Causal clauses: A cross-linguistic investigation of their structure, meaning, and use

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Abstract

In this paper we investigate the form and function of causal adverbial clauses, which have never been systematically studied from a cross-linguistic point of view. Using data from 60 languages, it is shown that causal clauses tend to be more independent of the associated main clause than other semantic types of adverbial clauses. In contrast to temporal and conditional clauses, causal clauses predominantly follow the (main) clause, include the same non-reduced verb forms as independent sentences, and are often intonationally separated from the semantically related clause. We argue that the particular structural properties of causal clauses are motivated by their communicative function in speaker-hearer interactions. Drawing on conversational data from English, German, Mandarin Chinese and Japanese, we show that causal clauses are commonly used to support a previous statement that has been challenged by the hearer. In this use, causal adverbial clauses function as independent assertions that are only loosely combined with the associated main clause.

1   Introduction

The cause-effect relationship is one of the most fundamental concepts of the human mind that has been studied extensively in various subfields of cognitive science (cf. Sowa 2000; Meyer 2000). Linguistically, causal relationships are commonly expressed by complex sentences consisting of a main and a subordinate clause, but they can also be expressed by two coordinate sentences. In this paper, we examine the structure, meaning, and use of causal clauses from a cross-linguistic point of view. Our analysis concentrates on causal adverbial clauses, but since the distinction between adverbial subordination and sentential coordination is fluid, we will also look at causal clauses at the borderline between subordination and coordination. In fact, the subordination-coordination continuum plays an important role in our study. It is the central claim of this paper that causal adverbial clauses are structurally more independent of the associated main clause than other semantic types of adverbial clauses and often are reminiscent of coordinate sentences.

In the typological literature, causal adverbial clauses have been studied together with other semantic types of adverbial clauses, such as conditional and temporal clauses (cf. Thompson and Longacre 1985; Couper-Kuhlen and Kortmann 2000), but in contrast to these other types, causal clauses have never been systematically investigated from a cross-linguistic point of view. The current study seeks to fill this gap. It is the first cross-

linguistic investigation that systematically examines the form and function of causal clauses from a typological point of view (cf. Hetterle 2007).

Drawing on data from a wide range of languages, the paper argues that adverbial clauses constitute a family of related constructions that vary as to the degree to which they are integrated into a complex sentence. Some adverbial clauses are only loosely adjoined to a neighboring clause, resembling a coordinate sentence, whereas other adverbial clauses are tightly integrated into the main clause (cf. Diessel 2001, 2004: chap 3). The degree of formal integration is determined by several features: the morphosyntactic properties of the verb and its arguments in the adverbial clause (cf. Cristofaro 2003), the positioning of the adverbial clause relative to the main clause (cf. Diessel 2001, 2005), and the intonational link between main and adverbial clauses (cf. Chafe 1984; Ford 1993). The paper shows that causal clauses tend to be less tightly integrated into complex sentences than other semantic types of adverbial clauses. In contrast to temporal and conditional clauses, causal clauses typically include the same verb forms and arguments as ordinary main clauses, are usually placed after the semantically associated clause, and are commonly expressed by a separated intonation unit. Taken together these features suggest that causal clauses are only loosely combined with the associated main clause; they are commonly realized by constructions that exhibit the same morphosyntactic properties as main clauses and thus may be analyzed as coordinate sentences rather than adverbial clauses.

The paper argues that the particular structural properties of causal clauses are motivated by their communicative function in speaker-hearer interactions. Drawing on conversational data from several unrelated languages, it is shown that causal clauses are commonly used to support a problematic statement. More precisely, the paper argues that causal clauses are often embedded in a particular discourse pattern involving three verbal actions: (1) a statement that the hearer does not accept or understand, (2) the hearer's response to this statement indicating disagreement or lack of understanding, and (3) a causal clause providing a reason for the problematic statement (cf. Ford 1993). Causal clauses that are embedded in this discourse pattern are structurally independent sentences that lack the usual properties of subordinate clauses, which they may exhibit in other contexts, notably in written genres. However, in conversational discourse causal clauses are commonly used as independent assertions that are structurally independent of the semantically associated clause.

2 Database

Cross-linguistic investigations are often based on a variety sample including several hundred languages, but we decided to use a probability sample, which tends to be smaller than a variety sample because it is more rigorously designed. A probability sample includes a group of languages that are independent of each other and therefore can be submitted to statistical analysis (cf. Rijkhoff et al. 1993; Rijkhoff and Bakker 1998; Jansen et al. 2006). A pure probability sample would include languages that are selected at random from all languages across the world, but since languages are genetically and geographically related, the selection procedure cannot be entirely at random; instead, the researcher has to control for genetic and areal factors in order to compile a sample in which the languages are independent of each other (cf. Rijkhoff et al. 1993; Bakker to appear).

In our study, we used a stratified probability sample controlled for genetic and areal dispersion. The sample includes 60 languages selected from 60 different genera, i.e. linguistic groups that roughly correspond to the subfamilies of Indo-European (Dryer 1992), distributed across six large areas: Eurasia, Africa, South East Asia and Oceania, Australia and New Guinea, North America, and South America (Dryer 1989, 1992). Thus, the languages in our sample are genetically and geographically unrelated (or only distantly related). A complete list of the languages we examined is given in the appendix.

In what follows, we investigate the cross-linguistic properties of causal clauses in comparison to other semantic types of adverbial clauses. Specifically, we compare causal clauses to temporal and conditional clauses, which are often expressed by similar types of constructions that are historically related (cf. Matthiessen and Thompson 1985; Givón 1990, 2006). However, despite this relationship there are some important differences between them, which are the focus of the current study.

3   The form and function of causal clauses in cross-linguistic perspective

3.1   The morphosyntactic properties of causal clauses

To begin with, adverbial clauses can be expressed by a wide range of constructions that differ in terms of the verb forms and arguments they include. In a recent study, Cristofaro (2003) argued that subordinate clauses can be divided into two basic types: balanced and deranked clauses (cf. Stassen 1985). Balanced subordinate clauses include the same verb forms and arguments as main clauses, but deranked subordinate clauses are different. They include a reduced verb form and do not always require an overt subject. For instance, in English adverbial clauses are commonly realized by participial constructions that do not carry tense and person markers and lack an overt subject.[1]

(1)   And he encountered the problem of conducting with one hand **while** holding the reins with the other eighteen months ago ….

Both the missing subject and the uninflected verb forms are characteristic of deranked subordinate clauses. Since the interpretation of a deranked subordinate clause relies on semantic features of the main clause, it is reasonable to assume that a deranked subordinate clause is more tightly integrated into a complex sentence than a balanced subordinate clause, whose semantic interpretation is more independent of the associated main clause. Note that in English the occurrence of deranked adverbial clauses is most typical of temporal clauses, notably temporal clauses of simultaneity, whereas causal clauses are primarily expressed by balanced constructions. However, in other languages, causal adverbial clauses are also commonly deranked. For instance, in Evenki (Tungusic, Russia) all adverbial clauses are expressed by converbs (cf. Haspelmath 1995). A converb is a particular non-finite verb form that indicates the semantic relationship to the associate main clause by an affix, as in example (2), in which two converbal clauses are marked by the suffix *–kA(n)im* indicating a temporal link of

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[1]   The English examples in this paper are taken from the International Corpus of English, British Component.

anteriority between the converbs and the main clause. Example (3) shows that the same type of construction is used to realize a causal adverbial clause.

(2)   Evenki (Nedjalkov 1997: 45)
      [Asi-va   ga-**kaim**]   [oron-mo   rege-**keim**]   tar   beje suru-re-n.
      wife-ACC   take-CONV reindeer-ACC   sit-CONV   that man go.away-NONFUT-3SG

      'Having taken a wife and having sat on a reindeer that man left.'

(3)   Evenki (Nedjalkov 1997: 53)
      [Engesi   bi-**mi**]   nungan   homo:ty-va   davdy-ra-n.
      strong   be-CONV he   bear-acc.DEF   win-NONFUT-3SG

      'He overcame the bear because he was strong.'

   Interestingly, Cristofaro (2003) showed that causal clauses are less often expressed by deranked subordinate clauses than others semantic types of adverbial clauses. Examining a variety sample of 70 languages, she found that causal clauses are commonly expressed by balanced constructions whereas other semantic types of adverbial clauses, notably temporal and purpose clauses, are typically deranked (see also Cristofaro 2005).

   Our data are consistent with these findings. Following Cristofaro, we distinguished between deranked and balanced adverbial clauses based on the criteria she proposed. Deranked adverbial clauses are expressed by reduced or special verb forms such as infinitives, participles, converbs, and nominalizations, which lack at least some of the inflectional distinctions of verbs in main clauses (such as tense, aspect, mood, or agreement distinctions) and often do not include an overt subject. Balanced adverbial clauses, in contrast, are expressed by finite constructions including the same verb forms and arguments as independent sentences. Note that we disregarded cases of simple clause juxtaposition (i.e. asyndetic parataxis), which Cristofaro included in her sample if juxtaposition served as a general means for the expression of an adverbial relationship. Figure 1 shows that in our sample causal clauses are less often deranked than temporal and conditional clauses, which we lumped together in one class (cf. data in the Appendix).
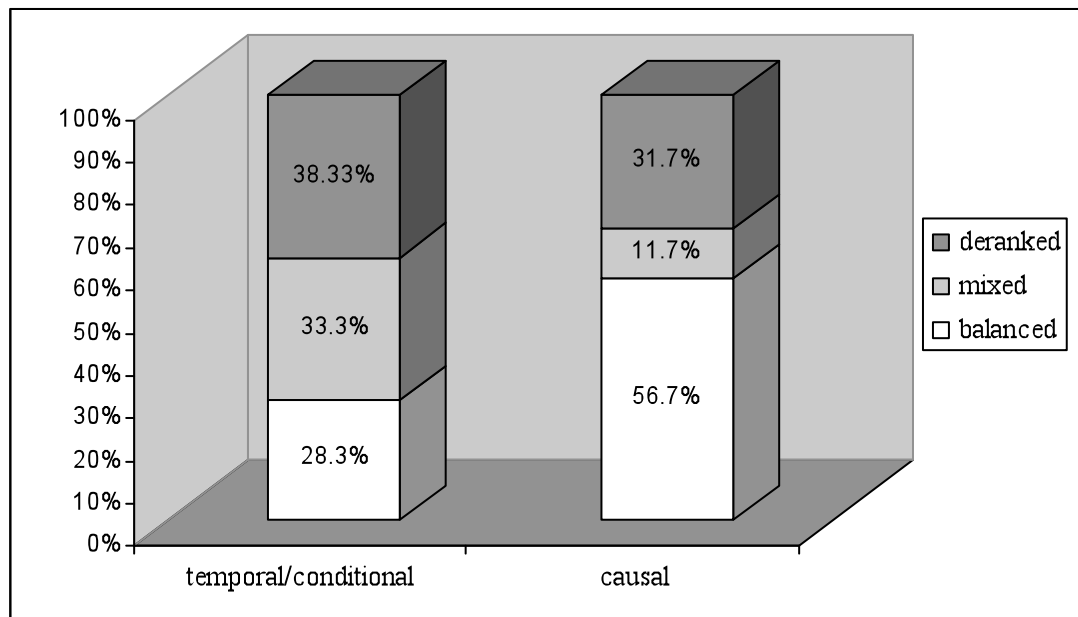
Figure 1: Deranking in temporal, conditional, and causal adverbial clauses.

As can be seen, in more than half of the languages in our sample (56.7%), causal clauses are exclusively expressed by balanced constructions; only a minority of the languages employs deranked causal clauses. If we look at the latter more closely we find that their occurrence is restricted to languages in which temporal and/or conditional clauses are also deranked; there is not a single language in the entire sample in which deranking is an exclusive feature of causal clauses. A randomized 2×3 χ^2-analysis revealed a significant difference between causal clauses and temporal/conditional clauses (χ^2=12.30, *p*<0.01, *B*=10.000), supporting our hypothesis that causal clauses tend to be more independent of the main clause than other semantic types of adverbial clauses.[2]

3.2   The positioning of adverbial clauses

Another feature that distinguishes causal clauses from temporal and conditional clauses is their position. In many languages, the positioning of adverbial clauses is rather flexible. For instance, as can be seen in examples (4) and (5), in English adverbial clauses can precede or follow the associated main clause.

(4)   He got really pissed off **when** we were watching Back To The Future Two.
(5)   **When** she gets on that phone she just does not get off.

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[2]   Since language sampling cannot be entirely at random, Janssen et al. (2006) recommend that typological data be submitted to non-parametric tests, which in contrast to parametric tests do not make assumptions about the distribution of the variables. In this study, we used a randomized chi-square test, which permits logical inferences from the tested sample, rather than the usual statistical inferences on the population. Janssen et al. argue that these tests are as valid and informative as the standard statistical tests that are better known in linguistics.

If the adverbial clause follows the main clause, as in example (4), the bi-clausal structure can be processed sequentially; that is, speaker and hearer can process one clause at a time. The adverbial clause may be planned and adjoined to the main clause only after the processing of the main clause has been completed (cf. Diessel 2005, 2008). By contrast, adverbial clauses that precede the main clause are only possible if the speaker plans from the very beginning to produce a bi-clausal structure in which the adverbial clause is followed by a main clause. In other words, complex sentences with initial adverbial clauses constitute a single processing unit, whereas complex sentences with final adverbial clauses may be planned and processed as a sequence of two separate clauses. The position of the adverbial clause is thus essential to the organization of a complex sentence. Since final adverbial clauses can be planned and processed after the completion of the main clause, it is reasonable to assume that they are less tightly integrated in a complex sentence than initial adverbial clauses, which are generally planned and processed together with the following main clause.

Interestingly, Diessel (2001) observed that the ordering of main and adverbial clauses varies with the meaning of the adverbial clause. Drawing on data from a convenience sample of 40 languages, he found that conditional clauses tend to precede the main clause, temporal clauses are commonly found both before and after the main clause, and causal clauses typically occur at the end of a sentence, i.e. after the associated main clause.

Our data are consistent with these findings. As can be seen in Figure 2, temporal and conditional clauses precede the main clause more often than causal clauses. In 45 percent of the languages in our sample, causal clauses follow the main clause (either rigorously or as a tendency), whereas temporal and conditional clauses are commonly preposed. A randomized 2×3 χ^2-analysis revealed a highly significant difference in the positioning of causal clauses and temporal/conditional clauses (χ^2=31.4914, p<0.001, B=10.000), suggesting that the predominant use in final position is a particular property of causal clauses that sets them apart from other semantic types of adverbial clauses, supporting our hypothesis that causal clauses are less tightly integrated in complex sentences than other semantic types of adverbial clauses.
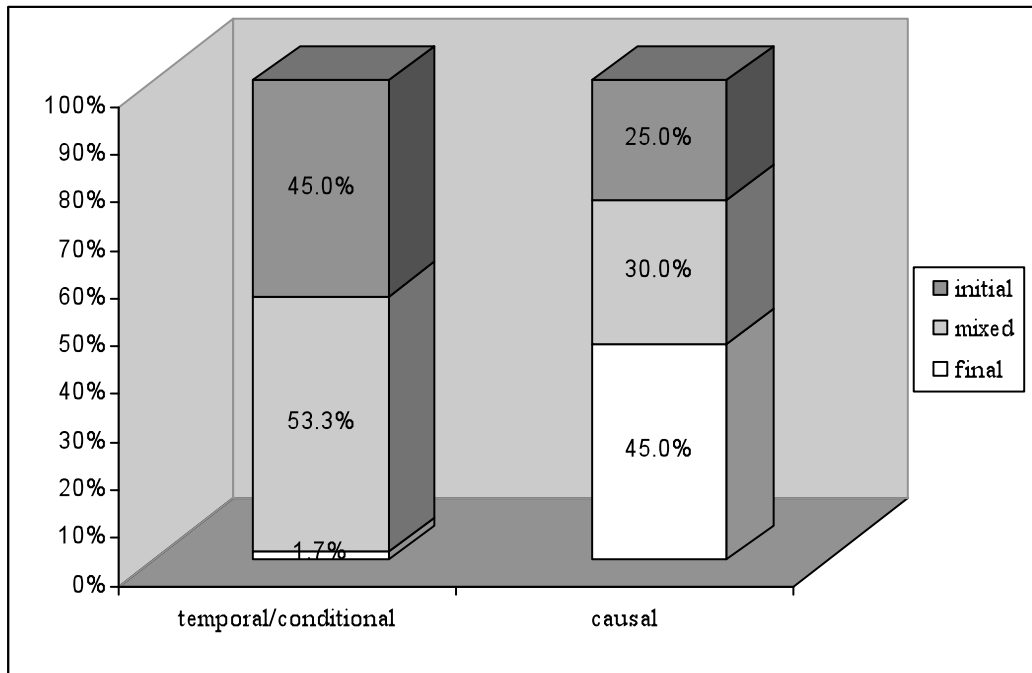
Figure 2: Positioning of temporal, conditional, and causal adverbial clauses.

Note that the occurrence of initial causal clauses is restricted to particular languages types. Languages in which causal clauses precede the main clause are left-branching languages, i.e. OV languages, in which all adverbial clauses are commonly preposed (cf. Diessel 2001; Hetterle 2007). As can be seen in Table 1, in VO languages adverbial clauses are commonly found both before and after the associated main clause. There is one language, Wambaya (West Barkly, Australia), an Australian language with extremely flexible word order, in which all adverbial clauses typically follow the main clause; but in all other VO languages the positioning of adverbial clauses varies with their meaning: While temporal and conditional clauses often precede the main clause, causal clauses are commonly postposed.

Table 1: The ordering of verb and object and the positioning of adverbial clauses.

	Initial adverbial clauses	Initial and final adverbial clauses	Final adverbial clauses	Total
VO	-	**19**	**1**	20
OV	**15**	**15**	-	30
VO/OV	**1**	**9**	-	10
Total	16	43	1	60

By contrast, in OV languages causal clauses are also commonly placed before the main clause. As can be seen in this table, there are 15 OV languages in our sample in which all adverbial clauses, including causal adverbial clauses, generally precede the main clause (disregarding cases of pragmatically motivated extraposition), suggesting

that the occurrence of initial causal clauses is motivated by general properties of this language type. Adopting Hawkins' processing theory of constituency and order (Hawkins 1994, 2004), Diessel (2005) argued that left-branching languages tend to employ initial adverbial clauses because in languages of this type complex sentences are often easier to process, and thus more highly preferred, if the adverbial clause precedes the main clause. Specifically, he claims that OV languages tend to employ initial adverbial clauses if they are marked by a subordinating morpheme at the end of the adverbial clause, as in the following example from Barasano (Tucanoan, Columbia) in which a causal adverbial clause is marked by a subordinating affix attached to the clause-final verb.

(6) Barasano (Jones and Jones 1991: 159)
Yukú yeba-u ti   wãbe kuti-**hare**   'Yeba bãs-a
Tree yeba-tree   3in   name have-because Yeba   human-p

yã-a-ha   yua'   yi-rã-bã   ĩdã.
be-PRES-3   1   say-anp-3p   3p

'Because the tree has the name Yebau, they refer to themselves as Yeba's people.'

Our data are consistent with this hypothesis. In all 15 languages in which adverbial clauses precede the main clause regardless of their meaning, the subordinator occurs at the end of the adverbial clause; whereas in most other languages, both VO and OV, adverbial clauses are marked by an initial subordinator. In other words, the consistent use of initial adverbial clauses correlates with the occurrence of a final subordinator, which may favour the order adverbial-main clause for processing reasons (cf. Diessel 2001, 2005).

However, the processing analysis does not account for all of the data. In particular, it does not explain why in the vast majority of the languages in our sample the positioning of adverbial clauses varies with their meaning. Diessel (2005) suggests that the distributional differences between conditional, temporal, and causal clauses are motivated by semantic and pragmatic factors that characterize individual types of adverbial clauses, but his analysis is mainly concerned with conditional and temporal clauses. In what follows we will take a closer look at the semantic and pragmatic features of causal clauses. Specifically, we will review some discourse studies that examined the use of causal clauses in conversations. Our analysis concentrates on a few selected languages in which the conversational use of causal clauses has been studied based on quantitative corpus data: English, German, Mandarin Chinese, and Japanese. The review of the conversational literature suggests that the particular structural properties of causal clauses are motivated by their occurrence in a particular discourse pattern in which causal clauses function to support a previous statement that has been questioned by the hearer.

4 The form and function of causal clauses in conversational discourse

4.1 Causal clauses in English conversations

The most frequent causal conjunction in English is *because*. Apart from *because*, *since* and *as* can function as causal subordinate conjunctions, but unlike *because*, *since* and *as* are also used in temporal adverbial clauses. In contrast to certain other semantic types of adverbial clauses, notably temporal and purpose clauses, causal adverbial clauses are predominantly expressed by balanced adverbial clauses.

Moreover, causal clauses show a strong tendency to follow the associated main clauses (cf. Altenberg 1984; Schleppegrell 1991; Ford 1993, 1994; Couper-Kuhlen 1996; Diessel 1996, 2005; Hetterle 2007). In particular in spoken discourse, causal clauses are almost always post-posed. Using data from conversational discourse, Ford (1993) found that while conditional and temporal clauses often precede the main clause, causal clauses are always placed at the end of the sentence. As can be seen in Table 2, there was not a single causal clause in Ford's entire database that occurred in front of the associated main clause.

Table 2: Positioning of English adverbial clauses (based on Ford 1993: 24).

	Conditional	Temporal	Causal	Total
Initial	**26 (59.1%)**	**21 (34.4%)**	**0 (0%)**	47 (26.1%)
Final	**18 (40.9%)**	**40 (65.6%)**	**75 (100%)**	133 (73.9%)
Total	44	61	75	180

Similar results are reported in Diessel (2005), who investigated the positioning of finite adverbial clauses in both spoken and written genres. Like Ford, he found that in English conversations causal clauses almost always follow the main clause; but interestingly in written discourse, causal clauses are also commonly placed before the main clause. As can be seen in Table 3, initial causal clauses are especially frequent in academic writing, in which they precede the main clause almost as frequently as temporal clauses. Note, however, that initial causal clauses are commonly introduced by *since* or *as*. In Diessel's data, 50 percent of the initial causal clauses in academic writing are marked by *since* or *as*, whereas final causal clauses are mostly introduced by *because*.

Table 3: Proportion of initial adverbial clauses in different genres (based on Diessel 2005: 454).

	Conditional	Temporal	Causal
Conversation	**72.9%**	**41.5%**	1.1%
Fiction	**67.0%**	**34.1%**	10.2%
Academic writing	**72.2%**	**34.2%**	27.1%
Mean	70.7%	36.6%	12.8

If we look at the use of final clausal clauses in conversations, we find that they are often intonationally separated from the preceding main clause. In Ford's data, 53 percent of all causal clauses follow a main clause with closing intonation (see also Couper-Kuhlen 1996), whereas temporal and conditional clauses are usually bound to the preceding clause: Only 18 percent of the final temporal clauses and 33 percent of the final conditional clauses are intonationally separated from the main clause in her data.

What is more, Ford noticed that final causal clauses are often prompted by a hearer response indicating disagreement or lack of understanding. Consider for instance the following example from Ford's database, in which the speaker adds a *because*-clause to his previous statement after the hearer expressed surprise (cf. Ford 1993: 115).

(7)   A: Did you get ye:r/ … your first pay check from it?
       A: … At least?
       B: No, I won't get that for a couple of weeks yet.
       A: Oh, … w'l/
       B: **Cause** it takes a long time.
       A: At least it's in the bank.
       B: Yeah it will be.

In example (7), the occurrence of the *because*-clause is indirectly prompted by an interjection (i.e. *oh*, forth line), but the hearer may also directly ask for an explanation, as in example (8), in which the *because*-clause provides an answer to a causal *why*-question (example from International Corpus of English).

(8)   A: Well I mean part of the reason I am eating will be that I/ we don't have to
          have a picnic.
       B: Yeah.
       B: Why?
       A: **Because** you hate getting anything like that prepared.

What these examples demonstrate is that causal clauses are commonly used "in response to interactional trouble" (Ford 1993: 135). They serve as independent speech acts that are only loosely adjoined to the associated main clause, suggesting that causal clauses are less tightly combined with the (main) clause than other semantic types of adverbial clauses. In fact, a number of studies have argued that final *because*-clauses

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function as coordinate sentences rather than adverbial clauses (cf. Schleppegrell 1991; Ford 1993, 1994).

The particular function of causal clauses is reflected in the fact that in final position *because*-clauses are compatible with syntactic structures that are usually restricted to ordinary main clauses. As Lakoff (1984) pointed out, in contrast to conditional *if*-clauses, final *because*-clauses may occur with a tag question (cf. 9a-b), locative inversion (cf. 10a-b), or a rhetorical question (cf. 11a-b) (examples from Lakoff 1984: 474; see also Green 1976).

(9) a. I guess we should call off the picnic **because** it's raining, isn't it?
     b. *I guess we should call off the picnic **if** it's raining, isn't it?

(10) a. I'm leaving **because** here comes my bus.
     b. *I'm leaving **if** here comes the bus.

(11) a. The Knicks are going to win, **because** who on earth can stop Bernard?
     b. *The Knicks are going to win, **if** who on earth can stop Bernard?

Note that these phenomena are not permissible if the *because*-clause precedes the main clause (cf. 12a-b), suggesting that initial and final causal clauses are two distinct constructions.

(12) a. *Because it is raining, isn't it, I guess we should call off the picnic.
     b. *Because here comes the sun, I'm leaving.
     c. *Because who on earth can stop Bernard, the Knicks are going to win.

As Chafe (1984), Givón (1990), and others have argued, initial adverbial clauses serve particular discourse pragmatic functions. They provide a thematic framework that helps the hearer to interpret the subsequent main clause. This explains why the syntactic structures in (9) to (11) are not compatible with causal clauses that precede the main clause. Since initial adverbial clauses are used for discourse-organizing functions, they cannot occur with main clause phenomena such as tag questions or rhetorical questions that are immediately tied to the illocutionary force; this is only possible in a final adverbial clause functioning as an independent assertion.

4.2   Causal clauses in German conversations

Like causal clauses in English, causal clauses in German tend to be more independent of the main clause than other semantic types of adverbial clauses. The most frequent causal subordinate conjunction in German is *weil*. In addition to *weil*, *da* can introduce causal adverbial clauses; but unlike *weil*, *da* is largely restricted to formal registers.

Examining data from various spoken and written genres, Diessel (1996) found that in German causal clauses typically follow the main clause. As can be seen in Table 4, 76.6 percent of all causal clauses occur after the main clause in Diessel's data, whereas

conditional clauses are commonly preposed and temporal clauses are about equally frequent in initial and final position (χ^2=77.1, *df* =2, *p*<0.001).

Table 4: Positioning of German adverbial clauses (based on Diessel 1996: 72).

	Conditional	Temporal	Causal	Total
Initial	**151 (69.9%)**	**82 (49.1%)**	**33 (23.4%)**	266
Final	**65 (30.1%)**	**85 (50.9%)**	**108 (76.6%)**	234
Total	216	167	141	500

The vast majority of the initial causal clauses occur in written genres and are marked by *da*, suggesting that the occurrence of initial causal clauses is a particular trait of formal registers. In free conversations, causal clauses are usually introduced by *weil*, which predominantly occurs in final adverbial clauses. In Diessel's data, 79 percent of the *da*-clauses precede the main clause, whereas 92 percent of the *weil*-clauses are postposed.

Like English *because*-clauses, German *weil*-clauses are commonly used as independent (coordinate) sentences if they follow the main clause. One indication for this is that *weil*-clauses are often used with main clause word order. In standard German, *weil*-clauses include the finite verb in final position like all other semantic types of adverbial clauses; but in colloquial German *weil* is often used with main clause word order, i.e. with the finite verb in second position (cf. 13 from Günther 1996: 42).

(13) Der hat sicher wieder ge-soff-en; **weil** …
3SG.MASC.NOM have.AUX.3SG.PST probably again PTCP-drink.PST-PTCP because

sie läuf-t total deprimiert durch die Gegend.
3SG.FEM.NOM run.PRES-3SG totally depressed through DET.FEM.SG.ACC area

'He is probably drunk again, because she is running around totally depressed.'

The occurrence of main clause word order in *weil*-clauses has been discussed extensively both in the media and in linguistics (cf. Keller 1993; Günther 1996; Pasch 1997; Gohl and Günther 1999; Uhmann 1998). In the media, this phenomenon is commonly characterized as language decay, but linguists agree that the use of main clause word order in *weil*-clauses is motivated by the communicative function. Like English *because*, German *weil* can introduce an independent assertion supporting a previous statement that the hearer may not understand or may not find convincing. Consider for instance the dialogue in example (14), in which the *weil*-clause supports a statement that the hearer would not be able to understand without an explanation (example 14 from Uhmann 1998: 97).

(14) A: Und ich äh hoff-e auch, dass ich Herr-n Mackermann
and 1SG hm hope.PRES-1SG PART COMP 1SG Mr.-ACC Mackermann

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davon	überzeug-en	kann.	
of.that	convince-INF	can.AUX.1SG.PRES	

B:
Ja	da/ da	möcht-Ø	ich		also	kein-e
Well	there	want.AUX.PRES-1SG	1SG.NOM		PART	no-SG.FEM.ACC

Prognose	wag-en,	**weil**	der	Herr-Ø
prediction.ACC	dare-INF	because	DET.SG.MASC.NOM	Mr.-NOM

Mackermann	ist	ähm	na...	sagen	wir	mal
Mackermann	be.3SG.PRES	hm	ITJ	say.1PL.PRES	1PL.NOM	PART

Kein	bequemer	Partner.
no.MASC.SG.ACC	easy.MASC.SG.ACC	partner.ACC

A: 'I just hope that I can convince Mr. Mackermann of that.'
B: 'Well, I don't dare to make a prediction, because Mr. Mackerman is not a/ hm
   let's say, not an easy partner.'

Note that the *weil*-clause is intonationally separated from the semantically associated clause and that it includes an interjection (i.e. *na*) and a metalinguistic formula (i.e. *sagen wir mal* 'let's say'), which are characteristic of main clauses. The *weil*-clause functions as an assertion and is structurally independent of the semantically associated clause. Another indication that this construction has main clause status is that it allows for word order permutations that are not permissible in adverbial clauses (cf. Uhmann 1998). For instance, as can be seen in example (15), a *weil*-clause with main clause word order can occur with a topicalized adverb at the beginning of the *weil*-clause, which is unacceptable if the finite verb occurs at the end of the clause (example 15 from Uhmann 1998: 111).

(15)
Ich	frag-Ø	dich	dann	noch mal;	**weil**	nachher
1SG-NOM	ask-1SG.PRES	2SG.ACC	then	again	because	later

treff-Ø	ich	mich	mit	dem	Köhlersen.
meet.pres-1sg	1sg .nom	refl.1sg.acc	with	det.sg.masc.dat	Köhlersen

'I'll ask you again, because later I'll meet Köhlersen.'

Finally, while ordinary adverbial clauses can precede the main clause, *weil*-clauses with main clause word order cannot be fronted. As can be seen in (16a-b), a *weil*-clause with main clause word order is not acceptable before the (main) clause, because the assertive function of the *weil*-clause is incompatible with the discourse-organizing function of a preposed adverbial clause (see above).

(16) a. Ich mache das nicht, **weil** dazu habe ich einfach keine Lust.

'I don't do that, because I just don't feel like it.'

    b. *__Weil__ dazu habe ich einfach keine Lust, mache ich das nicht.

4.3   Causal clauses in Chinese conversations

Since English and German are genetically and geographically related, one might assume that they inherited the paratactic use of causal clauses from their common ancestor language or through language contact. However, in a recent study Wang (2006) showed that causal clauses in Mandarin Chinese exhibit the same main clause phenomena in conversations as causal clauses in English and German, suggesting that the paratactic use of causal clauses is not a particular trait of Germanic or European languages (see also Biq 1995; Tsai 1996).

Using data from both spoken and written discourse, Wang found that causal clauses introduced by *yinwei* 'because' tend to follow the main clause, whereas conditional and temporal clauses are commonly preposed. The distributional contrast between causal, conditional and temporal clauses is especially striking in spoken data, notably in conversations. As can be seen in Table 5, in Wang's conversational data 74 percent of all causal clauses occur in final position, i.e. after the main clause, whereas 87 percent of the conditional clauses and 91 percent of the temporal clauses are preposed (χ^2=177.43, *df*=2, *p*<0.001).

Table 5: Positioning of Mandarin adverbial clauses in conversations (based on Wang 2006: 54).

	Conditional	Temporal	Causal	Total
Initial	**94 (87.0%)**	**110 (90.9%)**	**53 (26.1%)**	257 (59.5%)
Final	**14 (13.0%)**	**11 (9.1%)**	**150 (73.9%)**	175 (60.5%)
Total	108	121	203	432

Interestingly, the majority of the causal clauses in Wang's data are intonationally unbound: 62 percent of the final *yinwei*-clauses are independent intonation units that follow a main clause with closing intonation, as in example (17), in which the causal clause occurs after a short pause (filled with the hearer's back channel response to the previous sentence) (example 17 from Wang 2006: 71-72).

(17) A: ... Ta   yi   tian   shui   duojiu?
            ... 3SG   one   day   sleep how.long

       B: ... Qishi   shui/ .. ta   dagai   ye   keyi   shui   nage/
           ... actually sleep .. 3SG probably   also   can   sleep   that

           .. qishi   wo   bushi hen   queding   .. ta   meitian
           .. actually 1SG   NEG   very   sure   .. 3SG everyday

           wanshang jidian shui.
           night   what.time   sleep.

A: .. Mm.
　.. Mm.

B: .. **Yinwei** .. wo　　doushi xian　shui.
　.. Because　1SG　　always early　sleep

A: '... How much does she sleep?'
B: '... Actually sleeping/ .. she can probably sleep for/
　.. Actually, I'm not sure how much she sleeps every night.'
A: '.. Mm.'
B: '.. Because .. I always go to bed first.'

　　In this example, the *yinwei*-clause serves as an independent speech act supporting the speaker's previous assertion. Wang characterizes causal clauses of this type as coordinate sentences that are structurally independent of the semantically associated clause. Thus, like causal clauses in English and German, causal clauses in Mandarin Chinese are often used as independent assertions that speakers use to justify or support a previous statement. Note that in written discourse, causal *yinwei*-clauses are more similar to other semantic types of adverbial clauses: 56.5 percent of all causal clauses in Wang's written data precede the main clause providing a thematic ground for the interpretation of subsequent clause(s) (Wang 2006: 56). Thus, while causal clauses in Chinese conversations are commonly used as independent speech acts, in writing they behave more like ordinary adverbial clauses functioning to organize the information flow in the ongoing discourse.

4.4　Causal clauses in Japanese conversations

Let us finally turn to Japanese, a left-branching language with relatively rigid word order in which dependent categories generally precede the head (cf. Kuno 1978). Since adverbial clauses are dependent categories, they are usually placed before the main clause in Japanese (ibid.). This raises the interesting question how causal clauses are realized in Japanese conversations. Do they follow the same discourse pattern as causal adverbial clauses in English, German, and Mandarin Chinese or is the conversational use of causal clauses different in Japanese?

　　This question has been addressed in a study by Ford and Mori (1994) that compared the conversational use of causal clauses in English and Japanese. Like other semantic types of adverbial clauses, causal clauses are marked by a connective particle in Japanese, *kara* 'because', which occurs at the end of the adverbial clause (cf. example 18 from Ford and Mori 1994: 40).

(18)　Peepaa　kaite　nai　**kara**　watashi　wa　dame nan　desu　yo.
　　paper　write　NEG　**because**　1SG　TOP　not.good　CO　PART
　　'Because I haven't written any paper, I have little chance.'

In the literature, it is commonly assumed that the canonical position of adverbial clauses in Japanese is before the main clause, but Ford and Mori found that this does not hold true for causal clauses in conversations. In their data, *kara*-clauses are also commonly placed after the main clause. As can be seen in Table 6, 47 percent of the causal clauses in Ford and Mori's data are extraposed to the position after the main clause. This is in stark contrast to conditional and temporal clauses, which usually precede the main clause (χ^2=59,90, *df*=2, *p*<0.001).

Table 6: Causal clauses in Japanese conversations (based on Ford and Mori 1994: 41).

	Conditional/Temporal	Causal	Total
Initial	**178 (91%)**	**61 (53%)**	239 (77.1%)
Final	**17 (9%)**	**54 (47%)**	71 (23.9%)
Total	195	115	310

What is more, the vast majority of the final *kara*-clauses do not occur under the same intonation contour as the preceding main clause. In Ford and Mori's data, 93 percent of the final *kara*-clauses are independent intonation units that are separated from the preceding (main) clause. Note that conditional and temporal clauses are more often bound to the main clause: 59 percent of the final conditional and temporal clauses occur under the same intonation contour as the preceding main clause (cf. Ford and Mori 1994: 41).

The particular structural properties of *kara*-clauses reflect their particular use in conversations. As Ford and Mori (1994) showed, like causal clauses in English (and German and Mandarin Chinese), causal clauses in Japanese are commonly used to support a statement that the hearer does not accept or understand. Consider for instance example (19), in which speaker B produces a *kara*-clause in order to explain his previous statement, which speaker A is unlikely to accept as an answer to her question (cf. 19 from Ford and Mori 1994: 43-44).

(19) A: Amerika   josei   wa   ja   ikaga   doo   desu   ka?
America   woman   TOP   then   how   how   COP   Q

B: Nakanaka   hitokoto   de   iemasen   nee.
not.easily   one.word   by   cant.say   PART

B: <u>Ano   boku   no   un   honto   iroNna   hito   iru</u>   **kara**.
well   1SG   GEN   yeah   really   various.kind   people   exist   because

A: 'What do you think of American women then?'
B: 'I can't say so easily.'
B: 'Well, my/ yeah because really there are various kinds of people.'

Example (20) is similar in this regard. In the discourse preceding this sentence speaker A argued that she expects her students to express their own opinion in an essay exam; speaker B replied that this depends on the kind of question. However, speaker A

disagrees and supports her view by the *kara*-clause in (20) (example from Ford and Mori 1994: 46).

(20) | Maa | mondai | ni mo yoru | daroo | kedo, | <u>boku</u> <u>wa</u> | <u>docchi</u> | <u>ka</u> |
|-----|--------|-----------|-------|-------|-----------|---------|---------|
| well | question | on also depend | may | although | 1SG TOP | which | Q |

<u>tte</u>	<u>iu</u>	<u>to</u>	<u>originaritii</u>	<u>o</u>	<u>motomeru</u>	<u>hoo</u>	<u>da</u>	**kara**.
QUOT	say	if	originality	ACC	desire	type	COP	because

'Well, even though it may depend on the question, (I still disagree) because I'm the kind of person who prefers originality.'

Interestingly, like causal adverbial clauses in English and German, causal adverbial clauses in Japanese can occur with main clause phenomena that are not permissible in other semantic types of adverbial clauses. As Hara (2008: 229-230) pointed out, *kara*-clauses may include the contrastive marker *wa* and the evidential morpheme *sooda/soona*, which may not occur in temporal and conditional adverbial clauses.

In addition to *kara*, Japanese has another causal conjunction, *datte*, that is commonly translated into English by 'because'. However, *datte* is not a subordinate conjunction; it occurs at the beginning of a clause that generally follows the semantically associated sentence. In contrast to *kara*-clauses, *datte*-clauses cannot be preposed (cf. 21 from Ford and Mori 1994: 44).

(21) | Kimete | nai | yo. | **Datte** | kaanegii meron | nante | itsutsu | da |
|--------|-----|-----|-----------|----------------|-------|---------|-----|
| decide | NEG | PART | because | Carnegie Mellon | | five | COP |

<u>tte</u>	<u>iu</u>	<u>shi.</u>
PART	say	

'I haven't decided. Because Carnegie Mellon for instance requires five (references).'

According to Ford and Mori, *datte* occurs in the same discourse context as *kara*; both are commonly used in situations in which speaker and hearer disagree about a previous statement or action. The two conjunctions differ in that *datte* expresses the disagreement more forcefully than *kara*; but this is just a minor aspect of their use. Important is that both types of causal clauses are used in the same discourse pattern that we observed in the use of causal clauses in other languages. Like speakers of English, German, and Mandarin Chinese, Japanese speakers make common use of causal clauses as independent assertions; both *datte*-clauses and postposed *kara*-clauses function to support a controversial statement (or action) that has been challenged by the hearer.

4.5 Other languages

Concluding this section, we will look at the causal clauses in a few other left-branching languages in our sample. We suspect that in left-branching languages with initial adverbial clauses right-extraposition is a common strategy to use causal clauses as independent assertions, but apart from the Japanese data reviewed in the previous section we do not have any evidence to support this view. However, we *do* have

evidence that causal clauses are often realized by coordinate sentences that supplement the use of adverbial clauses in left-branching languages, like *datte*-clauses in Japanese. For instance, in Santali (Munda, India) adverbial clauses are realized by converbs that generally precede the main clause (cf. example 22); but causal clauses are different. As can be seen in (23), causal clauses are expressed by finite sentences that generally follow the associated clause. Like Japanese *datte*-clauses, these constructions are independent intonation units that are marked by a conjunction at the beginning of the causal clause.

(22)　Santali (Neukom 2001: 185)

<u>Oṛak'-re</u>	<u>sɛn-**kate**</u>	uni	haṛam-dɔ	hɔpɔn-tɛt'	koṛa-e
house-LOC	go-CONV	that	old.man-TOP	son-3POSS	boys-3SG.SBJ

met-a-e-kan-a …
say-appl-3sg.obj-ipfv-ind

'When (he) reached home, the old man said to his son, …'

(23)　Santali (Neukom 2001: 180)

Am-ṭhɛn-ge	baba-ɲ	cala-k'-kan-a;
you(s)-DAT-FOC	father-1SG.SBJ	go-MID-IPFV-IND

<u>**ɛnte**- ɲ</u>	<u>badae-y-et'-a</u>	dhərti	mɔtɔ-re-dɔ
for/because-1SG.SBJ	know-y-IPFV:ACT-IND	earth	among-LOC-TOP

<u>am</u>	<u>kan-ge-a-m</u>	<u>məlik-dɔ.</u>
you.sg	cop-foc-ind-2sg.sbj	master-top

'I am coming to you, father, because I know that you are the master in the world.'

A similar causal clause construction occurs in Kannada (Dravidian, India), another left-branching language in which adverbial clauses commonly precede the main clause. Interestingly, Kannada has multiple causal clause constructions that differ in terms of their structure and use. There are two types of causal clauses with deranked verb forms that generally precede the main clause like all other semantic types of adverbial clauses in Kannada (cf. 24-25). In addition, there is a finite type of causal clause that includes an initial conjunction and always follows the semantically associated clause (cf. 26). According to Sridhar (1990: 66), the two non-finite causal clauses are subordinate constructions, whereas the finite clause functions as an independent sentence. Although it expresses the same causal link as the two non-finite clauses, there is no evidence that this construction is subordinated to the main clause.

(24)　Kannada (Sridhar 1990: 74)

Bisilu	hecca:giruv-**udarinda**	oLage:	a:Ta	aDo:Na.
heat	much.ADV:be-because	inside.EMPH	game	play.HORT

'Since it's very hot, let's play inside.'

(25) Kannada (Sridhar 1990: 74)

Ra:manige	jvara	bandidda	**karana**	na:vu	maduvege
Rama.DAT	fever	come.PST.PRF	because	we	wedding.DAT

barala:galilla.
come.INF.possible.INF.NEG

'Because Rama had a fever, we couldn't come to the wedding.'

(26) Kannada (Sridhar 1990: 75f)

Na:vu	mya:cige	ho:galla,	**ya:kandre**	namma	yajama:narige	mayyalli
we	match.DAT	not.go	because	my	husband.DAT	body.LOC

sariya:gilla.
not.well.ADV

'We won't go to the match because my husband isn't feeling well.'

There are several other left-branching languages in our sample in which causal relationships are commonly expressed by coordinate sentences while temporal and conditional clauses are realized by adverbial clauses (e.g. Lavukaleve, Marphatan Thakali, Lakota, Abun, Supyire). Interestingly, in some of these languages, causal clauses are marked by a reduced causal question reflecting the interactive use of these constructions in conversations. For instance, in Marphatan Thakali (Bodic, Nepal) there are several causal clause constructions, but the most common strategy to express a reason or cause involves the expression *tálan1 pi3-janse*, which literally means 'if you ask why':

(27) Marphatan Thakali (George 1996: 220)

T'e	lo1-la	a3	k'am2	**tálan1**	**pi3-janse**	mi2	a3	mran1.
3SG	read-INF	NEG	can	why	say-COND	eye	NEG	see

'He cannot read because he is blind.' [lit. 'He cannot read. If you ask why: He is blind.']

George (1996) describes *tálan1 pi3-janse* as a "petrified construction" that has assumed the function of a causal conjunction introducing a coordinate sentence. Similar constructions occur in Supyire (Gur, Mali) and Koyra Chiini (Songhay, Mali). In Supyire, the commonest way of expressing a causal clause involves a reduced question: *ŋàhá ná yɛ* 'what for' or *ŋàhá kúrúgó yɛ* 'through what' (cf. 28). Carlson points out that the connecting question is intonationally separated from the combined clauses by pauses, suggesting that the reason clause after *ŋàhá ná yɛ* functions as an independent assertion, whose "syntactic subordination and integration into the main clause has not progressed very far" (Carlson 1994: 580-581).

(28) Supyire (Carlson 1994: 580)

Bòm-ɛɛgé	mɛgé	mpyi	"Sámbà	na	ŋ-kwɔhɔlì";
Baboon-male.DEF	name.DEF	was	Samba	PROG	INTR-dance

àhá	ná	yɛ,	kwɔhɔra	a	tààn	ka	à.
hat	on	Q	dancing.DEF	PRF	be.sweet	it	to

'The male baboon's name was 'Samba is dancing', because it likes dancing.'

In Koyra Chinni, causal clauses are commonly marked by *maa se* 'because' (cf. example 29), which also appears in causal questions (cf. example 30). According to Heath (1999: 182), *maa se* is a genuine question word that has assumed the additional function of a causal clause marker.

(29) Koyra Chiini (Heath 1999: 280)

A	wane	albarka	di	jaatir	o	bow	**[maa**	**se]**	a-a
3SG	POSS	force	DEF	self	IMPV	be.big	what?	DAT	3SG.SUBJ-IMPV

jii-jii.
REDUPL.be-only

'It's (melon seeds') very value is great, because it is oily.'

30) Koyra Chiini (Heath 1999: 182)

[**Maa**	**se**]	n	koy?
what?	dat	2sg.subj	go?

'Why did you go?'

The same extension of a question word to a causal connective occurs in Italian. Like Koyra Chiini, Italian uses an interrogative pronoun, *perché* 'why', to mark a causal clause (cf. Schwarze 1995). Finally, English uses the copular clause *that's why* to indicate a reason, though in this case the reason precedes the statement after the connecting clause (cf. *They are not too bad.* **That's why** *I'm worried*).

5   Conclusion

To summarize, this paper has shown that causal clauses are commonly expressed by constructions that are less tightly integrated into complex sentences than other semantic types of adverbial clauses. In contrast to conditional and temporal clauses, causal clauses predominantly follow the main clause, are often realized as independent intonation units, and may exhibit structural properties such as the occurrence of a tag

question or topicalization that are characteristic of main clauses. In fact, in many languages causal relationships are expressed by coordinate constructions that are syntactically independent of the semantically associated clause. In particular, in left-branching languages with initial adverbial clauses coordinate sentences are commonly used to express a causal relationship. We have argued that the particular structural properties of causal clauses are motivated by their communicative function in speaker-hearer interactions. As Ford and others demonstrated, in conversational discourse causal clauses are commonly used to support a problematic statement. More precisely, causal clauses are often embedded in a discourse pattern that involves three verbal actions:

1. A statement or activity that the hearer may not accept or understand.
2. The hearer's reaction to this statement (optional).
3. The speaker's justification or explanation of the controversial statement.

This is an extremely frequent discourse pattern that appears to be so fundamental to everyday communication that one might expect it to be universal (cf. Ford and Mori 1994).

Interestingly, children seem to learn the use of causal clauses in the context of this pattern. As Diessel (2004: chap 7) showed in an extensive corpus study of five children, the earliest causal clauses that English-speaking children produce are prompted by a causal *why*-question, as in the following examples from a two-year old boy (examples from Diessel 2004: 161).

(32) CHILD: No you can't get a napkin.   [Peter 2;7]
     ADULT: Hmhm.
     CHILD: No!
     ADULT: Why?
     CHILD: **Cause** it's Mommy's, … Mommy's cleaning.

(33) CHILD: No, don't touch this camera.   [Peter 2;7]
     ADULT: Why?
     CHILD: **Cause** it's broken.

(34) CHILD: The microphone.   [Peter 2;7]
     CHILD: Don't touch it!
     ADULT: Why?
     CHILD: **Cause** it's … I wanna put this right there.

(35) CHILD: You can't have this!   [Peter 2;8]
     ADULT: Why?
     CHILD: **Cause** … I'm using it.

(36) CHILD: Over here right over here, … don't put it there.   [Peter 2;8]
     ADULT: Why not?

CHILD: **Cause** it's my horse.

The *because*-clauses in (32) to (36) are characteristic of children's early causal clauses (cf. Eisenberg 1980). In Diessel's data, an average of more than 80 percent of the first fifteen *because*-clauses produced by the five children he examined occur in response to a causal question. As the children grew older, they extended the use of *because* to other patterns in which the adverbial clause is more tightly bound to the preceding (main) clause. However, there is not a single *because*-clause in the entire database that precedes the main clause, supporting the hypothesis that the use of initial causal clauses is largely restricted to written genres. In writing, causal clauses are also commonly used to enhance discourse coherence; but in conversations, causal clauses are associated with a particular discourse pattern in which the causal clause functions as a separate speech act that is structurally independent of the associated (main) clause.

Appendix

Language sample

Language	Affiliation[3]	Word order	Position causal	Position temp/cond	Deranking causal	Deranking temp/cond
Africa						
Babungo	Bantoid	VO	final	mixed	balanced	balanced
Koyra Chinii	Songhay	VO	final	mixed	balanced	balanced
Krongo	Kadugli	VO	final	initial	balanced	mixed
Kwami	W. Chadic	VO	final	mixed	balanced	balanced
Noon	N. Atlantic	VO	final	mixed	balanced	balanced
Supyire	Gur	OV	final	mixed	balanced	mixed
Turkana	Nilotic	VO	mixed	mixed	balanced	mixed
Vai	W. Mande	OV	final	mixed	balanced	mixed
Wolyatta	Omotic	OV	initial	initial	balanced	mixed
Khoekhoe	Central Khoisan	OV	mixed	mixed	mixed	mixed
Australia/New Guinea						
Abun	N.-C. Bird's Head	VO	final	mixed	balanced	deranked
Amele	Madang	OV	initial	initial	deranked	deranked
Duungidjawu	Pama-Nyungan	OV	final	mixed	balanced	balanced
Kayardild	Tangkic	VO/OV	mixed	mixed	mixed	mixed
Lavukaleve	East Papuan	OV	initial	initial	deranked	deranked
Tiwi	Tiwian	VO	final	mixed	balanced	balanced
Ungarinjin	Wororan	OV	mixed	initial	balanced	balanced
Wambaya	West Barkly	VO	final	final	deranked	deranked
Wardaman	Yangmanic	VO/OV	mixed	mixed	mixed	mixed
Yimas	Lower Sepik	VO/OV	mixed	mixed	balanced	mixed

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[3] The affiliation indicates the level of the genus based on the classification in the World Atlas of Linguistic Structures (Haspelmath et al. 2005).

South East Asia/Oceania

Acehnese	Sundic	VO/OV	mixed	mixed	balanced	balanced
Fijian	Oceanic	VO	mixed	mixed	balanced	balanced
Marph. Thakali	Bodic	OV	initial	initial	deranked	deranked
Santali	Munda	OV	initial	initial	deranked	deranked
Semelai	Aslian	VO	final	initial	balanced	balanced
Tetun	Cent. Malay.-P.	VO	final	initial	deranked	deranked

Eurasia

Arabic	Semitic	VO	final	mixed	mixed	mixed
Basque	Isolate	OV	final	initial	balanced	mixed
English	Germanic	VO	final	mixed	balanced	mixed
Hungarian	Ugric	VO/OV	mixed	mixed	balanced	mixed
Georgian	Kartvelian	OV	mixed	mixed	balanced	mixed
Japanese	Isolate	OV	mixed	initial	balanced	mixed
Kannada	S.-Dravidian	OV	mixed	initial	mixed	deranked
Korean	Isolate	OV	initial	initial	deranked	deranked
Lezgian	Lezgic	OV	initial	initial	mixed	mixed
Mand. Chinese	Chinese	VO	final	mixed	balanced	balanced
Persian	Iranian	OV	mixed	mixed	balanced	balanced
Udihe	Tungusic	OV	initial	initial	deranked	deranked
Yukaghir	Isolate	OV	initial	initial	deranked	deranked

North America

Lakhota	Siouan	OV	final	initial	balanced	balanced
Lea. Chinantec	Chinantecan	VO	final	mixed	balanced	balanced
Maricopa	Yuman	OV	mixed	initial	deranked	deranked
Purépecha	Tarascan	VO	final	mixed	balanced	deranked

Slave	Athapsakan	OV	initial	initial	balanced	balanced
T. Shoshone	Numic	VO/VO	mixed	mixed	deranked	deranked
Tzutujil	Mayan	VO	final	mixed	balanced	balanced
W. Greenlandic	Eskimo-Aleut	OV	initial	initial	deranked	deranked
Yurok	Yurok	VO/OV	final	mixed	balanced	mixed

South America

Barasano	Tucanoan	OV	mixed	initial	deranked	deranked
Hixkaryana	Cariban	OV	final	mixed	deranked	deranked
H. Quechuan	Quechuan	OV	initial	initial	deranked	deranked
Ika	Aruak	OV	mixed	mixed	deranked	deranked
Kwazá	Isolate	VO/OV	initial	initial	deranked	deranked
Paumari	Arauan	VO/OV	mixed	mixed	deranked	deranked
Pirahã	Mura	OV	final	initial	balanced	balanced
Sanuma	Yanomam	OV	initial	initial	balanced	mixed
Trumai	Isolate	VO/OV	final	mixed	balanced	mixed
Warao	Isolate	OV	initial	initial	balanced	deranked
Wari'	Chap.-Wanhan	VO	final	mixed	mixed	mixed
Mapudungun	Araucanian	VO	final	initial	deranked	deranked

References

Altenberg, Bengt   1984   Causal linking in spoken and written English. *Studia Linguistica* 38: 20-69.

Bakker, Dik   to appear   Language Sampling. In Jae Jung Song (ed.), *Handbook of Linguistic Typology*. Oxford: Oxford University Press.

Biq, Yung-O   1995   Chinese causal sequencing and *yinwei* in conversation and press reportage. *Berkeley Linguistics Society* 21: 47-60.

Chafe, Wallace L.   1984   How people use adverbial clauses. *Berkeley Linguistics Society* 10: 437-449.

Carlson, Robert   1994   *A Grammar of Supyire*. Mouton: Berlin de Gruyter.

Couper-Kuhlen, Elizabeth   1996   Intonation and clause combining in discourse: The case of 'because'. *Pragmatics* 6: 389-426.

Couper-Kuhlen, Elizabeth and Bernd Kortmann (eds.)   2000   *Cause, Condition, Concession, Contrast. Cognitive and discourse perspectives.* Berlin: Mouton de Gruyter.

Cristofaro, Sonia   2003   *Subordination Strategies. A typological study*. Oxford: Oxford University Press.

Cristofaro, Sonia   2005   Reason clauses. In Bernard Comrie, Matthew Dryer, David Gil and Martin Haspelmath (eds.), *World Atlas of Language Structures*, 514-517. Oxford: Oxford University Press.

Diessel, Holger   1996   Processing factors of pre- and postposed adverbial clauses. *Berkeley Linguistics Society* 22: 71-82.

Diessel, Holger   2001   The ordering distribution of main and adverbial clauses: A typological study. *Language* 77: 343-365.

Diessel, Holger.   2004   *The Acquisition of Complex Sentences*. Cambridge: Cambridge University Press.

Diesser, Holger   2005   Competing motivations for the ordering of main and adverbial clauses. *Linguistics* 43: 449-470.

Diessel, Holger   2008   Iconicity of sequence. A corpus-based analysis of the positioning of temporal adverbial clauses in English. *Cognitive Linguistics* 19: 457-482.

Dryer, Matthew   1989   Large linguistic areas in language sampling. *Studies in Language* 13: 257-292.

Dryer, Matthew   1992   The Greenbergian word order correlations. *Language* 68: 81-138.

Eisenberg, Ann R.   1980   A syntactic, semantic, and pragmatic analysis of conjunction. *Stanford Papers and Reports on Child Language Development* 19: 129-138.

Ford, Cecilia E.   1993   Grammar in Interaction: Adverbial clauses in American English conversations. Cambridge: Cambridge University Press.

Ford, Cecila E.1994   Dialogic aspects of talk and writing: because on the interactive edited continuum. *Text* 14: 531-554.

Ford, Cecilia E. and Junko Mori   1994   Causal markers in Japanese and English conversations: A cross-linguistic study of interactional grammar. *Pragmatics* 4: 31-61.

George, Stefan   1995   Marphatan Thakali: Untersuchungen zur Sprache des Dorfes Marpha im Oberen Kali-Gandaki-Tal, Nepal. München: Lincom Europa.

Givón, Talmy 1990   *Syntax: A functional-typological introduction*, Vol. II. Amsterdam: John Benjamins.

Gohl, Christine and Susanne Günther   1999   Grammatikalisierung von *weil* als Diskurs-marker in der gesprochenen Sprache. *Zeitschrift für Sprachwissenschaft* 18: 39-75.

Green, Georgia M.   1976   Main clause phenomena in subordinate clauses. *Language* 52: 382-397.

Günther, Susanne   1996   From subordination to coordination? Verb-second position in German causal and concessive constructions. *Pragmatics* 6: 323-370.

Hara, Yurie   2008   Evidentiality of discourse items and *because*-clauses. *Journal of Semantics Advance Access*, Online publication, July 20th. 229-268.

Haspelmath, Martin 1995   The converb as a cross-linguistically valid category. In Martin Haspelmath and Ekkehard König (eds.), *Converbs in cross-linguistic perspective. Structure and meaning of adverbial verb forms—adverbial participles, gerunds*, 1-56. Berlin: Mouton de Gruyter.

Haspelmath, Martin, Matthew S. Dryer, David Gil, and Bernard Comrie (eds.) 2005   *The World Atlas of Language Structures*. Oxford: Oxford University Press.

Hawkins, John A.   1994   *A Performance Theory of Order and Constituency.* Cambridge: Cambridge University Press.

Hawkins, John A.   2004   *Efficiency and Complexity in Grammars*. Oxford: Oxford University Press.

Heath, Jeffrey 1999   A Grammar of Koyra Chiini: The Songhay of Timbuktu. Berlin: Mouton de Gruyter.

Hetterle, Katja   2007   Causal clauses in cross-linguistic perspective: A functional approach. Master's Thesis. University of Jena.

Janssen, Dirk P., Balthasar B.Bickel and Fernando Zúñiga   2006   Randomization tests in language typology. *Linguistic Typology* 10: 419-440.

Keller, Rudi   1993   Das epistemische WEIL. Bedeutungswandel einer Konjunktion. In Hans Jürgen Heringer and Gerald Stötzel (eds.), *Sprachgeschichte und Sprachkritik*, 219-247. Berlin /New York: de Gruyter.

Kuno, Susumo   1978   Japanese: A characteristic OV language. In Winfred Lehmann (ed.), *Syntactic Typology: Studies in the phenomenology of language*, 57-138. Austin: University of Texas Press.

Lakoff, George   1984   Performative subordinate clauses. *Berkeley Linguistics Society* 10: 472-480.

Matthiessen, Christian and Sandra A. Thompson   1988   The structure of discourse and 'subordination'. In John Haiman and Sandra A. Thompson (eds.), *Clause Combining in Grammar and Discourse*, 275-329. Amsterdam: John Benjamins.

Meyer, Paul Georg   2000   The relevance of causality. In Elizabeth Couper-Kuhlen and Bernd Kortmann (eds.), *Cause – Condition – Concession – Contrast. Cognitive and Discourse Perspectives*, 9-34. Berlin/ New York: de Gruyter.

Nedjalkov, Igor   1997   *Evenki*. London: Routledge.

Neukom, Lukas   2001   *Santali*. München: Lincom Europa.

Pasch, Renate 1997   WEIL mit Hauptsatz—Kuckucksei im DENN-Nest. *Deutsche Sprache* 3: 252-271.

Rijkhoff, Jan, Dik Bakker, Kees Hengeveld and Peter Kahrel   1993   A method of language sampling. *Studies in Language* 17: 169-203.

Rijkhoff, Jan, and Dik Bakker   1998   Language sampling. *Linguistic Typology* 2: 263-314.

Schleppegrell, Mary J.   1991   Paratactic 'because'. *Journal of Pragmatics* 16: 323-337.

Schwarze , Christoph 1995   *Grammatik der Italienischen Sprache*, 2nd ed. Tübingen: Max Niemeyer.

Sowa, John F. 2000   Knowledge Representation: Logical, Philosophical, and Computational Foundations. Brooks/Cole: Pacific Grove.

Sridhar, S.N.   1989   *Kannada*. London: Routledge.

Stassen, Leon 1985   *Comparison and Universal Grammar*. Oxford: Basil Blackwell.

Thompson, Sandra A. and Robert E. Longacre   1985   Adverbial clauses. In: Timothy Shopen (ed.), *Language Typology and Syntactic Description,* Vol. II, 171-234. Cambridge: Cambridge University Press.

Tsai, Mei-chih   1996   A discourse approach to causal sentences in Mandarin Chinese. *Proceedings of the 11th Pacific Asian Conference on Language, Information, and Computation (PACLIC 11).* Seoul Korea, 93-98.

Uhmann, Susanne   1998   Verbstellungsvariation in weil-Sätzen: lexikalische
         Differenzierung mit grammatischen Folger. *Zeitschrift für
         Sprachwissenschaft* 17: 92-139.

Wang, Fu-Fang   2006   The information structure of adverbial clauses in
         Chinese discourse. *Taiwan Journal of Linguistics* 4: 49-88.