Semantics and Grammar in Clause Linking

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1. The many facets of clause linking

All the semantic relations between clauses—outlined in Chapter 1—can in some way be expressed in each of the languages discussed within this volume. This is akin to a lay assumption that anything can be said in any language. It is, however, the case that some relations are expressed more readily and more frequently than others. Temporal relations between clauses are a prime example. In contrast, semantic relations of possible consequence, manner, or addition may not have a way of expression of their own.

This lack of ‘isomorphic relationship’ between structures and semantic types (§4 of Chapter 4) leads to further questions. Among these are the status of some semantic types of clause linking as ‘core’ and others as ‘marginal’; the existence of any additional semantic subtypes; potential polysemous patterns in clause linking; and the ways in which categories of the Focal and the Supporting clause can help disambiguate these. This chapter aims at drawing together some of these issues which arise from discussion within the volume.

I start with a brief description of ‘core’ and ‘marginal’ types, and further semantic distinctions within them revealed in the languages analyzed within this volume (§2). Polysemous clause linking devices—especially those which involve apposition—are discussed in §3. In §4, we turn to the categories of Focal and Supporting clause and their role in determining the semantics of clause linking. Further non-clause linking functions of clause linkers are addressed in §5. The origin of clause linkers, and patterns of reinterpretation of multiclausal constructions, are the topic of §6. Prospects for further study are highlighted in the final section.
2. ‘Core’ and ‘marginal’ semantic types in clause linking

Some types of clause linking are found in every language, and may be considered universal. These include Temporal, Consequence, and, within Addition, Contrast and Same-event Addition (cf. §3 of Chapter 1). These core types are expected to be formally marked.

Other semantic types are marginal. Types such as Possible consequence, Alternatives, and Manner are clearly recognizable in just some languages, while others would employ some other clause linking device to express these.

Languages discussed within this volume have revealed the presence of a few additional semantic parameters within the core semantic types—see §2.1. The issue of further semantic differentiation within ‘marginal’ types is approached in §2.2.

2.1. Further semantic parameters within the core types

The major distinctions underlying the Temporal linking can often be captured by parameters such as point in time and length of time, in addition to relative time of Supporting clause with respect to time of Focal clause (Table 3 in Chapter 1). The time span of Focal clause and of Supporting clause can overlap, as in (27–8) from Chapter 1 (also see Chapter 5; and (13) in Chapter 8). Iquito further distinguishes general temporal overlap, and ‘temporal overlap of events construed as extending through periods of time’ (§4.2 of Chapter 6).

2.1. Further semantic parameters within the core types

Other parameters which acquire special morphological marking in Temporal succession and Relative time relate to:

- the immediacy of sequential events of the Focal and of the Supporting clause attested in Iquito (§4 of Chapter 6), Korean (Table 3 of Chapter 12), and Manambu (Chapter 5);
- whether or not the events are construed as ‘connected’, as, for example, by forming parts of a plan of action or by one event being seen as a consequence of the other, as in Iquito (§4.4 of Chapter 6), and
- approximate relative time as opposed to exact relative time, as in Korean (Tables 3, 4 of Chapter 12).

The semantic type of Relative time in Ojibwe contains an extra dimension, to do with the reiteration of the action of the supporting clause called ‘iterative coincidence’ by Valentine (§3.2 of Chapter 8). This is similar to the Repetitive temporal clause in Aguaruna (§3.1.1 of Chapter 7). The same meaning in Iquito is expressed with a free relative construction (§4.5 of Chapter 6).
Possible and Counterfactual conditionals are well-recognized subtypes of Conditional linking. In addition, Korean has a special conditional predicting a bad consequence (example (26) in §4.1 of Chapter 12). And the conditional marker -ketun is only used ‘when the Focal clause denotes the speaker’s intention’ (§4.1.3 of Chapter 12). ‘Unlikely condition’ in Manambu is a type of conditional distinct from both possible and counterfactual conditions (§3.1 of Chapter 5).

Within the semantic type of Consequence, Purpose may involve further parameters. Mali (§7 in Chapter 15) distinguishes a basic purposive, and also ‘intentional purpose’ (whose indicator consists of the reason clause marker and the purposive) and ‘controlled purpose’, built on the intentional purposive and a multifunctional coordinator.

Akkadian (§5.3 of Chapter 2) employs different purposive constructions depending on whether the purpose has been achieved or not. And in Iquito, one of the two purposive constructions requires that the verb of the focal clause be a motion verb (§5.3 of Chapter 6). We return to the correlations between the semantics of clause linking and other grammatical and semantic features of the clauses in §4.

These additional parameters within established core semantic types of clause linking are found in just a handful of languages, in particular those with a rich array of specialized clause linking devices. Other, less rich, languages can express these meanings through the devices employed for other clause linking types. This highlights the ‘marginal’ character of such rare, ‘exotic’, distinctions.

Discourse-pragmatic factors turn out to be more relevant for Consequence linking than for other types. The two clause linking constructions referring to Cause in Iquito (§5.1 of Chapter 6) differ in whether the cause is presupposed—that is, explicitly mentioned in the previous discourse—or not. In Purpose linking, the clause showing purpose may or may not be the Focal clause depending on the context, and the relative importance of the content of the clause stating the purpose and of the clause stating what is done to achieve it. Manambu (example (19) in Chapter 5) and Akkadian (examples (25–6) in Chapter 2) illustrate this; also see §5 of Chapter 1. Of the different subtypes of Addition, Contrast marking appears to be the most widespread.

2.2. The status of ‘marginal’ types
Possible consequence is a marginal semantic type of clause linking. Of the languages described in the volume, Galo, Akkadian, Ojibwe, and Iquito have no dedicated expression of Possible consequence. This meaning can be conveyed
by a negated purpose clause (as in Akkadian, §6 of Chapter 2; a similar strategy is also available in Korean: §4.3 of Chapter 12). Disjunction is employed to express this meaning in Konso (Chapter 14).

However, the presence of a special ‘apprehensive’ marker is a salient feature of Australian languages (see Chapter 11 and Dixon 2002: 87–90), and also of many languages of Oceania (cf. Chapters 9 and 10), Amazonia (cf. Chapter 7 and Aikhenvald 2003), and New Guinea (Chapter 5). Apprehensive meanings are easily borrowed and calqued in the situation of language contact (cf. Aikhenvald 2002: 145–6).

It is most probably the case that Possible consequence is a fairly marginal semantic type in some areas, and rather robust in others. Additional semantic complexity within this type involves a positive or a negative outcome. While no language has been found so far with different specialized means of marking positive and negative possible consequence, this is not inconceivable.

Unordered Addition is marginal in languages where the semantic interpretation of clause linking relies on context and inference. In Manambu (Chapter 5), there is a strong tendency to read a causal or a temporal meaning into a sequence of clauses (or events). Similarly, in Aguaruna (§4 of Chapter 7) ‘Addition (IV) other than contrast is generally expressed with the same structures used for temporal (I) and consequence (II). As a result, “pure” addition, expressed by apposition, is rare—most clause-linking constructions have some temporal or causal implication.’ Other languages—such as Toqabaqita (§6.1–2 of Chapter 10), and Korean (Chapter 12)—have a rich array of means of expressing addition. Others use a polysemous device—an example is Goemai (Chapter 13); see §3.

Besides Unordered addition, some languages—e.g., Martuthunira—may have hardly any devices for elaboration. Elaboration in Akkadian (§7.2 of Chapter 2) (expressed through the polysemous coordinator $u$) involves the second clause strengthening the first one. Potentially, this could be considered a further marginal subtype of ‘Addition’ linking. Kham (§4.7.2–3 in Chapter 4) offers two further potentially new subtypes: incongruous actions and alternating actions, both of which have specialized marking. A further new meaning is Attendant Circumstances in Toqabaqita (§9 of Chapter 10).

Marginal semantic types of clause linking may not be expressed with clause linking devices at all. Hypothetical manner in Boumaa Fijian (Chapter 9) is marked by a verbal prefix. The meanings of rejection and suggestion in Galo (§6.2 of Chapter 3) are also ‘handled monoclauisally, via predicate inflections and/or particles’. Marginal meanings can be expressed using correlative relational elements, as in Ojibwe (§3.15 of Chapter 8).
This is not to say that core semantic types of clause linking cannot be handled with alternative means. If they are, we expect a language to also have multiclausal constructions with similar sets of meanings. Thus, one subtype of serial verb constructions in Goemai can be considered a major strategy for expressing temporal relations. Serial verb constructions are monoclausal (which is one of their definitional properties: see Hellwig 2006, and Aikhenvald 2006 for a typological background). Goemai is also said to have a variety of multiclausal constructions for temporal relations (see §1.2 and §2.1 of Chapter 13).

We now turn to polysemous clause linking devices.

3. Polyfunctionality, polysemy, and inference in clause linking

3.1. Polysemous patterns in clause linking devices

A clause linking device can be used for just one semantic type of clause linking. For instance, in Aguaruna (§3 of Chapter 7) ‘a few grammatical constructions show a one-to-one relationship to a semantic type: conditional, purpose, possible consequence and concessive relations are all marked distinctly.’ Alternatively, one device can cover several semantic types of clause linking. In Aguaruna, ‘other types, particularly temporal and consequence, are grammatically indistinct.’

A clause linking device can cover two or more meanings within the same core type. Conditional and temporal meanings are very often expressed with the same device, as in Konso, Goemai, and English. Cause and Purpose are marked with the same device in Toqabaqita (Chapter 10). We will see in §3.3 that this is one of the recurrent patterns of polysemy in speech report constructions as clause linking devices. Further examples of one device covering all subtypes of Consequence, and another spanning all kinds of Addition, are in §4.3 and §4.5 of Chapter 1. These patterns of polysemy can serve as additional evidence in favor of high-order types—such as Temporal, Consequence, or Addition.

Polysemous patterns in clause linking can span different semantic types. In many languages, Relative time and Cause are expressed with the same device—as is mentioned in §4.3 of Chapter 1, with an illustration from Jarawara, and also Fijian (Chapter 9), and Manambu (Chapter 5). In Toqabaqita, expressions of temporal sequence often carry an implication of an additional relation between the two states of affairs, such as Result (example (6) in §3.1 of Chapter 10):
I, my foot slipped, and I fell down.

This pattern of polysemy follows an almost self-evident path: if two events are mentioned together as following each other in time, it may be possible to infer that one is the cause of the other (see Thompson and Longacre 1985: 181 ff.).

Galo (Chapter 3), Kham (Chapter 4), and Aguaruna (Chapter 7) employ the same device for Temporal succession and Addition (also see §4.5 of Chapter 1). This polysemy reflects a tendency to ‘read’ overtones of Temporal succession into any sequence of actions (reflected in Addition). Further, less well-attested patterns of polysemy include Result and Contrast in Boumaa Fijian (both can be marked with ia ‘but, well, then’), and Contrast and Cause/Result in Aguaruna (§3.4.3 of Chapter 7).

The ways in which polysemous patterns group together may be language specific. In Korean (Chapter 12), some devices display polysemy within a semantic type, with some going beyond one type. The ender -ese/ase indicates: Temporal succession (17a), Cause (17b), Manner (ways/means) (43a), Result and Relative time (same time), as in (44). The ender -(u)myen expresses Relative time (‘when’) and Conditional, while -ko marks Temporal succession and Addition, -nulako marks Cause and Same-event addition, and -(u)mye/-myense is used for Same time and Addition (§4.7 of Chapter 12).

As mentioned at the end of §2.2, marginal semantic types are likely not to have a specialized means of expression at all. For instance, Manner is likely to be expressed using a clause linking device which also covers other semantic types. In Korean, manner is expressed with the polysemous marker -ese/-ase. Suggestion and Rejection are often achieved through multifunctional apposition, as in Manambu (Chapter 5). And the rare variety of clause linking relating to Location (see example (21) in Chapter 8, for Ojibwe, and §4.1 of Chapter 1) is typically handled by relative clause constructions in other languages.

The exact interpretation of a polysemous device may rely on the context. In Konso, ‘the semantic link between the two clauses linked with ka is open for interpretation’—covering temporal succession, addition, and also causal consequence (§2 of Chapter 14).

In most languages within this volume, a context-dependent device turns out to cover at least one of the Temporal meanings and also Addition. So, in Martuthunira ‘the locative suffix codes a relatively unspecified dependency relationship between the two clauses—in the simplest cases, that relationship
is a temporal one’ (§3 of Chapter 11). Further similar examples come from Mali, Manambu, Akkadian, and Aguaruna. In all likelihood, this reflects a general cross-linguistic tendency. A detailed account of the overtones for a ‘default’ clause linking device remains a matter for further investigation. Alternatively, there may be grammatical means for disambiguating different meanings—see §4.

We now turn to two cross-linguistically rather common polysemous clause linking devices. Both involve apposition, but the semantic effects tend to be different.

3.2. Simple apposition of clauses

Apposition of clauses involves no segmental marker indicating that two clauses are linked. There is typically a ‘characteristic intonation tune showing the connection between them’ (§2.1 of Chapter 1). In Lichtenberk’s words (§2 of Chapter 10), ‘while the nature of the link between states of affairs is usually expressed explicitly, sometimes it is only implied (and is inferred by the hearer)’: then, clauses are juxtaposed to each other. Many—though not all—languages of the world employ this device. Within the current volume, polysemous apposition of main clauses spans a number of semantic types. These include (recapitulating some of the examples in §5 of Chapter 1):

- Temporal succession and Addition in Toqabaqita (Chapter 10);
- Temporal succession, Addition, and Elaboration in Iquito (Chapter 6);
- Temporal succession and Cause in Martuthunira (Chapter 11);
- Temporal succession, Relative time, and Result in Boumaa Fijian (Chapter 9);
- Conditional, Consequence, Addition, and Contrast in Goemai (Chapter 13); and
- Possible Consequence, Addition, and Contrast in Kham (Chapter 4).

In Hellwig’s words (§2.4 of Chapter 13), ‘apposition is semantically general: it conveys a relationship between the state-of-affairs expressed in the two clauses, but leaves the nature of this relationship implicit. Its interpretation depends on contextual information.’ In all the examples above, apposition covers at least one Temporal meaning (namely, conditional, which is said to be rare: see example (18) in Chapter 13).

Goemai is said to have ‘limits to the kinds of relationships’ apposition can express: it cannot receive a purely temporal interpretation. In Goemai, dedicated syntactic markers are available for consequence, and for condition and other types—‘speakers prefer to use them instead’ of apposition, whose most
frequent reading is addition or contrast—‘presumably because there are no ready alternatives to express these functions otherwise’. These meanings can be considered central for clause apposition in Goemai.

Along similar lines, in Konso (Chapter 14) apposition is only used for addition. In Mali it is restricted to elaboration, while apposition in Galo covers elaboration and also disjunction.

The reason why some languages use formally unmarked clause linking less than others is twofold (see §5.8 of Chapter 1). Languages with a multiplicity of clause linking devices, such as Korean, have little use for apposition. Languages which already have highly polysemous ‘default’ clause linkers—such as Konso—also make little use of apposition.

Apposition is rare in Akkadian. Just occasionally, the polysemous clause linking particle -ma’ can be omitted, and temporal succession is thus expressed as apposition. The immediacy of apposition may perhaps create a slightly more emphatic effect (§4.1 of Chapter 2). Extensive use of apposition is linked to the reliance on shared context and inference, and is in many languages—such as English—a feature of colloquial speech. Written register tends to be more precise and less elliptical. An additional factor responsible for the rarity of apposition in Akkadian could be the specialized nature of the materials in this language—one of the oldest written languages known to humankind.

Apposition itself may not be as straightforward as it seems. Putting two main and two dependent clauses together may have a different semantic effect. In Manambu, apposition of main clauses is a way of expressing Relative time, Result, Elaboration, Contrast, Rejection, and Suggestion. Apposition of medial clauses implies Temporal succession (Chapter 5). Along similar lines, apposition of fully inflected clauses in Iquito expresses Temporal succession or Elaboration (as in (4) and (29) from Chapter 6), while apposition of nominalized verbs yields Unordered addition (27).

Polysemous speech reports can be viewed as a subtype of apposition—see the next section.

3.3. Polysemous speech reports

Every language has a way of reporting what someone else said. The vast majority of the world’s languages have direct speech reports. Then, the Speech Report content is a more or less faithful reproduction of what the Original speaker had said. Some languages also have indirect speech reports, recasting the original contents as their own—this is typically accompanied by person shift: see a survey in Güldemann and von Roncador (2002). Aikhenvald (2008a), and references
there, contain a summary of speech report constructions, the criteria for direct, indirect, and semi-direct speech reports, as cross-linguistically valid concepts.

Verbs of speech which occur with speech reports can be highly versatile in their semantics, going beyond simply ‘speaking’ into expressing cognition, desire, and intention (see, for instance, Rumsey 1990, 1994).

As Munro (1982: 316) put it, ‘the meaning of “say” must . . . go beyond the idea of simply communicating facts by uttering words, and must probably include at some level a recognition of the general human reaction to speech as a characteristic indicator of personality and intention’. Accordingly, speech reports can acquire numerous extensions—many of which correspond to the semantic types of clause linking discussed in this volume.

Verbs of ‘saying’, especially those capable of taking a direct speech report, are typically employed in expressions of thought, emotions, and intention. In Dolakha Newari, a direct quote construction which consists of a direct speech report followed by the participial form of ‘say’ is used to express hope, thought, or fear. To say ‘He was afraid the dog would bite’ one says (Genetti 2006: 149):

\[(2) \text{ām [khicā=n} \text{ nyā-eu] hañ-an gyāt-a}\]
\[3sg \text{ dog=erg bite-3sgfut say-particle fear-3sgpast}\]

Lit., Saying ‘the dog will bite’, he feared.

This kind of construction, and its whole array of meanings, is an areal property shared by numerous South Asian languages (Noonan 2001, Saxena 1988): a direct speech construction expresses cause, purpose, and intention. For instance, a sentence like ‘Because the cow wanted to get into the field, it made me hurry’ literally translates into Chantyal, a Tibeto-Burman language, as ‘The cow will go in the field, having said, it made me hurry’.

We saw in §2.2 above that Possible consequence as a separate formal type of clause linking is represented in some areas but not in others. Along similar lines, polysemous speech reports tend to cluster in certain areas. In Galo and Kham, both Tibeto-Burman languages, speech reports are used for Purpose linking; in Galo, they also cover Cause, Result, and Possible consequence (§3 of Chapter 3; §4.2.2 of Chapter 4). Unlike simple apposition discussed in §3.2, polysemous speech reports are hardly ever employed for Conditional, Addition, or Contrast linking.

Polysemous speech reports have been described for numerous languages of New Guinea: they express intention and cognition in Maybrat (Dol 2007: 203–4), and also purpose in Tauya (MacDonald 1990), in Korowai (van Enk and de Vries 1997: 104–5), in Kombai (de Vries 1990), and in a number of Western Austronesian languages (Klamer 2000). Lower Grand Valley Dani
also employs direct speech reports to express the speaker’s intention (Bromley 1981: 245). There can be further meaning extensions. In Erromangan (Crowley 1998: 257), a speech report construction appears in a resultative construction to introduce a direct result of the event described in the preceding clause: ‘so that he would go ashore’ literally translates as ‘saying he will go ashore’. It thus comes as no surprise that speech reports in Manambu (Chapter 5) cover Cause, Purpose, and Possible consequence.

Speech reports in Aguaruna (§2.5 of Chapter 7, and also see Larson 1984: 86–114) express Purpose, Cause and Result, and Possible Consequence. Only a few South American languages are known to have comparable extensions: Tucano, an East Tucanoan language, and its neighbour Tariana, from the Arawak family, employ Speech reports to express Possible consequence (Aikhenvald 2002: 145). Nothing of the sort has been found in, say, Iquito (Chapter 6) or many other languages of Amazonia. A speech report in Aguaruna has a further, rather unusual, meaning: it encodes a temporal relation, ‘until’ (if the Focal clause is cast in future: example (21) in Chapter 7).

Linking the verb introducing a speech report and a speech report is a type of apposition (appendix in Aikhenvald 2008a provides an overview of other possibilities). However, the patterns of polysemy are more restricted than those described for simple apposition of main clauses (see §3.2). Figure 1 summarizes the recurrent patterns of polysemy for speech report constructions.

Speech reports in Galo, Kham, Aguaruna, and Manambu are extremely versatile. Besides reporting an actual speech event, they are employed in clause linking constructions covering a range of meanings spanning Consequence, Possible consequence (typically negative), and Temporal. In these extensions, they do not presuppose a speech act (see §2.1 of Chapter 1). In other words, they tend to be bleached of their primary meaning. This bleaching goes together.

\[
\begin{align*}
\text{temporal and resultative} \\
\uparrow \\
\text{negative purpose and possible consequence} \\
\uparrow \\
\text{intention; purpose; result} \\
\uparrow \\
\text{wish} \\
\uparrow \\
\text{speech report construction, reported thought, internal speech} \\
\downarrow \\
\text{reason}
\end{align*}
\]

**Figure 1.** Polysemous patterns in speech report constructions
with the eventual grammaticalization of the speech verb itself as a clause linking device—see §6, and examples from Galo and Manambu there.

A language may have a way of distinguishing speech reports which presuppose a speech act (that is, someone saying something) from those that do not. In Manambu, a direct speech report which presupposes a speech act contains the introducer *ata* ‘then’ in the clause which contains a speech act. In contrast, ‘fake’ speech reports employed for clause linking usually lack it (see §2.1 of Chapter 1 and §4 of Chapter 5). To what extent other languages differentiate speech reports in their varied functions remains an open question.

Having a grammatical mechanism for teasing apart the many meanings of one morpheme or construction is useful for deciding whether the form (or the construction) has one primary meaning or whether we are dealing with synchronically distinct structures.

This is akin to Deutscher’s discussion of the two polysemous connectives in Akkadian in §10 of Chapter 2: the uses of connective *ktma* in its Temporal meaning ‘as soon as’, in its Rejection meaning ‘instead of’, and as part of Manner linking are grammatically differentiated. In contrast, the many meanings of the connective -*ma* are not: ‘From the point of view of Akkadian itself, -*ma* has just one basic function: it marks temporal succession between the events and indicates a tight relation between the clauses. The nature of this relation, whether it is “just” temporal succession, or contrast, or result, and so on, is left for the hearer to infer.’

Table 1 summarizes the recurrent multiple functions encountered thus far during this study. Each ‘X’ indicates that there is at least one instance of a form which marks a linking for the column and the row which intersect at that ‘X’. For example, there is an ‘X’ at the intersection of the Result column and the Contrast row, showing that there is a form which marks both these linkings; it is *ia* ‘but, well, then’ in Fijian.

**Table 1. Multiple functions of clause linking markers**

| TEMPORAL            | CONDITIONAL | X | CAUSE | X | RESULT | X | PURPOSE | X | X | X | POSSIBLE CONSEQUENCE | X | X | X | ADDITION | X | X | CONTRAST | X | X | X | DISJUNCTION | X | X | X | MANNER |
|---------------------|-------------|---|-------|---|--------|---|---------|---|---|---|-----------------------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|
We now turn to further ways in which categories of Supporting or Focal clauses can influence the semantic interpretation of an otherwise ambiguous clause linking device.

4. Clausal categories in clause linking

Categories of the Focal and of the Supporting clause which typically contribute to the semantics of clause linking include reality status, modality, tense, aspect, epistemic, and discourse-pragmatic markers.

Irrealis or counterfactual modality contribute to the hypothetical conditional meaning. In Jarawara (§4.2 of Chapter 1) a hypothetical conditional involves irrealis marking on the Focal clause. In Manambu both Supporting and Focal clauses are marked as irrealis for a Counterfactual conditional linking. In Akkadian counterfactual conditional involves the irrealis particle -\textit{man} (which is supposedly related to the interrogative pronoun ‘who’) (§4.4 of Chapter 2).

Supporting clauses with conditional meanings may contain the marker of irrealis. In Mali, a temporal clause may acquire a quasi-conditional reading once it is used in an irrealis context (example (7) of Chapter 15; also note that the conditional \textit{asika} in Mali is etymologically related to the irrealis marker \textit{asik}; Tonya Stebbins, p.c.). The possible conditional marker in Iquito (§4.6 of Chapter 6) is also used to ‘indicate hypothetical status’.

Along similar lines, in Goemai an additional marker \textit{d’in} (originally indicating ‘close past tense’) marks irrealis and counterfactual condition in temporal/conditional linking (§2.1 of Chapter 13). In Korean, counterfactual meaning is imparted to Conditional linking by a clause linking ‘ender’ in combination with the tense value of the Supporting clause and the Focal clause. For instance, for present or future counterfactual, either the Supporting clause or the Focal clause must be cast in past tense (examples (25b, c) of §4.1.3 in Chapter 12). For the past counterfactual, both the Supporting clause and Focal clause must be in past tense, as in (25d).

The correlation between reality status (that is, realis and irrealis) and the conditional reading of the linkage can be more intricate. In Iquito (§4.6 of Chapter 6), the Focal clause exhibits irrealis order when expressing a temporally definite possible future outcome, and exhibits realis order when indicating a temporally indefinite outcome. In each case, the Supporting clause is obligatorily realis, and must precede the Focal clause.

Future can influence the semantics of clause linking. In Martuthunira, sequences of future-inflected verbs are used to code temporal succession in narrative accounts, procedural narratives, and in relating future plans (§4.1 of Chapter 11).
The semantic value of clause linking can depend on the aspect of the verb. In Goemai, adverbial clauses which provide a temporal setting acquire a sequential 'past' interpretation if they are not marked for progressive aspect, and a simultaneous interpretation if they are marked for progressive aspect (§ 2.1 of Chapter 13 and examples (9) and (10)).

Epistemic particles may contribute to the semantics of the linking. In Galo, clauses in apposition obtain a disjunction reading if they are obligatorily marked by epistemic particles (they often involve different polarity values: §6.1 of Chapter 3).

In the absence of a dedicated mechanism for a semantic type of clause linking, the categories of the Focal and Supporting clause determine the semantics of the whole sentence. In Kham (§4.6.1 of Chapter 4), the most common means of expressing Possible consequence involves juxtaposing a clause containing a negative imperative (saying what is to be avoided) and a clause in future tense (saying what will happen if a negative command is not followed). The expression of Possible consequence in Akkadian and in Korean involves a negated purpose clause (§6 of Chapter 2 and §4.3 of Chapter 12).

Discourse-pragmatic devices—such as topic and focus markers as in Galo (Chapter 3) and Goemai (Chapter 13)—often operate on a par with connectives. The polyfunctional clause linker da in Mali is also used to optionally mark a clause boundary if there is a constituent in topic position (§5 of Chapter 15). Supporting clauses in Mali tend to occupy the same position as do topics—this provides additional motivation for these uses of the linker da (see example (8) in Chapter 15).

In Mali (§8 of Chapter 15), the adverb marik ‘really’ appears to be developing into a marker of Possible consequence, from an additional ‘supporting’ device in the apprehensive reading of clause linking. This is one way in which languages may acquire clause linking devices—see §6.

Some ‘exotic’ verbal categories whose meanings are highly context dependent are used where a speaker of an Indo-European language would expect a connective. Many Amazonian languages have a verbal category of frustrative whose meaning was captured in the title of the first paper on this topic, by Sparing-Chávez (2003) ‘I want to but I can’t: the frustrative in Amahuaca’.

In languages such as Amahuaca (Panoan), Tariana (Arawak: Aikhenvald 2003: 380–2), Hup (Maku: Epps 2005), Iquito (Chapter 6), Aguaruna (Chapter 7) and others, a special morpheme on the verb has just this meaning. Manambu (Chapter 5) also has a verbal suffix indicating that the activity was to no avail—that is, the desired result was not achieved, contrary to expectations.

Consequently, a frustrative may serve an additional clause linking function: it helps contrast two clauses, one stating the expectations, and the other one
(marked with the frustrative) stating the unexpected failure to fulfil them. Similarly, in Iquito (Chapter 6) the frustrative appears in counterfactual conditional linkages. Interestingly, Aguaruna (Chapter 7) employs it in temporal linkages with the meaning of ‘before’.

I hypothesize that in highly synthetic languages with a variety of verbal categories including result, counter-expectation, and various epistemic nuances, each of these contributes to ensuring the textual coherence and thus to linking clauses within sentences. As a result, the total number of dedicated clause linkers may be relatively low since the job is effectively done by other means—as is the case in Matses (Panoan: Fleck forthcoming) or Tariana. This is an issue for further investigation.

5. Clause linking morphemes in non-clause linking functions

Clause linking devices can have multiple clause linking functions, covering several semantic types. Some can also have several functions outside of clause linking (cf. §2 of Chapter 10).

A clause linking device can double as a marker of a relative clause, as in Aguaruna (where it is used for temporal linking with a simultaneous meaning: §3.1.1 of Chapter 7). Martuthunira (Chapter 11), like many other Australian languages, employs adjoined relative clauses for clause linking (also see Dixon 2002).

Further polysemous patterns involve tag question markers and disjunctions, as in Mali (Chapter 15; also see §4.7 of Chapter 1), a contrast marker and a negative existential verb, as in ájapaqui from Iquito (§8 of Chapter 6). Polyfunctionality of temporal interrogatives and temporal linkers such as ‘when’ is widespread in familiar languages of Eurasia, but not so much outside it (the only such example in this volume comes from Iquito: §4.2 of Chapter 6).

Not infrequently, a morpheme employed as a clause linker also marks the function of a noun phrase within a clause, as a case or an adposition. The meanings of such morphemes as clause linkers are consistent with the major semantic types outlined in Chapter 1 (also see the partial list in Thompson and Longacre 1985: 177), especially Temporal sequence, Condition, Cause, Purpose, and Possible consequence. Case markers are also used as complementizers (as shown in Galo, Chapter 10; also see Aikhenvald 2008b). There appear to be no examples of cases or adpositions used for expressing addition or alternatives.

English has a handful of prepositions which can occur on a clause, marking its syntactic relationship with another clause. These are: after, before, since, until, till, and for. The meaning of most prepositions is the same with a noun phrase and with a clause: compare (3a) and (3b). Brackets indicate the
boundaries of the noun phrase and of the clause within the scope of the preposition.

(3a) She had a hard time after [the death of her husband]
(3b) She had a hard time after [her husband died]

The preposition since is less straightforward: it has a temporal meaning when used with a noun phrase and a temporal or a causal meaning when used with a clause (also see example (57) in §4.3 of Chapter 1). Both (4a) and (4b) are acceptable. The preposition since has a temporal meaning in both examples. In (4a) its scope is a noun phrase; and in (4b) it is a clause.

(4a) I’ve been very lazy since [the end of summer school]
(4b) I’ve been very lazy since [summer school ended]

However, in its causal meaning since can only be used with a clause, as in (5a).

(5a) Since [I disliked his manner], I turned him down.

This meaning with a noun phrase argument would not be acceptable:

(5b) ?Since my dislike for his manner, I turned him down.

The temporal and the causal meanings are semantically linked—if two events are mentioned together as following each other in time, it may be possible to infer that one is the cause of the other (see Thompson and Longacre 1985: 181 ff.). However, the fact that since expresses a causal relationship only when it links clauses alerts us to the fact that the context of use may entail different semantic overtones for what is traditionally considered the same, polysemous, morpheme.

In a nutshell, the meanings of cases and adpositions on noun phrases are consistent with the semantic functions of noun phrases, as recipients, beneficiaries, instruments, and locations (see overview in Blake 2001). The meanings of cases as clause linkers follow the major semantic types in linking clauses. These are intertwined: temporal sequence often has overtones of condition and cause. Purposive clause linking may also indicate Cause, or Possible consequence (see Chapter 1). Based on the selection of languagespecific correlations between the meanings of a case with a noun phrase and with a clause (a study based on over 100 languages: see discussion in Aikhenvald 2008b), we can suggest a number of semantic correspondences between their functions on a noun phrase and as clause linking devices.

I. Noun-phrase markers with a dative or purposive, or benefactive, meaning, tend to have purposive meanings as clause linkers. Purpose linking is often expressed with the same morpheme as the dative. In Konso (§2 of Chapter 14),
non-main clauses can also be marked at the end by an adverbial case clitic, such as -’e ‘dative’ for purposive clauses. In Iquito (§§ 55.3 and 4.3 of Chapter 6), the allative marker is used for Purpose clause linking and also for temporal anteriority. But, despite its frequency, this is not a steadfast rule: in Ket, the dative case marker is used to mark locative clauses, and even relative clauses (Werner 1997: 353), alongside ‘destination’ (Vajda 2004: 25).

Toqabaqita (Table 2 of Chapter 10) displays somewhat more unusual patterns. The preposition uri marks allative, purpose, and cause with noun phrases, and is employed for Purpose and Cause linking with clauses. The ablative preposition fasi marks Purpose linking, and the preposition suli—which marks prolative and cause with noun phrases—is used for Cause linking with clauses. In some Tibeto-Burman languages, a locative marks purpose complement (as in Lepcha: Plaisier 2006: 119–20; and Cogtse Gyarmong: Nagano 2003: 487). Lichtenberk (1991: 71–4) provides an explanation of how an ablative postposition came to mark positive purpose in Toqabaqita, and Possible consequence, ‘lest’, in another Oceanic language, Kwaio.

II. Noun-phrase markers with locational meanings are likely to develop temporal connotations indicating relative time ‘while’; ‘as soon as’; ‘after, upon, contemporaneous’ and others if they have a clause as their scope. This correlation is akin to a well-documented semantic extension from spatial to temporal notions in the domain of adverbs, and also case markers (Heine and Kuteva 2002: 40–1; 179–80; 183).

A locational meaning of a noun-phrase marker can mirror its meaning with a clause, but within a temporal domain. For example, in Djambarpuynu, an Australian language, the perlative case means ‘along’ with noun phrases, and ‘concurrent with main clause’ on clauses containing motion predicates. An additional extension of ‘along’ with clausal scope is ‘the situation which is the channel or means for the main clause situation’ (see Wilkinson 1991: 641–2). In Kham, the nominal lative case ‘up to’ means ‘until’ when used with a clause (Watters 2002: 317; also see examples in Blake 1999: 307–8, from Australian languages; and Genetti 1986, 1991, for Tibeto-Burman).

Additional temporal correlates of locational cases in Kham (see Table 2 of Chapter 4) include superessive on nouns and ‘as soon as’ with clauses, comparative on nouns and ‘as long as, as much as’ on clauses, allative on nouns and ‘provided that’ on clauses, and ergative/instrumental on nouns and ‘cause’ on clauses. The elative marker on nouns is used for Conditional linking with non-nominalized clauses, and in the meaning of Temporal succession, ‘after’, with nominalizations. This illustrates a certain amount of language-specific unpredictability of individual locational markers in their clause linking functions.
There can be further extensions. A conditional meaning of locative case marker as a clause linker was documented for Ket; this can be viewed as an extension of its temporal meaning (Werner 1997: 354). Elative and ablative have conditional meanings in a number of languages (Rama, Qiang, Kham, and Classical Tibetan). This development can be considered an extension of an erstwhile temporal meaning of a locative morpheme.

A general locative case or an adposition used as a clause linking device is expected to mark Relative time ‘when’ and/or Temporal succession ‘while’. This is corroborated by the data from numerous Tibeto-Burman languages including Kham, Galo, Yamphu (Rutgers 1998: 267–8), Atong (van Breugel 2006: 15–16), Eastern Kayah Li (Solnit 1997: 213; 249; 259), and also Manchu (Tungus-Manchurian), Ket (Yenisseic), and Martuthunira (Chapter 11) and Djambarpyngu (Australian).

That the semantic patterns of cases and adpositions as clause linkers fit in with the mold of semantic patterns of clause linking can be seen as additional evidence in favor of the universal character of these semantic types. More unusual non-core case markers, such as substitutive ‘instead’ in Manambu (Chapter 5), and the similative case ‘like’ in Kwoma (Nukuma family, New Guinea: Kooyers 1974) and in Limbu (Tibeto-Burman: van Driem 1987: 230–5) have the same meanings when linking NPs and when linking clauses. Further examples of case markers in clause linking function are in Gorbet (1973, 1974); also see Moravcsik (1972) and Ohori (1996), for some general observations; further references are in Aikhenvald (2008b).

Adverbial locational markers also develop into exponents of Temporal linking. In Iquito, the polyfunctional forms atiı’ ‘there (focus)’ and atiıji ‘from there’ serve both as spatial adverbs, and as temporal clause linking markers: atiı and atiıji express temporal succession (§4.1 of Chapter 6, and Lev Michael, p.c.), while tii-ji (there-ABLATIVE) forms part of a temporal posteriority collocation, ‘from them until now’ (§4.4 of Chapter 6). As Valentine (§4 of Chapter 8) puts it, in Ojibwe clause linking, ‘relational elements figure prominently, used in relative time expressions, cause, and manner, perhaps in all cases due to semantic extension of more fundamentally locative meanings’. Locational markers can develop into linkers of other types: a conjunction ‘on top of/in addition to’ marks elaboration in Akkadian and goes back to a spatial expression which literally translates as ‘to back of’, with the meaning of ‘on top of’ (§7.2 of Chapter 2).

A recurrent semantic correspondence between spatial meaning of a case, an adposition, or another form, and temporal meaning of a clause linker, confirms that the domains of space and time share conceptual structure.
6. The emergence of clause linkers, and their reinterpretation

Clause linking devices with temporal meanings often come from spatial expressions—see examples and discussion in §4.1 of Chapter 1. Independent connectives often come from anaphoric pronouns. The conjunctive adverbials in Korean contain the anaphoric ku (§5 of Chapter 12), and the anaphoric pronoun nu may function as a connector between two main clauses in Aguaruna (§2.3.2 of Chapter 7). The ‘Result’ linker marker in Iquito (§5.2 of Chapter 6) also goes back to an anaphoric expression: *nihua=áciemu* ‘because of that’. Its restriction to clause-initial position suggests that it has been grammaticalized as a connective.

Connectives can be historically related to other morphemes. The contrast marker in Iquito =*quiemu* is related to the form -*kiha* meaning ‘only’ in Záparo, from the same family (Lev Michael, p.c.). This is reminiscent of the polysemy of Tok Pisin *tasol* (from English *that’s all*) meaning ‘only, alone, just; but, however’.

Adpositional phrases also give rise to connectives: for instance, Akkadian *ašsum* ‘concerning; because’ comes from *anašsumi* ‘to name’ (Chapter 2). This is reminiscent of Korean -*kitaywmun* ey (nomz reason for) ‘because’.

As expected for a language with highly productive serial verb constructions, verbs which typically impart aspectual meanings to the whole constructions (or ‘minor verbs’: see Aikhenvald 2006: 32) develop into conjunctions in Toqabaqita. The form *sui* marks contrast or unexpectedness (see §6.4 of Chapter 10). This form is also used as an intransitive verb *sui* ‘end, Wnish; be Wnished’ and as the completive particle *sui* (example (2) in §1 of Chapter 10).

The same form is also used as an incipient Temporal connective, to emphasize the completion of the first state of affairs before the onset of the next one. The verb heads the predicate in a ‘mini-clause’ in apposition to the clause expressing the completed state of affairs. The literal translation of example (5) in §3.1 of Chapter 10 is ‘They killed the three children, it was finished (sui), they went’.

Grammaticalization of verbs as connectors does not have to involve reinterpretation of serial verb constructions. In Fijian (§5 of Chapter 9), the verb *bale-ta* ‘caused by’ grammaticalized into a marker of Cause linkage (and also into a preposition ‘concerning’). The relator *ni* after *baleta* may originally have been the marker of a ‘that’ complement clause but it appears now to be simply a part of this complex expression. In Toqabaqita, the contrast marker is *dooguqanitaa* which occurs in the Supporting clause; the same form also functions as a verb meaning ‘forgive’ and as an interjection ‘never mind’ (§6.4 of Chapter 10).
Having independent connectives is not a universal feature. They are rare—if attested at all—in clause chaining languages. In these languages, every sentence consists of a series of clauses, links between which are marked by verb endings. Just one clause—typically, the final one in a sentence—carries all the marking of inflectional categories. Typical clause chaining languages are Manambu, Aguaruna, Galo, and Kham (also see Genetti 2005, for a South Asian perspective). Example (8a–b) in Chapter 5 is a typical example of a clause chain.

Clause linking in Korean is achieved through clause enders—which makes it similar to clause chaining—conjunctive adverbials, or combination thereof. These devices differ in their usage: ‘a clause plus a conjunctive adverbial can stand alone as a complete sentence, while a clause plus a conjunctive ender cannot do so. It is possible to have both a clause ender in the non-main clause and a conjunctive adverbial in the main clause for emphasis or certain rhetorical style’ (§5 of Chapter 12).

The clause chaining languages analyzed in this volume have developed independent connectives, based on grammaticalized verbs. Grammaticalized speech verbs in non-final clauses form the basis of connectives in Galo and in Manambu. The speech verb ȣm- ‘say; tell’ in Galo occurs in a connective translatable as ‘(being) thus’. When following realis clauses, it has a causal sense closer to ‘(that fact) being so; because of (that fact)’ (example (22) of §3.1 in Chapter 3). The connective ata-wa-tay (lit. then-say-cotemp) in Manambu (§5.1 of Chapter 5) has no synchronic link with any speech act: its only meaning is ‘because, as a result of’. This grammaticalization of a medial clause form of the verb of speech is congruent with its marking cause in speech reports discussed in §3.2.

Clause chaining constructions grammaticalizing into connectives can involve other verbs with fairly general semantics, e.g. Kham hœi jœi-da ‘thus having made’, meaning ‘that’s why’ (example (43) from Chapter 4) and Manambu a-la-k tœ-ku (dem.dist-fem.sg-dat be-compl.ss) ‘because, as a result of that’. This is reminiscent of Korean -(u)m ey ttal-a(se) (prs-whether-think-and) ‘for fear that, being afraid that’, -(u)m ey ttal-a(se) (nomz at follow-and) ‘according to; as (a result of)’, -(u)p=an-i-la (prs being. only not-be-and) ‘not only ~ but’ (§2 and Table 2 of Chapter 12), and wa-nya ha-myen (why-Q ask-if) ‘because’ (Ho-min Sohn, p.c.).

Bridging constructions in Aguaruna—§2.3 of Chapter 7, and especially example (1)—contain a subordinate form of a pro-verb meaning ‘do that’. Such recapitulating devices operate similarly to connectives. However, unlike the newly grammaticalized connectives ‘that’s why’ and ‘as a result of’ in Kham and Manambu, they are still separate clauses.
We can conclude that reanalysis of medial clauses—whereby they lose their clausehood—can lead to the emergence of connectives. Alternatively, medial clauses with the meaning of Relative time and Same-event addition can be reinterpreted as monoclausal structures, giving rise to complex predicates. This is the case in Manambu (Chapter 5) and in Aguaruna (Chapter 7 and Overall 2007). Similar tendencies have been described for other languages. The progressive aspect in Choctaw formally consists of a clause marked for switch reference and a fully inflected existential or posture verb (Davies 1998: 177–8).

Along similar lines, ‘pseudo-serial’ constructions in Akkadian are used for adverbial modification and contain the linker -ma. Synchronically, they are monoclausal (see §3 of Chapter 2).

Another potential development is for a clause linking device to become reinterpreted as a category of the main clause. Possible consequence in Goemai appears to be an example of this. Here, the Supporting clause always describes an event to be avoided. Hellwig (§2.3 of Chapter 13) reports that in the present-day language, speakers increasingly employ the erstwhile marker of Possible consequence to form the negative imperative. This goes together with reanalysis of dependent clauses as main clauses (documented for other languages, including Australian English: see Stirling 1998). In this instance, a Supporting clause has been reanalyzed as Focal.

7. Where to from now: prospects for further study

The universal semantic types of clause linking are represented in every language, albeit in different ways. The interpretation of some semantic types of clause linking show a stronger dependency on the broader narrative context than others. We saw in §2.1 that Consequence linking demonstrates more reliance on discourse-pragmatic parameters than other types of linking. This issue requires further investigation.

All languages employ prosody as an additional means for marking clause linking, although this is not always given the attention it deserves. Hellwig discusses clause linking tone contours in Goemai (Chapter 13). The importance of prosodic parameters has been highlighted for Galo, Boumaa Fijian, Toqabaqita, and Konso (Chapters 3, 9, 10, and 14) (and see Genetti 2007). A prosodic contour is the only marker for positive conjoined clauses in Manambu—these acquire a segmental dependency marker only when negated. A cross-linguistic study of prosody in clause linking will be a most fruitful field for future research.

Apposition of dependent clauses may have a different semantic effect compared with apposition of independent clauses (also see §3.2). The categories
of each clause can influence the semantics of such linking in different ways. Only further in-depth inductive studies can help us understand these issues.

Further parameters relevant for clause linking may relate to the overall grammatical structure of each language. The existence of several politeness levels is a pervasive feature of Korean (Chapter 12); at least some clause linking devices distinguish various ‘levels’ (cf. §4.4 of Chapter 12). This highlights the fact that—just like most phenomena in a language—one needs to have a substantial grasp of the whole grammar to be able to competently describe the semantics of clause linking.

Last but not least: each chapter in this volume is written by a dedicated field worker and language analyst. Each chapter is based on a comprehensive grammar (either already written, or in preparation) underscored by texts and materials coming from participant-observation, known as ‘immersion fieldwork’ (Dixon 2007). We eschew questionnaires and grammatical elicitation—these allow the researcher to get what they want rather than what the language has to offer. A uniform factual base ensures the validity of inductive generalizations which underlie the semantic basis for the typology of clause linking and its further developments.

References

Breugel, Seino van. 2006. ‘Clause linking in Atong’. Handout for the Local Workshop on Semantics of Clause Linking, RCLT.


