive properties liken it more to the adverb ‘now’ in other languages, especially when the latter is used in non-present time contexts.”⁶⁴ The English word now can also be used in past narratives with the same function, as in example 7:

7. “Within a couple of minutes a huge male tiger . . . emerged from behind some rocks and bushes and lay down in a clearing close beside her. The tigress now got up again as if in a half daze.”⁶⁵

However, such uses are more stylistically marked in English, as now is primarily used to denote the time of utterance.⁶⁶ By contrast, in the languages where they exist Australian now/then clitics appear to be the default linguistic tools in narratives. Thus these clitics describe progression in past and present time indifferently. Their linguistic analysis shows that the semantic features that make up the meaning of English words like now or then can be further isolated and composed in a different way in other languages. Ultimately, linguistic analysis cannot establish whether differences in the way components of

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meaning combine to make a word makes a difference in speakers' thoughts about temporal relations. The fact remains that speakers can express any meaning, albeit using different means.

Another aspect of language use that may be useful to examine is how tenses are actually employed in Australian narratives. Cross-linguistically, uses of tenses in past narratives often show great flexibility, and there is often a misalignment between strict semantics and the pragmatic interpretation of the time used to describe events.

As mentioned earlier, Kala Lagaw Ya has eight temporal remoteness distinctions. Perhaps surprisingly, examination of tense usage shows that such distinctions are not exploited in past narratives. Lesley Stirling instead finds that past events are presented with the remote past in alternation with frequent use of the present.⁶⁷ Relative proportions of present in comparison with remote past in three Kala Lagaw Ya narratives is 38.7 percent, 40.9 percent, and 70.3 percent; on average, the present is used roughly as often as the remote past. We do not have many points of comparison with other languages available, but one study finds that in English narratives only about 30 percent of sentences are in narrative present.⁶⁸ Thus it seems that that Kala Lagaw Ya speakers use the present more frequently than English speakers to talk about the past.

In Martuthunira a tense other than past (here the relative future) is used unexpectedly frequently in past narratives—the ratio of past to future in narrative segments is 3:2.⁶⁹ This is illustrated in example 8, from a distant past story about the creation of the first boomerang:

8. Ngunhaa kanarri-lha=rru puni-lha.

that.nom come-past=now go-past

“It [=the boomerang] came now, having gone.”

Ngunhaa, wirra, parrani-layi, ngulangu=lwa karti-ngka

that.nom boomerang return-fut there=yk side-loc

pungka-lu, manku-ngu-layi.

fall-purpss grab-pass-fut

“It, the boomerang, comes back to fall right there by [his] side and is picked up.”⁷⁰

The first line in example 8 shows that the clitic =rru resets the time in the narrative (we are now talking about the time of boomerang coming back). Then the future is used, and we understand that the picking up occurs after the returning of the boomerang has been completed. Thus in combination with the past, the future is used to progress time in the story. The past tense on the first verb makes it clear that the story happened before the time of utterance, so the future cannot be understood to denote events after the time of utterance; rather, it is clear that they occurred in the past and in temporal succession. More research is needed to assess whether this tendency to make extensive use of tenses other than past to talk about past events, as illustrated for Kala Lagaw Ya and Martuthunira, may also be attested in some other Australian languages.

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So what do these uses of present or future tenses in narratives tell us about culturally specific representations of time? Generally, narrative use of tenses is a device designed to produce special stylistic effects. Tense per se may not always be crucial to understand temporal structures in narratives. Once past location has been established, maybe in the introduction to a story, what often matters most is the temporal location of events relative to each other. Languages exploit all sorts of possibilities. Example 9 illustrates the use of both narrative present and future to vividly recount past events in French:

9. En 1789, le peuple de Paris prend (Present) la Bastille. La garnison a résisté (Present Perfect) pendant une heure et demie. La foule massacrera (Future) le gouverneur sur le chemin de l'hôtel de ville.⁷¹

"In 1789 the people of Paris take the Bastille. The garrison has resisted for an hour and a half. The crowd will murder the governor on the way to the town hall."

Such complex uses of tenses are stylistic opportunities available to (almost) any language and as such cannot be read as evidence of culturally specific conceptions of time. It is conceivable that such uses in mythical narratives depicting ancient times in Australian Indigenous languages may symbolically convey that past events are still part of the present. Such stylistic practices could then be interpreted as a form of cultural symbol (in the sense discussed in the first section of this chapter), where time is represented as nonlinear for stylistic purposes. However, reporting past events as if they were occurring now is a common strategy in storytelling across languages and cultures, and it is employed to bring vividness to a story and to provide structure, especially to oral discourse.

Conclusions

This chapter has examined what properties of Australian Indigenous languages can tell us about their speakers' culturally specific conceptions of time, in circular instead of linear time or a blurred distinction between past and present. At the level of day-to-day observation, in our experience, behaviors and activities among the Australian Indigenous communities we are familiar with are carried out on the assumption of a linear succession between past and present. Some representations of time as circular or continuous emerge at the level of religious concepts such as *jukurrpa* or *Dreamtime*, associated ideals of continuity in history. Such cultural traits can invite symbolic representations of time as circular; however, circular or continuous cultural motives are also attested in Western culture and elsewhere.

Linguistically speaking, Australian Indigenous languages seem to use metaphors for time in ways that are comparable to many languages across the world. From the little linguists currently know, the grammatical categories that express temporal concepts in Indigenous languages of Australia appear to exhibit great diversity, and this reflects the diversity found more generally in the world's languages. Some Australian languages may indeed be grammatically tenseless. If this is really the case, it does not imply that their speakers have a different conception of time. Instead, recent research into tense and aspect has shown how in so-called tenseless languages, semantics and pragmatics share the burden of producing linguistic meaning: what is explicit in the grammar or vocabulary of one language may be implicit or inferable in another. Either way, speakers of all languages can express temporal reference, regardless of whether the language has tense or how many tenses their grammar features. In other

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words, grammatical tense systems do not offer a window onto speakers' conceptual representations of time.

Beyond grammatical categories and systems, we also examined discourse uses of temporal expressions in narratives told by speakers of some Australian Indigenous languages. We argued that the narrative tools used by these speakers are attested in other languages across the world and are compatible with linear representations of time.

Clearly, the study of how time is represented in different languages reveals a fascinating diversity. It is tempting to magnify differences and see them as influencing or reflecting the way speakers think. A correlation in the fact that people who speak different languages belong to different cultures does not imply that there is causation. At the same time, the grammars of some languages may highlight certain aspects of meaning that other languages leave implicit. The extent to which this may affect speakers' views of the world is still open to debate. Notwithstanding some cultural specificity, the idea that Indigenous Australians inhabit time in ways that are incommensurable with other experiences of time, we suggest, owes more to romantic visions of Indigenous cultures than to evidence within Australian languages.

Notes

1. Grégoire, *Géographie générale illustrée* (translated by the authors).
2. Stanner, "Dreaming"; Wolfe, "On Being Woken Up."
3. Janca and Bullen, "Aboriginal Concept of Time"; Walker, "Eternity Now."
4. Janca and Bullen, "Aboriginal Concept of Time"; Musharbash, "Boredom, Time and Modernity."
5. Dixon, *Languages of Australia*, 283; Gaby, "Thaayorre Think of Time," 3; Musharbash, "Boredom, Time and Modernity."
6. See also chapters 5 and 10 in this volume.
7. Dalabon, Rembarrnga, and Bininj Kun-wok, all from the Gunwinyguan family (non-Pama-Nyungan). Such words are available in Kriol, a creole now spoken in many inland Arnhem Land communities. However, measuring time is not a prominent practice among Kriol speakers either.
8. Poirier, *World of Relationships*, 59.
9. Janca and Bullen, "Aboriginal Concept of Time."
10. Gaby, "Thaayorre Think of Time," 3.

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11. The term Dreaming is also found, albeit less frequently. To my knowledge, the distinction between the two is not clearly established. In Kriol, drimin refers to totemic birth places. See Austin, "Temporal Reference," 146100; Janca and Bullen, "Aboriginal Concept of Time," 40.
12. Elkin, *Australian Aborigines*; Meggitt, *Desert People*; Spencer and Gillen, *Native Tribes*; Stanner, "Dreaming." For a detailed history, see Wolfe, "On Being Woken Up."
13. Goddard and Wierzbicka, "What Does Jukurrpa Mean?"; Green, "Altyerre Story"; Turner, *Iwenhe Tyernty*.
14. See, for example, Dousset, *Australian Aboriginal Kinship*, 109; Dobson and Henderson, *Anpernirrentye*.
15. Dousset, "De l'humanisation."
16. Nietzsche, *Ecce Homo*. See also chapter 11 in this volume.
17. Kövecses, *Metaphor*; Lakoff, *Women, Fire*; Lakoff and Johnson, *Metaphors We Live By*.
18. Evans, *Structure of Time*; Haspelmath, *From Space to Time*; Traugott, "On the Expression."
19. Gaby, "Thaayorre Think of Time." But see chapter 5 in this volume for examples of spatial demonstratives used to indicate temporal reference. ¹⁰¹Example is from "A Culturally Informed Corpus of Dalabon," *Endangered Language Archive*, recording #20110519b_001_lb_nd 024, <https://www.elararchive.org/dk0071/#:~:text=This%20corpus%20served%20as%20a,diminutives%2C%20interjections%2C%20prosody>.
20. Abbreviations and symbols used in the examples: ben = Benefactive; cl = classifier; dem = demonstrative (general, distance neutral); ds = different subject clitic; fut = future tense; given = np referent given/accessible; ipfv = (past) imperfective; loc = locative; loc.all = allative (on locational nominals); neg = negation; nom = nominative; orig = origin case, source, or cause; pass = passive; pl = plural; pot = potential/future; ppfv = past perfective; propr = proprietive; prs = present tense; pst = past tense; purpss = purposive same subject; R = realis mood; restr = restrictive; seq = sequential clitic; sg or sg = singular; yk = "you know" clitic; 3 = third person; 13 = exclusive first person; \ = falling prosodic contour; > = separates glosses for actor and undergoer in inflecting verb pronominal prefixes.
21. Whorf, *Language, Thought, and Reality*.
22. Lucy, *Language Diversity and Thought*.

100 The Austin article has the page range of 143–69. Please cite the correct page number in this note. (You fixed the others but overlooked this one.) It's page 146.

101 I added the citation you provided to this note, where example 1 is first mentioned. (I styled it to follow CMS guidelines.) But are all the examples from this source or just example 1? If it's the source of all the examples, this should be changed to say "Examples are from," using the plural instead. IT'S ONLY THIS EXAMPLE, SO WE SHOULD KEEP THE SINGULAR.

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23. However, Wik has such a word; see chapter 10 in this volume.
24. Ponsonnet, "Emotion Nouns."
25. Malt et al., "Do Words Reveal Concepts?" The four languages were English, Spanish, Dutch, and Japanese.
26. Levinson, *Space in Language*.
27. Palmer et al., "How Does the Environment?"
28. Slobin, "From 'Thought and Language.'"
29. Bowerman and Choi, "Space under Construction."
30. Papafragou, Massey, and Gleitman, "When English Proposes."
31. Talmy, "Semantics and Syntax."
32. Papafragou, Massey, and Gleitman, "When English Proposes."
33. Austin, "Temporal Reference."
34. Austin, "Temporal Reference," 146.
35. For example, Comrie, *Tense*. This traditional definition is a simplification, as in many languages grammatical affixes on verbs combine temporal, aspectual, and modal information. See the definitions of aspect and modality below.
36. Klein, *Time in Language*.
37. Klein, *Time in Language*, 3.
38. Austin, "Temporal Reference."
39. Comrie, *Tense*.
40. Austin, "Temporal Reference," 157.
41. Dench, *Martuthunira*.
42. We ignore here the many modal meanings of "would" to confine the discussion to the relative nature of tenses. Futures more generally are viewed by many as conveying modality. Simply put, modality has to do with the expression of (im)possibility and (un)certainly; however, a discussion of this meaning category would go beyond the scope of this chapter.
43. Hatav, "Bound Tenses."
44. Austin, "Temporal Reference," 156.
45. Bani and Klokeid, *Papers*.
46. Botne, "Remoteness Distinctions"; Cable, "Beyond the Past"; Foley, *Papuan Languages*.

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47. Comrie, *Tense*, 45, 49; Austin, "Temporal Reference" 156.
48. Matthewson, "Temporal Semantics."
49. DeCaen, "Tenseless Languages," 41.
50. Lin, "Temporal Reference"; Bohnemeyer, *Grammar of Time Reference*; Bittner, "Future Discourse"; Ngo, "Translation."
51. Comrie, *Aspect*, 4.
52. Smith, *Parameter of Aspect*.
53. Klein, *Time in Language*. By "verb phrases" we mean both simple lexical verbs, such as "walk," and more complex verbal expressions, such as "build a house."
54. For example, Smith, *Parameter of Aspect*; Smith, "Aspectual Entities and Tense"; Kamp and Reyle, *From Discourse to Logic*; Klein, *Time in Language*; Kamp, Genabith, and Reyle, "Discourse Representation Theory."
55. Smith and Erbaugh, "Temporal Interpretation"; Smith, "Aspectual Entities and Tense." These generalizations only partly account for some of the phenomena. For critical discussion, see, e.g., Tonhauser, "Cross Linguistic Temporal Reference."
56. Lin, "Temporal Reference," 262–63; see also Tonhauser, "Cross Linguistic Temporal Reference," 142.
57. Asher and Lascarides, *Logics of Conversation*.
58. Grice, "Logic and Conversation."
59. Ritz, Dench, and Caudal, "Now or Then?"; Dench, *Martuthunira*; Ritz and Schultze-Berndt, "Time for a Change?"; Browne, "Contrast and Retroactive Implicatures."
60. Ritz and Schultze-Berndt, "Time for a Change?," 8.
61. Ritz and Schultze-Berndt, "Time for a Change?," 5.
62. For more detail, see Ritz and Schultze-Berndt, "Time for a Change?"
63. Dench, *Martuthunira*, 184 (emphasis added).
64. Ritz, Dench, and Caudal, "Now or Then?," 41 (emphasis added).
65. Altshuler, *Events, States and Times*, 37.
66. Hunter, "Now."
67. Stirling, "Tense/Aspect Shifting."
68. Levey, "Tense Variation," 140.
69. Ritz and Dench, "Le futur en Martuthunira."

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70. Dench, Martuthunira, 291.

71. Example from Wikipédia, “Présent Historique,” last modified November 11, 2019, https://fr.wikipedia.org/wiki/Pr%C3%A9sent_historique (translated by the authors).

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