Temporal Adverbials and Stereotypical Intervals

Tony Wright
The University of Texas

1. Introduction

This study will consider the semantic behavior of the temporal negators *not yet* and *never* in English. In this paper, I show that *not yet*, by default, uses the stereotypical intervals connected with certain events to determine the time span of its negation, while *never* systematically ignores these stereotypical intervals. I show that in order to correctly distinguish between these two lexical items, it will be necessary to use Discourse Representation Structures in conjunction with a Semantic Frame-linked denotation for *not yet*.

1.1. Research questions

1. How must the denotations of *not yet* and *never* be different in order to capture their meaning and behavior with respect to the tense/aspect system of English?
2. How are *not yet* and *never* similar/different in terms of their behavior in neutral temporal contexts (i.e., in single-sentence discourses or in discourses where there is no contextually-determined interval (CDI) to serve as the span of negation), in linguistic contexts with an established CDI (such as that provided by temporal adverbials), and in conjunction with events which have or lack stereotypical intervals?
3. How can semantic frame-linked denotations be used in Discourse Representation Structures to correctly model the behaviors of *not yet* and *never*?

2. The meaning and use of *not yet* and *never* in the present perfect[1]

2.1. Preliminary Data

Let us consider some examples featuring *not yet* and *never* in otherwise identical sentences.

(1) Pat hasn't eaten lunch yet.
(2) Pat has never eaten lunch.

A basic difference in the meaning of these sentences is evident. Sentence (1), with *not yet*, conveys that Pat has not eaten lunch within a given period of time which includes speech time. The most natural interpretation of this period of time would be the current day during which the utterance occurs. Sentence (2), identical to (1), but with *never* instead of *not yet,* is quite different. It conveys that Pat hasn't eaten lunch at any time up to the present, possibly including the span of his lifetime so far. This is a strange assertion in terms of world knowledge, but it is possible that a person might have skipped lunch every day of his or her life up to the present.

Let us consider some further examples:

[1] Because many native speakers of English (although not the author) find sentences in the simple present tense with *not yet*, such as 'Pat didn't eat lunch yet,' questionable or ungrammatical, and in the interest of space, this paper will deal only with sentences in the present perfect.

 Proceedings of the 29th West Coast Conference on Formal Linguistics, ed. Jaehoon Choi et al., 276-284. Somerville, MA: Cascadilla Proceedings Project.

(3) This atmosphere of understanding has been particularly noticeable where relations are concerned between the colonialist powers and those who have never, or not for a long time, had such problems. (Brown Corpus)

Item (3) is interesting in that it contrasts *never* with *not for a long time*, indicating that the two do not mean the same thing. The contrast here is that *never* is a negation of the event *have such problems* for all times from the present on back as far as we can conceptualize, while *not for a long time* is a negation of this event for a more limited span of time. *Never* typically encodes, in present perfect sentences, a negation for all times earlier than or equal to speech time.

2.2. Stereotypical intervals

If we return to examples (1) and (2), repeated as (4) and (5), below, we can notice something interesting about the event described in them:

(4) Pat hasn't eaten lunch yet.
(5) Pat has never eaten lunch.

The event *eat lunch* is one that we know, as a part of world knowledge, occurs at predictable intervals: lunch is a mealtime, and occurs roughly once every twenty-four hours. A speaker of English understands (4) to mean that Pat hasn't eaten lunch during the current interval of time in which one would normally eat lunch. A speaker of English understands (5), however, to mean that Pat has never eaten lunch within a larger time frame. In default of other temporal context, (5) means that Pat has never eaten lunch at any time up to now (i.e., in his life). Temporal adverbials can give (5) a more narrow time frame, however:

(6) Pat has been working at this firm for six months, and in all that time he has never eaten lunch.
(7) Pat's been on this cruise for a week now, and he's never eaten lunch.

We can see from these examples that the default interpretation of *never* (in neutral contexts) and interpretations in more temporally limited contexts is similar. *Never* negates events/states for the entirety of a given span of time, and in the default case this time goes all the way back to the earliest conceivable time (as discussed earlier). *Not yet*, in contrast behaves differently. In (4), by default it picks out only the current interval for the event *eat lunch* as the time frame for negation. I will call this current interval the stereotypical interval (SI) of *eat lunch*.

2.3. Stereotypical intervals vs. linguistic context

We have already seen, in section 2.2, cases where the time span of *never* can be delimited by context. What about SI events with *never*? What about SI events with *not yet* in a delimiting temporal context? Let us consider the following examples.

(8) Jeff has been staying with us for a week and . . .
    a. he hasn't shaved yet.
    b. he has never shaved.
(9) I've been living here for six months and . . .
    a. I haven't paid the rent yet.
    b. I have never paid the rent.
(10) Since the military junta took power thirty years ago,
    a. elections haven't taken place yet.
    b. elections have never taken place.

We can see that the (a) and (b) sentences in this case are essentially synonymous. With an explicit linguistic context denoting a time span, *not yet* and *never* behave the same in negating that

contextually-determined time span. I will refer to this as the contextually-determined interval (CDI). *Not yet*, which normally picks out the SI as its time span for negation, ignores the SI in favor of the CDI, even when—as is the case in (8)–(10)—this time span is much larger than the SI typically associated with the event. *Never*, as we would expect, behaves with SI events as it does with non-SI events and defers to linguistic context delimiting its time span of negation.

2.4. Summary

The patterns of interpretations described so far are summarized in Tables 1 and 2:

	Time span of application	
	Events with Stereotypical Intervals (SIs)	Non-SI Events
not yet	SI	all times $t \leq n$
Never	all times $t \leq n$ (n = speech time)	all times $t \leq n$

Table 1: *not yet* and *never* time spans in the present perfect in neutral temporal contexts

	Time span of application	
	Events with Stereotypical Intervals (SIs)	Non-SI Events
not yet	CDI	CDI
never	CDI	CDI

Table 2: *not yet* and *never* time spans in the present perfect in sentences with an established temporal context (CDI)

3. Stereotypical Intervals and Semantic Frames

As mentioned in section 2.3, there are many events which recur at set intervals which are a part of speakers' world knowledge linked to given lexical items. I referred to these as stereotypical intervals (SIs). One mechanism for capturing the link between world knowledge and lexical items, the *semantic frame*, is offered by the framework of Frame Semantics (Fillmore, 1982). A semantic frame is a type of knowledge constellation surrounding given events and situations (relating to the physical world or to culturally-bound phenomena) which can be linked to a set of lexical items.

The semantic frame can encode various types of information which are important in an overall understanding of an event, situation or entity. Frames can be linked to one or more lexical items (frequently very many). The frames can likewise be linked with each other via inclusion and inheritance relations.

4. Discourse Representation Structures

The analysis presented here uses Discourse Representation Structures (DRSs) from the framework of Discourse Representation Theory (DRT) (Kamp & Reyle, 1993; Kamp et al., forthcoming). DRT is a dynamic semantic framework in which one or more sentences are organized into a coherent discourse. Sentences can introduce entities into a discourse in a stepwise fashion. The principles of DRT allow these entities to be linked to each other via principles of sentence interpretation (such as rules of anaphor resolution and temporal interpretation rules).

5. Semantic Values for *not yet* and *never*

The semantic values given below are an attempt to augment more traditional denotations given for *not yet* such as those suggested by Löbner (1989) and Krifka (2000). In particular, these semantic values are intended to capture the differential behavior of *not yet* and *never* as summarized in Tables (1) and (2) above. Both *not yet* and *never* preferentially select the CDI, when there is one, as defining the starting point for their span of negation. When there is no CDI, *not yet* picks out the stereotypical

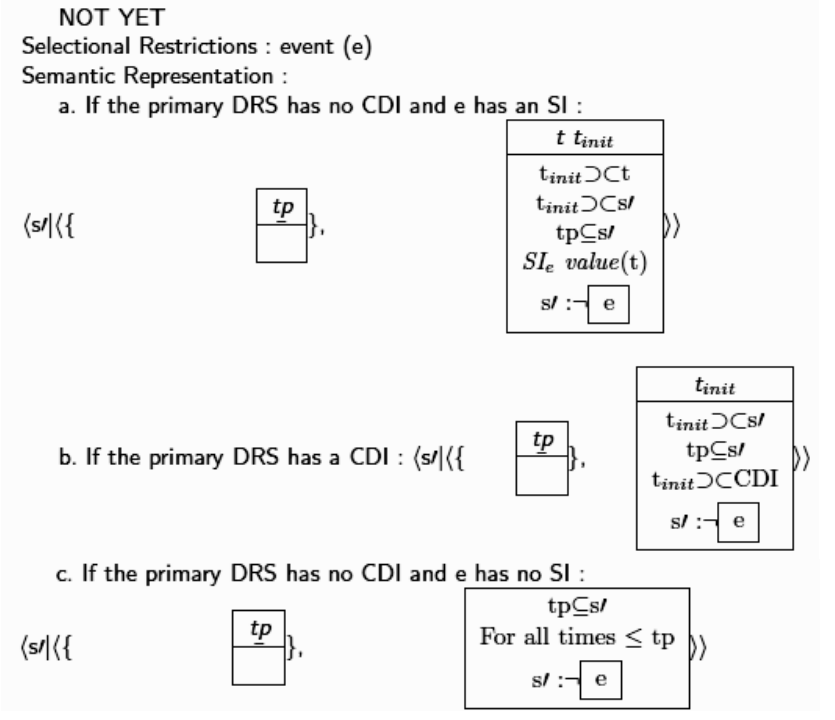
interval (SI) as the starting point for its span of negation, while *never* ignores the SI and asserts event/state non-realization at all times earlier than reference time.

When there is no CDI or SI, *not yet* also asserts event/state non-realization at all times earlier than reference time. We need a time variable which will serve to set the starting time of the intervals of negation for *not yet* and *never* for those cases in which they do not negate for all times earlier than reference time, but rather for a more limited span. I will call this variable t_{init}. It is the right-edge time of the interval which left-abuts the span of negation for *never* and *not yet* in these non-maximal cases.

5.1. Semantic value for not yet

Below in (11) is a proposed semantic value for *not yet* in terms of its effect on a DRS into which it is introduced.

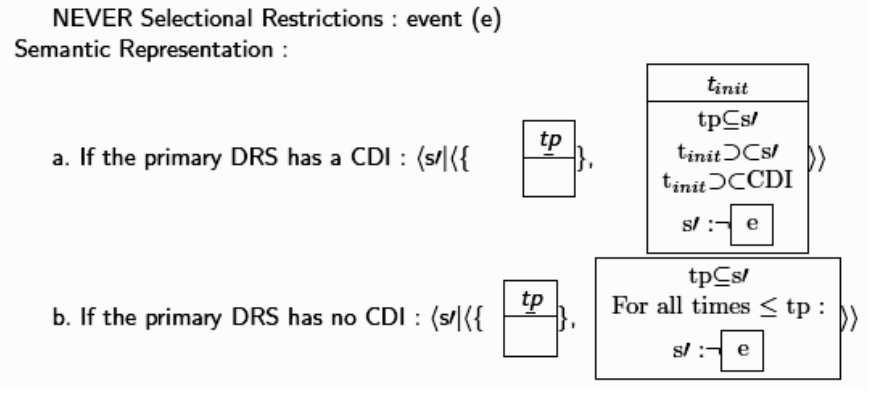
(11):



5.2. Semantic value for never

Below in (12) is a proposed semantic value for *never.*

(12):



Here there are only two cases, reflecting the fact that *never* ignores SIs. As with *not yet*, *never* triggers a presupposition of a reference time *tp* to use as the point from which it looks back in determining its span of negation.

For the first case, (a), in which there is a CDI, *never* has the same semantic value as *not yet* in this same case (the second clause, (b), of (11)). It selects the CDI as its t_{init}; hence $t_{init} \supset\subset CDI$ is added to the condition set. The condition $t_{init} \supset\subset s'$ is also added to specify that the state resulting from the negation of the event *e* also abuts t_{init}.

For the second case, (b), in which there is no CDI, *never* has the same semantic value as *not yet* in this same case (the third clause, (c), of (11)); *never* asserts that the result state of the negation of its argument event obtains for all times equal to or earlier than reference time.

6. Some sample derivations

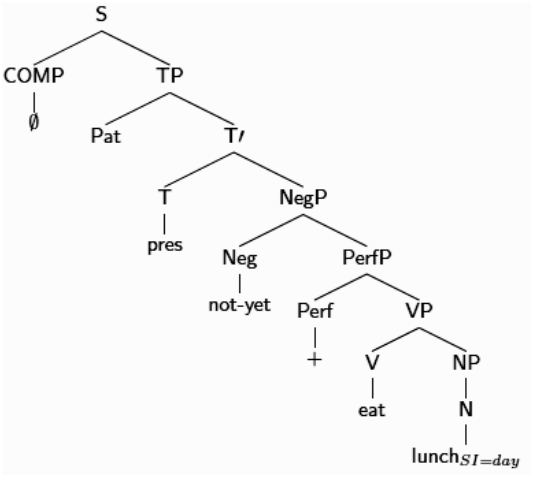
In this section I will outline two DRS derivations with syntactic trees. The first of these examples will show the operation of the semantic value given for *not yet* in (11) for a sentence with an SI-triggering event *eat lunch*. The second example will show how *never* ignores this SI and chooses the earliest conceptualizeable t_{init} for its span of negation in a neutral context (i.e., one lacking a CDI).

6.1. Not yet

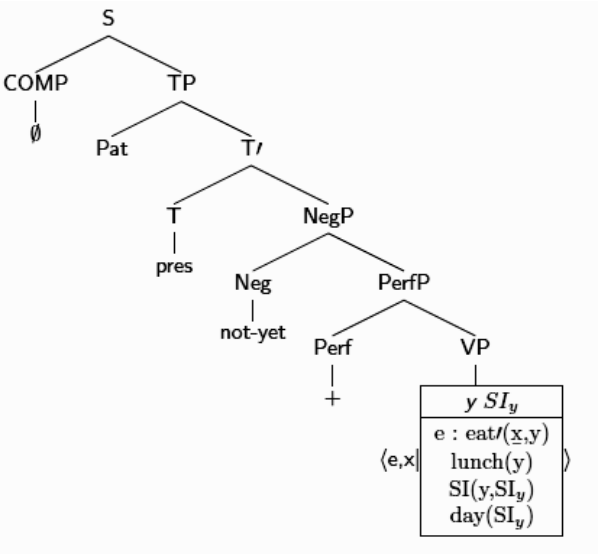
In this section I give the derivation for (1), repeated as (13) below in a context where no CDI has been established.

(13) *Pat hasn't eaten lunch yet.*

DRS 1.1:

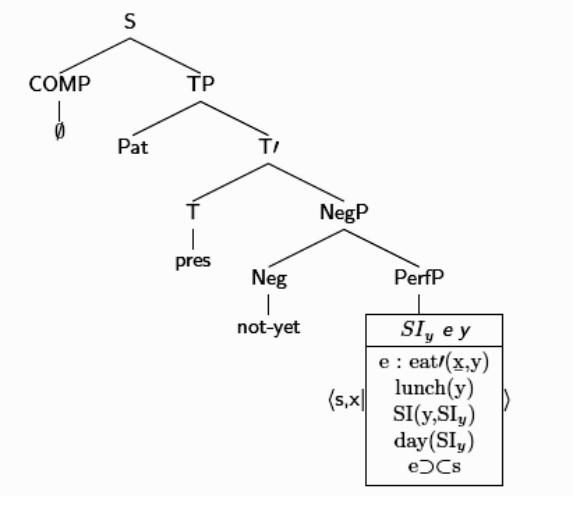


DRS 1.2:



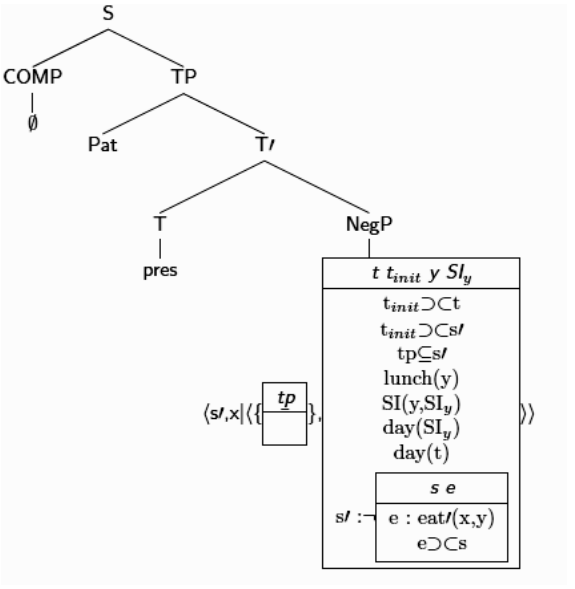
In DRS 1.2, at the point in the derivation where *lunch* is taken in as an argument of eat, its SI is introduced to the universe of the DRS, in this case as SI_y. A condition *SI(y, SI_y)* is added to the DRS which explicitly identifies SI_y as the SI of *lunch*. A condition is also added, *day(SI_y)*, which specifies that the interval of SI_y is a day.

DRS 1.3:



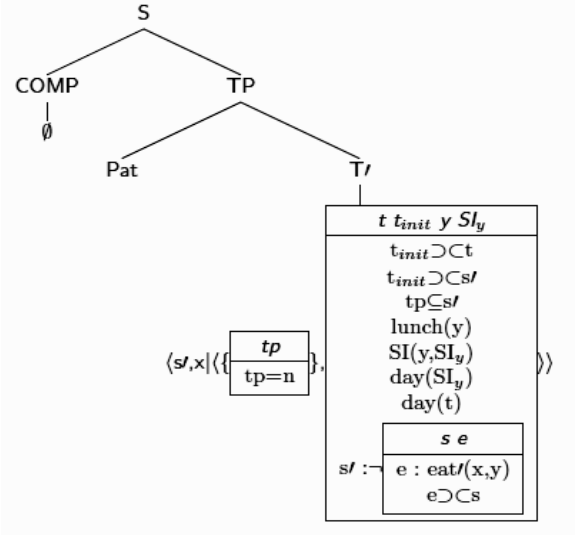
In DRS 1.3, the present perfect morphology converts the event *eat* into a state *s*; it moves *e* from the store of the DRS into its universe and *s* takes its place as the referential argument in the store.

DRS 1.4:



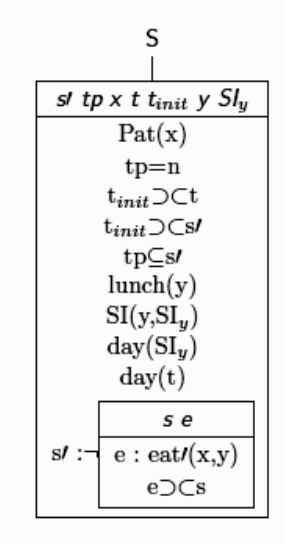
In DRS 1.4 *not yet* makes its contribution to the DRS via the application of the first clause, (a), of (11), since there is no prior context for this sentence, and, hence, no CDI. The rule in (11) is able to detect the presence of an SI in the universe of the DRS and apply the first clause, (a). *Not yet* presupposes a reference time *tp*. It adds a presuppositional component to the DRS and puts a dummy *tp* reference time into its universe. It also adds the condition $tp \subseteq s'$ to the non-presuppositional component of the DRS to indicate that this reference time will be included in the negated result state of *not yet*'s event argument. *Not yet* also introduces t_{init} and a time *t* into the universe and four conditions to the condition set: $t_{init} \supset\subset t$, $t_{init} \supset\subset s'$, a condition which sets *t* to the interval specified by the available SI, in this case *day(t)*, and finally, *not yet* negates its event argument's result state (previously introduced by present perfect morphology) and makes a state s' corresponding to this negation which it introduces to the store as the referential argument of the sentence, *s* being moved into the universe of the DRS.

DRS 1.5:



In DRS 1.5 the present tense value of the Tense node is introduced into the DRS and sets the value of *tp* to utterance time, *n*.

DRS 1.6:



DRS 1.6 is the final DRS for (13). It specifies that there is a state s' corresponding to the negation of the event *eat* for the values of its arguments *Pat(x)* and *lunch(y)*. It specifies that s' includes the utterance time via the conditions tp=n and $tp \subseteq s'$ and that s' extends back to the beginning of the current day via the conditions $t_{init} \supset\subset t$, $t_{init} \supset\subset s'$ and *day(t)*.

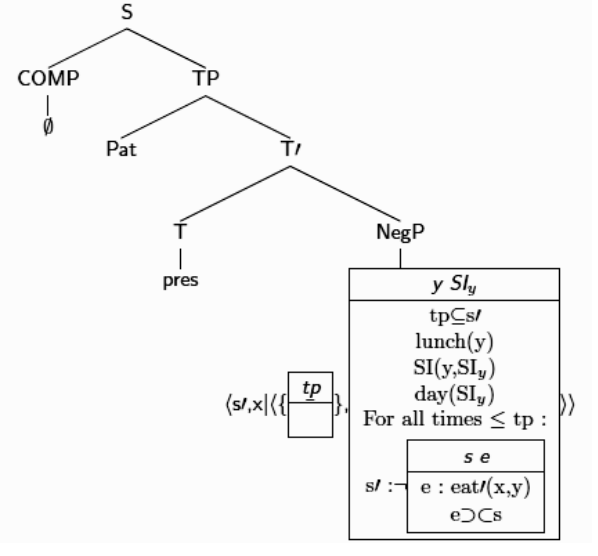
6.2. Never

In this section I give the derivation for (2), repeated as (14) below, in a neutral context, i.e., in a context where no CDI has been established. In the interest of space, steps have been omitted where they are identical to the derivation in section 6.1.

(14) *Pat has never eaten lunch.*

The syntactic tree for (14), as for DRS 1.1 for (13), contains an SI specification for *lunch* on the assumption that this information is always included or available in the syntactic representation. It will, however, be ignored by *never*.

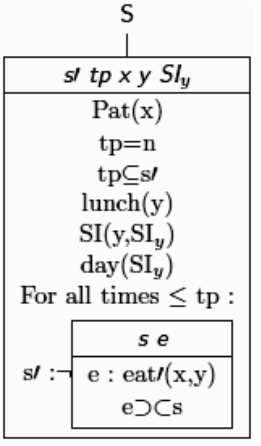
DRS 2.1:



The rule in (12) for *never* can detect that there is no CDI available for it to use as a t_{init} for the more limited span of negation permitted in the first clause, (a), of (12); hence, it uses the second

clause, (b), of (12). It adds a condition $tp \subseteq s'$ as do all of the rule options in (11) and (12), permitting the negation state s' to look back from the reference time which will be encountered higher in the tree. That it looks all the way back to all times earlier than reference time for its span of negation is contributed by the last condition in the condition set of the non-presuppositional component of DRS 2.1. The derivations for the remaining DRSs intervening between DRS 2.1 and the final DRS proceed as with their counterparts in 1.5 - 1.6 above, and are not given below in the interest of space.

DRS 2.2:



Although the SI of *lunch* is included in the universe and alluded to in the condition set of the final DRS 2.2, it has played only a vacuous role in the derivation, not having been used by *nevert* in setting its span of negation.

7. Conclusions

This study suggests that the stereotypical interval, a part of the structure of stereotypically cyclic events, turns out to be specifically targeted by a lexical item such as *not yet*, and is an important part of its meaning. Semantic frames are ideal for characterizing these stereotypical intervals. At the same time, we have seen that *never* has a different default behavior which must be encoded in its denotation. However, the default values of both lexical items defer to linguistic context (contextually-determined intervals) in the way the time span of their application is generated. This study is one part of what could be a much larger study on the nature of default intervals in denotations of lexical items and of morphological tenses.

References

Fillmore, Charles. (1982). Frame semantics. In *Linguistics in the Morning Calm.* Seoul, Hanshin Publishing Co., 111-137.

Grice, H.P. 1975. Logic and conversation. In Peter Cole and J. L. Morgan (editors). *Syntax and semantics: Speech acts.* Volume 3. New York: Academic. 41–58.

Kamp, Hans., Josef van Genabith and Uwe Reyle. (forthcoming) Discourse Representation Theory, in *The Handbook of Philosophical Logic.* Dordrecht: Kluwer.

Kamp, Hans and Uwe Reyle. (1993). *From Discourse to Logic*. Dordrecht: Kluwer.

Krifka, Manfred. (2000). Alternatives for Aspectual Particles: Semantics of still and already, paper presented at the Berkeley Linguistics Society.

Löbner, Sebastian. (1989). German *Schon – Erst – Noch*: An integrated analysis. *Linguistics and Philosophy* 12: 167-212.

Proceedings of the 29th West Coast Conference on Formal Linguistics

edited by Jaehoon Choi, E. Alan Hogue, Jeffrey Punske, Deniz Tat, Jessamyn Schertz, and Alex Trueman

Cascadilla Proceedings Project Somerville, MA 2012

Copyright information

ISBN 978-1-57473-451-5 library binding

Ordering information

Orders for the library binding edition are handled by Cascadilla Press.
To place an order, go to www.lingref.com or contact:

Cascadilla Press, P.O. Box 440355, Somerville, MA 02144, USA
phone: 1-617-776-2370, fax: 1-617-776-2271, sales@cascadilla.com

Web access and citation information

This entire proceedings can also be viewed on the web at www.lingref.com. Each paper has a unique document # which can be added to citations to facilitate access. The document # should not replace the full citation.

This paper can be cited as:

Wright, Tony. 2012. Temporal Adverbials and Stereotypical Intervals. In *Proceedings of the 29th West Coast Conference on Formal Linguistics*, ed. Jaehoon Choi et al., 276-284. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #2712.