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Abstract

The present study addresses questions concerning bilinguals' attainment in the two languages by investigating the extent to which early bilinguals manage to apply the information structure required in each language when producing a complex text. In re-narrating the content of a film, speakers have to break down the perceived series of dynamic situations and structure relevant information into units that are suited for linguistic expression. The analysis builds on typological studies of Germanic and Romance languages which investigate the role of grammaticized concepts in determining core features in information structure. It takes a global perspective in that it focuses on factors that determine information selection and information structure that hold in macrostructural terms for the text as a whole (factors driving information selection, the temporal frame used to locate events on the time line, and the means used in reference management). A first comparison focuses on Dutch and German monolingual native speakers and shows that despite overall typological similarities, there are subtle though systematic differences between the two languages in the aforementioned areas of information structure. The analyses of the bilinguals focus on their narratives in both languages, and compares the patterns found to those found in the monolingual narratives. Findings show that the method used provides insights into the individual bilingual's attainment in the two languages and identifies either balanced levels of attainment, patterns showing higher degrees of conformity with one of the languages, as well as bilingual-specific patterns of performance.

Keywords

bilingual-specific performance, early bilingualism, information structure, macrostructural planning

1 Introduction

Studies on the linguistic performance of advanced second language or bilingual speakers are faced with the task of finding proficiency measures that reflect a speaker's abilities on a representative

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scale. The measures adopted mainly address issues such as vocabulary size or formal errors, however, and thus relate to specific linguistic phenomena which are often taken out of context. The lack of contextuality and the diversity in assessing attainment often lead to difficulties in interpreting and comparing results, as well as replicating previous findings (see De Bot, 2008; Grosjean, 1998). Furthermore, there is a great deal of variation in the methods used: subjective tests (for example self-ratings of abilities to speak, read and write, as in Kohnert, Hernandez, & Bates, 1999), objective tests (performance on a given linguistic task), or external measures such as variables in language history (age of acquisition, contexts of use).

The present study presents a method whereby attainment is investigated on the basis of performance on a complex task involving text production. The texts produced by bilinguals in their two languages are compared with those of monolinguals and this comparison represents the basis of assessing attainment. The current study is based on findings that show that there are language-specific micro- as well as macro-planning (cf. Levelt, 1989) principles that drive information structure in texts. The type of information organization required when producing a text such as a narrative, for example, involves questions relating to information selection (deciding what to say), thematic continuity (e.g. topic assignment), referential framing, which relates to predicate-argument structures and how they are anchored in contexts in temporal and spatial terms. In order for a sequence of propositions to be coherent, their referential properties have to be related in consistent terms across utterances (von Stutterheim, 1997). This has been demonstrated in a series of cross-linguistic studies that address the following question: To what extent are decisions in information structure determined by grammatical features of the language in question? The cross-linguistic comparisons cover narrative and descriptive texts in languages that differ typologically Germanic, Romance, Semitic (e.g. Standard Arabic). Speakers were given the same visual input (a short silent film, for example) and were asked to *tell what happened*. Research within this framework has shown that the organization and embedding of linguistic form in context is driven grammatically in the domains studied, and poses problems for learners even at very advanced levels of adult second language acquisition (Carroll & Lambert, 2003, 2006; Carroll, Murcia Serra, Watorek, & Bendiscioli, 2000; Carroll, Rossdeutscher, Lambert, & von Stutterheim, 2008; Carroll & von Stutterheim, 2003; von Stutterheim & Lambert, 2005).

Further research in this context led to the question concerning the nature of the linguistic knowledge which drives decisions underlying information structure: Are issues in information structure solved for each sentence on an individual basis or are there principles that guide the speaker, on a default basis, at each relevant stage in the narrative that hold for the text as a whole? For example, is the decision to map an agent of an action as subject of a main or subordinate clause made individually at each point in the narrative, or are there planning principles that provide guidelines for the speaker at a macrostructural level, in the sense that they are found to apply on a global basis throughout the text, comparing speakers of English, German, and French (cf. Carroll et al., 2008). The findings show that principles underlying information structure that are grammatically driven hold for the whole text on a default basis.

The results are relevant for the investigation of both L2 users as well as early bilinguals, since the underlying linguistic knowledge is difficult to acquire and can thus provide insights not only into questions concerning ultimate attainment with L2 learners but also into questions relating to balance or differences in attainment in the two linguistic systems of bilinguals. The linguistic knowledge at issue plays a major role in the establishment of what can be termed 'large-scale coherence' (cf. Jackendoff, 2002) in texts. The difficulty in acquiring the preferred patterns of information structure can explain why certain L2 or bilingual texts, despite being error-free, do not sound native-like (von Stutterheim, 2003; from a UG-perspective Sorace, 1993; 2003).¹

The current article looks at how a sample of adult and adolescent (16-year-old) Dutch–German early bilinguals (selected on the basis of age of acquisition of both languages – both before the age of 4) go about constructing a narrative in both languages. The sample investigated represents an interesting case since the two languages involved are typologically close (both V2 languages). Since there are nevertheless subtle but consistent differences in information structure in Dutch and German, it is hypothesized that the languages’ typological closeness poses a challenge for learners. The question is: How do early bilinguals manage to acquire and keep apart principles underlying information structure in a narrative task in languages that differ in subtle terms? The focus of interest in the present analysis of Dutch and German concerns the following areas: information selection (deciding what to say) when asked to narrate the content of the silent film; organization of the temporal frame used to shift the story line and the means used in reference to person (reference introduction, reference maintenance and topic assignment), since these factors are closely linked in information structure, as will be shown later.

The systematic comparison of narrations in *both* languages of bilingual speakers with narrations of monolingual speakers of these languages allows us to assess questions relating to attainment in both languages. If, for example, a Dutch–German bilingual displays patterns in information structure in the German narratives that resemble patterns in monolingual German narratives, but the bilingual’s Dutch narrative shows differences from the monolingual Dutch pattern, then differences in performance of this kind between the two languages will be taken to reflect differences in attainment, with (in this example) a higher level in German.

Differences in attainment of this kind will (presumably) correlate with certain forms of ‘linguistic exposure’ and distinguish those that lead to a higher level of attainment compared to those that do not. However, high levels of attainment in the acquisition of the linguistic knowledge underlying information structure need not necessarily correlate with factors at the level of processing such as fluency (rate of delivery) or automaticity. If a bilingual speaker frequently uses one of the languages with other bilingual speakers, for example, and the language is in this sense not only the most fluent but also the most ‘active’, this may not necessarily lead to a high level of attainment when structuring information for expression – the focus of the present study. The notion of ‘accuracy’ is also frequently cited in assessing language dominance² but this is generally a measure of performance with respect to grammatical or lexical knowledge. As will be shown in the present study, it does not easily fit the complex patterns of information organization that underlie the formal structure on which a text such as a narrative, for example, is based. Not many forms, or sentences, are inaccurate or inappropriate at a grammatical or lexical level in the data of the present bilingual speakers. But the set of underlying principles by which information is organized as a coherent whole in language production may differ from those of monolingual speakers.

Possible differences or balance in the bilinguals’ attainment in the two languages is measured in the present study by looking at how information is structured in producing a narrative, with its complex organization, compared to the typical monolingual patterns in information structure in both languages. This analysis will be carried out by comparing the narratives in the two languages not only as a group but also within subjects. The first stage of analysis (in section 3.3.1) concentrates on a comparison of the relevant features in information selection and information structure in narratives of monolingual speakers of Dutch and German.

The present article sets out to show how the investigation of speakers’ performance in acquiring the principles that guide use of the linguistic means available provides a new and insightful tool in assessing attainment levels, especially in more advanced learner/bilingual populations dealing with challenging language pairs.

2 Language-specificity in the information structure of narratives

As mentioned earlier, previous work within the present framework on narratives produced by native speakers of Dutch, German, French and English relate to the role of grammaticized means for information structure, focusing on a core feature of a narrative task: the means used to locate events in succession on the time line in order to advance the story line. The studies take into account the role of (i) differences in word order constraints given with verb second (V2) languages (Dutch, German) versus SVO languages (English, French); (ii) contrasts in the temporal domain given with languages that mark aspectual distinctions grammatically (progressive *be + V-ing* in English; perfective aspect in Standard Arabic), compared to those that do not. Aspectual distinctions are marked by lexical means in German, for example, and will not have an obligatory status in certain contexts of use, compared to contexts in which speakers of English will be required to use progressive aspect.

In the temporal frame established for the film retellings in English (and Standard Arabic), events are linked to an external anchor, which is deictic ('now you see' or 'then you see'). All types of situations can be connected to this external temporal anchor, both directly or indirectly, and ongoing events (expressed by the progressive *-ing* for example) may form an integral part of the event sequence (*he is walking around and sees a huge rock heading straight for him*). We assume that temporal frames of this kind are not random but facilitate the integration of ongoing events into the story line in languages that mark aspectual distinctions (such as the progressive) on a grammatical basis (cf. Carroll & Lambert, 2006).

The temporal frame found in Dutch and German (V2 languages) in shifting the story line can be linked to a different grammatical feature, that is, word order and the V2 constraint. Since the finite verb must be placed in second position in main clauses (second main constituent), a preverbal slot is created in which only one constituent can occur. This can be the syntactic subject, but in narratives the linguistic means that encode temporal relations are also prime candidates for mention in this position (temporal adverb such as '*dann*' 'then'). The consequences of this factor for the temporal frame also affect information selection, as shown in the analyses. The temporal frame is based on the principles of temporal shift ('*and then*') in which the temporal anchor is given internally by the point of completion of the last event mentioned. The analyses show that focus is placed when deciding what to say on the selection of entities and associated events that reach a point of completion and can thus accommodate the relation of temporal shift ('*and then*'). This temporal relation is satisfied by events with a right boundary or endpoint and the selection of entities for mention that are involved in events of this kind (see in detail Carroll et al., 2008). In the film used for the cross-linguistic comparison, this leads to a preference to mention events carried out by the animate protagonist, who is responsible for bringing about events that have an endpoint in the stimulus film (see section 3.2), rather than inanimate entities such as environmental forces (gusts of wind knocking things about; pieces of paper flying around; rocks falling; water dripping, and so on). This is in contrast with speakers of English, for example, who relate to both to a similar extent. The extension of the comparison to other languages (Spanish, Arabic) shows that the presence of grammaticized means to present events as in progression leads to a tendency to include events of different kinds, since the temporal frames used in shifting the story line are not organized around events with a point of completion to the same degree. This is reflected in the status or level of attention accorded to entities (protagonist, inanimate agents) in reference introduction and reference maintenance.

One feature that is important for the present study of bilinguals concerns the status accorded to the main protagonist in German and Dutch. In German, reference to the protagonist as the subject

in main clauses is frequently ellipted and expressed by means of zero anaphora. This phenomenon will be labeled topic deletion. Reference in individual clauses can be omitted and remain implicit (when in preverbal position). In monolingual German narratives, topic deletion is high and occurs in 54.2 per cent of all main clauses when the protagonist is maintained as syntactic subject (Carroll & Lambert, 2006). This is not the pattern found in Dutch, as will be shown in detail later.

2.1 Insights from monolingual L1 acquisition

Halm (2010) provides a useful illustration of the constraints that occur in information structure given the presence of a specific relation in one domain (e.g. temporal shift) and its consequences for the means used in another domain, in this case reference management – as when marking informational status of an entity such as the main protagonist as ‘topic’. A study investigating the acquisition of the aforementioned language-specific principle of topic assignment and management in monolingual German shows that children do not acquire the adult-like pattern of topic deletion until the age of 13/14 years (see Halm, 2010). This is because of the predominance of the core re-narration strategy, which is centered around the notion of temporal shift (Halm, 2010), and the fact that this relation is explicitly marked for the majority of events located on the time line. Children tend to fill the pre-verbal slot exclusively with the temporal shifter ‘(und) dann’ (‘and then’), creating a situation in which it is impossible to delete reference to the protagonist (the topic), since it then has to be mentioned explicitly in a post-verbal position, given word order constraints in German (see example (1) 034–036 below, taken from Halm, 2010).

Example (1)

- (1) Monolingual German – 12-year-old
- 032a *aber in dem Moment*
‘but in that moment’
- 033 *wo er die Hände hochhebt*
‘where he the hands lifts’
- 032b *kommen/fallen keine Tropfen mehr vom Himmel*
‘come/fall no more drops from the sky’
- 034 **und dann** *betastet er die Lache*
‘and then touches he the puddle’
- 035 **und dann** *reißt das Papier auf*
‘and then tears the paper’
- 036 **und dann** *fällt er runter*
‘and then falls he down’

The acquisition task for the children lies in finding the appropriate weighting between the importance of making explicit reference to the temporal relation of shift, and a factor in information structure such as ‘topic’ status (Halm, 2010, p. 174). Adult (monolingual) German speakers solve this question by reducing the contexts in which the temporal shifter ‘dann’ (in the Vorfeld – the slot preceding the finite verb) is used explicitly to mark the beginning of a ‘new’ chain of events that are closely connected. In subsequent utterances, this temporal relation is maintained implicitly and the Vorfeld-slot can be ‘filled’ by the subject/topic role (protagonist), thus creating the conditions that allow ellipsis/topic deletion (see example 2).

Example (2)

(2) Monolingual German adult

- 001 *die Figur wacht auf*
‘the figure wakes up’
- 002 *nachdem sie eben da runtergefallen ist*
‘after she just there fallen down has’
- 003 *ø schaut sich um*
‘looks around’
- 004 *und ø erkundet erstmal die Gegend*
‘and explores at first the surroundings’
- 005 *dann sieht sie sich plötzlich auf einem großen Steinhaufen wieder*
‘then sees he himself all of sudden on a great pile of rocks again’
- 006 *und ø kann dann eigentlich nicht mehr runter*
‘and can then actually no longer down’
- 007 *ohne sich was anzutun*
‘without to himself something to do’
- 008 *ohne sich zu verletzen*
‘without himself to hurt’

Halm (2010) found that children up to the age of 13 still have problems in figuring out that temporal shift is a *global* principle to advance the story line that can be left implicit and need not be repeatedly marked, thus vacating the Vorfeld-slot and allowing access for other constituents (syntactic subject, for example). The younger children investigated (7/8-year-olds–11/12-year-olds) show a strategy where ‘dann’ is placed in the Vorfeld and the full subject occurs in the Mittelfeld (middle field). Although the frequency of topic deletion in the 13/14-year-old narratives is still somewhat lower than the adult pattern (24.6%), the protagonist can be clearly identified as a global topic. The data illustrate the course of development in acquiring formal means which allow the speaker to assign a special status to a given entity in the narrative – that of ‘topic’ (which is also observed at relatively late ages in L1 acquisition in Berman & Slobin, 1994).

Although speakers of Dutch and German set up similar temporal frames, in other words, temporal shift defined over the right boundary given with the preceding event, and are therefore more likely to select entities and events that accommodate this relation when deciding what to say (when compared to speakers of English, for example), the analysis shows that they avail themselves of different options in according informational status to the entities mentioned in the story and with this the means used in reference management (reference introduction and reference maintenance).

The next section looks at the extent to which the observed differences between the two monolingual narratives in Dutch and German can serve as a test case for attainment in the bilingual narratives.

2.2 Early bilinguals and the question of attainment

A difference in attainment in the two languages of a bilingual speaker is reflected in a higher command of (target) language-specific structuring principles for texts in one language rather than the other. Simultaneous or early bilinguals represent an especially interesting case since differences may be subtle: they have the best chance of achieving a high level of attainment in both languages, given an early age of acquisition, along with a large amount of exposure and use in both cases (on the influence of age effects on ultimate attainment see Bylund, 2008). The investigation of how

early bilinguals establish narrative coherence, and how they deal with language-specific patterns in information structure in complex tasks, may reveal how far their narratives resemble monolingual native speakers of both languages (and whether this is possible at all), or how far there is evidence for unique bilingual-specific linguistic patterns (in line with Grosjean's views of the bilingual speaker [1985; 1998]). This last hypothesis ties in with several current findings on bilingual performance in specific (non-) linguistic domains (see e.g. for the categorization of objects Ameel, Storm, Malt, & Sloman, 2005; for the categorization of colours Athanasopoulos, Damjanovic, Krajciova, & Sasaki, in press). As mentioned earlier, it is assumed that bilingual-specific performance patterns as such are not erroneous, but rather represent a specific, highly-proficient and systematic pattern of performance.

3 Present study

3.1 Participants

The monolingual³ native Dutch speakers (N = 19) are students at the Radboud University in Nijmegen⁴ and the monolingual German data were collected at the University of Heidelberg (N = 19, all students). The German data are part of a large cross-linguistic corpus of film retellings at the University of Heidelberg.

The bilingual participants all started to acquire both languages in their first 4 years. Most of them were brought up on the one-parent one-language principle, using both languages on a daily basis, and are enrolled in a bilingual Dutch–German secondary education program. There are 10 early-bilingual speakers who re-narrated the film in German, and 10 who carried out the same task in Dutch. Seven out of the 10 speakers re-narrated the same film twice, once in each language (with a time span of 4 months in between to reduce memory effects). The within-subject analyses thus only deal with these 7 speakers.

For the purpose of gaining insights into the time course of the acquisition of macrostructural planning principles underlying information structure in narrative texts, the larger part of the sample is adolescent (16-year-olds, N = 10) and 3 participants in the sample are adult (18, 19 and 46 years old). In the Appendix Tables 1, 2, and 3, there is an overview of all subjects' responses in a language-background questionnaire.

3.2 Procedure and methods of analysis

Participants were asked to retell a silent film named 'Quest' which features only one protagonist, a clay figure, on a quest for water. While searching, the clay figure ends up in five different 'worlds' in which he has to deal with threatening elements such as sand, winds, rocks and machines. The monolingual German data were collected with a 9-minute version of the film. The Dutch and all the bilingual data were collected with a shortened version of this film (7 minutes). In the shortened version, a specific scene was cut out.⁵ This led to a higher number of clauses in the monolingual German data. No relevant differences were observed, however, in patterns in information structure despite the differences in length of the narratives. As outlined earlier, the phenomena under investigation concern planning principles in information structure that concern the narrative as a whole and not individual clauses, so no effects for the difference in stimulus length (and consequently narrative length) are to be expected.

Each participant first saw the film as a whole after which the film was restarted and stopped in between episodes (world of sand, world of paper, world of rocks). Participants were then asked to

describe ‘what happened’ in the scene they just saw (in Dutch: ‘*Wat gebeurde er?*’ in German: ‘*Was ist passiert?*’), rather than the entire film, in order to reduce memory load and ensure a higher level of comparability for the analyses. The re-narrations were audio-recorded with a microphone. The narratives were then transcribed and the data segmented into clauses on a propositional basis according to the finite verb and its arguments. Finite clauses also represent the units of analysis. All participants were paid for participation.

Concerning the assessment of attainment of the bilinguals, the comparison looks, first of all, at the patterns found in the bilingual narratives and possible contrasts with the monolingual narratives (monolingual German vs. bilingual German and monolingual Dutch vs. bilingual Dutch). Secondly, in order to address the question of individual subjects’ attainment in both languages, a within-sample analysis was carried out of the bilingual’s narrative in German and the same person’s narrative in Dutch, focusing on the areas already mentioned. The aim is to identify whether bilingual participants adhered to different strategies in the narratives in the different languages (and consequently, whether these patterns are target language-specific) or whether they opted for one common (non language-specific) strategy. Specifically, the analyses of reference management focus on the entities encoded as the syntactic subject of a clause: the candidates are the protagonist – the clay figure – and inanimate forces with which he is confronted (huge rocks shooting up out of the ground, sheets of paper, high winds). The first question deals with the extent to which these forces are selected for mention when deciding what to say (information selection) and thereby mapped as subject of a clause. The second relates to their status in information structure and whether they are eligible for mention as subject of a main versus subject of a subordinate clause. Finally, patterns of reference management deal with the means used when referents are mentioned for the first time, and how reference maintenance is marked when the referent is maintained as subject across (adjacent) main clauses (ellipsis, pronoun, full noun phrase). For instance, how many times are references to the protagonist elliptical, or marked by a pronoun when maintained (‘*he gets up and [...] goes over to the side of the pit*’, versus ‘*he gets up and he goes over to the side of the pit*’). Differences of this kind are relevant for the analysis in so far as they reflect differences in the status accorded to entities in information structure for the text as a whole.

3.3 Results

3.3.1 Monolingual native speakers: information selection. Dutch and German follow different principles in the preferred pattern in information structure in two specific areas: the management of entities in reference introduction and reference maintenance, and the frequency with which inanimate agents are mapped as the syntactic subject of a clause. As discussed earlier, in German narratives the protagonist is assigned a prominent status, as measured by the frequency of occurrence of ellipsis (topic deletion) in reference maintenance, as well as the extent to which mention of other agents as subjects also occurs (inanimate forces).

Although there is no overall difference in the rate at which inanimate forces are selected for mention in Dutch and German (Table 1), there is a significant difference in the status accorded to these entities (Table 2).

In both groups, the percentage shown in Table 1 is relatively low, which means that speakers are less likely to select inanimate forces for mention in the role of subject of a clause. If we look at subordinate clauses specifically (see Table 2), the Dutch texts show more inanimate forces as syntactic subjects than the German texts (two-tailed z-test for comparing proportions within two independent samples:⁶ $z = 4.475$, $p < .05$). Overall, the number of subordinate clauses produced is similar: L1 German 13.30 per cent, L1 Dutch 13.70 per cent of all clauses.

Table 1. Occurrence of inanimate forces as syntactic subject in main and subordinate clauses (% of all clauses)

Monolingual German (Carroll & Lambert, 2003)	Monolingual Dutch
349/2740 12.74%	169/1073 15.75%

Table 2. Occurrence of inanimate forces as syntactic subject in subordinate clauses (% of all subordinate clauses)

Monolingual German (Carroll & Lambert, 2003)	Monolingual Dutch
45/366 12.29%	43/147 25.60%

Inanimate entities are selected for mention as subject of a clause to a similar extent in both languages (Table 1), but in Dutch, entities are more likely to be accorded the status ‘subject of a subordinate clause’, as the numbers in Table 2 reveal. This can be attributed to the fact that the events in which these forces are involved are more likely to be mentioned within the main structure of the narrative, that is, within the section in which events are located on the time line. This is illustrated in examples (3), (4) and (5).

Examples (3), (4) and (5)

- (3) 001 *uiteindelijk komt hij weer bij zijn plasje water*
‘eventually comes he again at his puddle of water’
002 *maar dan komen er machines in de buurt*
‘but then come there machines in the area’
003 *die hem verpletteren*
‘that him squash’
- (4) 001 *hij loopt een stukje*
‘he walks a bit’
002 *en schrikt telkens van stenen*
‘and gets scared repeatedly by rocks’
003 *die vallen*
‘that fall’
004 *of omhoog schieten*
‘or shoot up’
- (5) 001 *het mannetje belandt op zijn kop op een plaats*
‘the little man lands on his head on a place’
002 *waar de bodem van metalen platen is*
‘where the bottom of metal slabs is’
003 *en waar machines bezig zijn de grond van metalen platen te voorzien*
‘and where machine busy are the ground of metal slabs to provide’

Their status is downgraded to a higher degree in German since events of this kind that occur as part of the time line are more likely to be presented in the form of a passive, as shown in example (6).

Example (6)

- (6) 001 *das Sandmännchen landet in einem Blättermeer*
 ‘the sandman lands in a lake of sheets’
 002 *es wird von einem großen Blatt umgeschmissen*
 ‘it is by a big sheet pushed over’
 003 *ø steht wieder auf*
 ‘gets again up’
 004 *ø entdeckt zufällig eine Wasserpfütze*
 ‘discovers accidentally a pool of water’
 005 *ø versucht das Wasser zu greifen*
 ‘tries the water to grab’
 006 *und ø stürzt dabei ab*
 ‘and falls there-at down’

This ensures maintenance of the status assigned to the protagonist as the main candidate for ‘subject of the clause’, within events that form part of the time line, and is thus a candidate for topic deletion (ellipsis). This latter context, the status accorded to entities in events that form part of the narrative sequence, constitutes the main difference in information structure between the Dutch and German film retellings. In events in which the protagonist and another entity are in competition for mention as subject of the clause, the inanimate entity is downgraded within the narrative sequence in both languages, but the status accorded to the protagonist is higher in German than in Dutch, since inanimate agents are encoded as a passive (*‘he is hit by a sheet of paper’*), rather than subject of a subordinate clause, as in Dutch. This feature in information structure is also reflected in the means used in both reference introduction as well as reference maintenance in both languages, as will be shown in the following section.

3.3.2 Monolingual native speakers: reference introduction and maintenance. In Dutch, inanimate entities are usually introduced in main clauses with the empty subject ‘*er*’ (see example 7/005) in the Vorfeld, thus ensuring that mention of the ‘new’ entity is in post-verbal position.

Example (7)

- (7) 001 *dit keer komt het mannetje in een rotsenwereld terecht*
 ‘this time lands the little man in a rock world’
 002 *er vallen rotsen naar beneden*
 ‘there fall rocks down’
 003 *en er rijzen rotsblokken uit de grond op*
 ‘and there rise rocks out off the ground’
 004 *de zoektocht naar water gaat verder*
 ‘the quest for water continues’
 005 *er valt bijna een steen op hem*
 ‘there falls almost a rock on him’
 006 *maar het mannetje kan nog net op tijd wegspringen*
 ‘but the little man can just in time jump away’

In German, inanimate entities are more likely to be introduced in contexts in which the protagonist is the subject of the clause (*Er fällt in eine neue Welt mit viel Papier* ‘he falls in a new world with

Table 3. Introduction of sheet of paper flying in protagonist's face (N = 19 both groups)

	Monolingual German	Monolingual Dutch
Protagonist centered:		
(a) inanimates as arguments	(a) 4	(a) 3
(b) inanimates in passives with protagonist as subject	(b) 6	(b) 2
Entity centered:		
(a) inanimates as subject	(a) 1	(a) 4
(b) empty subjects 'es/er'	(b) 0	(b) 5
No mention of entity	8	5

Table 4. Ellipsis in main clauses with the protagonist as subject

Monolingual German (Carroll & Lambert, 2006)	Monolingual Dutch
979/1806	152/650
54.21%	23.38%

a lot of paper'; *Er fällt eigentlich in eine neue Wüste/in eine Art Papierwüste* 'he falls actually in a new desert/a type of paper desert'). It is assumed that more prominence is accorded in information structure to entities, such as the sheet of paper, when they alone form the content of a clause, as in the examples with the empty subject: *He falls in a new world; there is paper everywhere* (see in detail Carroll, 2008; Carroll & Lambert, 2003).

The preferred means in reference introduction are linked to the way in which referents are reintroduced within the time line, the focus of the present comparison. Table 3 compares reference management in the 'paper world', when an inanimate force occurs in an agentive role and is thus in competition with the protagonist as a possible subject of the clause: *a sheet of paper flies in the clay man's face* (the inanimate force is the subject) or maintenance of the protagonist as subject in a passive *he is hit by a sheet of paper* (protagonist centered reintroduction). As Table 3 shows, the results for German show a clear preference for means that accord prominence in information structure to the protagonist (10/11), while both means occur with almost equal likelihood in the Dutch narratives (5/14 protagonist centered; 9/14 entity centered).

The German speakers tend to mention the inanimate force in clauses that accord prominence to the protagonist: for example, *Er kriegt ein Blatt Papier ins Gesicht* 'He gets a sheet of paper in the face' or a passive, for example, *Er wird von einem Blatt Papier umgeschmissen* 'He is knocked over by a sheet of paper'. As the numbers show, the Dutch speakers are also likely to use an empty subject (*There flies a sheet of paper in his face*), in contrast to German speakers.

Moreover, the difference in the status given to the protagonist is also reflected in the extent to which ellipsis is found in reference maintenance to the protagonist as subject in adjacent main clauses. Table 4 compares the numbers for the occurrence in main clauses with the protagonist as subject.

German speakers use ellipsis in references to the protagonist as subject in main clauses in contrast to Dutch speakers (two-tailed z-test: $z = 13.447$, $p < .05$). As described in detail in Carroll and Lambert (2003, 2006) and von Stutterheim and Lambert (2005), this is a reflection of the status accorded to the protagonist in German, since speakers create the conditions in which ellipsis is warranted (see example [8]). It is important to note that use of pronouns would be non-native-like in example (8).

Example (8)

- (8) 001 *und dieses Lebewesen fällt vom Himmel runter*
 ‘and this creature falls from heaven down’
 002 *und ø platscht auf dem Boden*
 ‘and ø splashes on the ground’
 003 *und ø rappelt sich hoch*
 ‘and ø crawls up’
 004 *und ø steht dann langsam auf diesen Blättern*
 ‘and ø stands then slowly on these sheets’
 005 *und ø fängt dann an zu laufen*
 ‘and ø starts then to walk’

In Dutch mere maintenance of the same entity as subject across adjacent clauses does not warrant use of ellipsis. Ellipsis is considered appropriate when there is a causal or intentional link between the two clauses (see Dutch examples [9], [10]). Furthermore, there are only two Dutch subjects (out of 19) who produced more than three consecutive clauses with ellipsis, whereas this is the default case in German.

Examples (9) and (10)

- (9) 001 *het mannetje schrikt van de apparaten*
 ‘the little man gets scared by the machines’
 002 *en ø rent weg*
 ‘and ø runs away’
 003 *opeens struikelt hij*
 ‘all of a sudden trips he’
 004 *en valt ø op een rooster*
 ‘and falls ø on a raster’
- (10) 001 *maar dan hoort hij weer dat gedruppel ergens*
 ‘but then hears he again that dripping somewhere’
 002 *ø klimt heel moeilijk naar beneden*
 ‘climbs very hard down’
 003 *en ø valt*
 ‘and falls’
 004 *en dan gaat hij naar de natte plek*
 ‘and then goes he to the wet spot’

The following example shows that even in cases where the syntactic structure of clauses are identical, thus allowing ellipsis, and a semantic link between the clauses exists, it is not untypical to maintain reference to the subject in more explicit terms by means of a pronoun (see example [11]).

Example (11)

- (11) 001 *hij zit op een bouwplaats met machines om zich heen*
 ‘he sits on a construction site with machines around him’
 002 *hij raakt ervan in paniek*
 ‘he gets into a state of panic’

Table 5. Occurrence of inanimate forces as syntactic subject in clauses (% of all clauses)

Monolingual German (N = 19)	Bilingual German (N = 10)	Monolingual Dutch (N = 19)	Bilingual Dutch (N = 10)
349/2740 12.74%	41/486 8.44%	169/1073 15.75%	45/597 7.54%

- 003 *en **hij** rent weg*
‘and he runs away’
- 004 *daarbij valt **hij***
‘there-by falls he’
- 005 *waarbij **hij** op een rooster terecht komt*
‘where-by he on a raster lands’

As the comparisons show, these patterns are not random but are established in information structure for the text as a whole. In this sense one can speak of planning principles that have what can be termed a macrostructural status when organizing information for expression in text production. This means that speakers can rely on principles that need not be negotiated for each individual context, but can be implemented, on a default basis, for the text as a whole (see in detail Carroll et al., 2008).

3.3.3 The bilingual speakers. The challenge for the bilingual speaker of Dutch and German would seem enormous: despite the similarities between the two languages, bilingual speakers have to learn how to handle two subtly different sets of macrostructural planning principles that determine reference management in narrative texts. The acquisition of language-specific knowledge of this kind is presumably quite difficult. As mentioned earlier, they present a suitable test case for measuring attainment in Dutch–German bilinguals.

All subjects are very proficient in both languages and produce coherent and readable texts. It should be mentioned that they make a small number of formal errors (for example gender errors in either Dutch or German, errors with prepositions, spatial expressions, case errors in German).⁷

This first stage of analysis relates to the analysis of the bilingual texts as a group. Starting with the status accorded to inanimate agents, in contrast to the protagonist, we see that the bilinguals, re-narrating in both languages, do not typically mention inanimate forces as subjects of a clause (Table 5). These are events that belong to the main structure of the narrative and form part of the narrative sequence.

When comparing the bilingual proportions to those of the two monolingual groups, the bilingual German narratives show fewer occurrences of inanimate entities as subjects in clauses compared to the L1 German narratives (two-tailed z-test: $z = 2.604$, $p < .05$). The same applies for the bilingual Dutch narratives ($z = 4.734$, $p < .05$). This means that events that are located on the time line are more protagonist centered, compared to the monolingual speakers.

Let us now take a closer look at the way reference to inanimate entities is managed in one particular scene. In the rock world, a pile of rocks suddenly shoots up out of the ground and pushes the protagonist up, so that he unexpectedly finds himself high up in the air. As shown above, the monolingual Dutch speakers make use of both options in mentioning inanimate forces that act in a dynamic role (e.g. the sheet of paper, see Table 3). The means may be protagonist centered (e.g. passive) or entity centered, where the entity (in the role of agent) forms the subject of a clause, or the clause has the empty subject ‘*er*’. German speakers, on the other hand, show a clear preference for protagonist-centered means (passive forms as in ‘*er wird erhoben von diesem Steinhaufer*’ (‘he is lifted up by this pile of rocks’), or they only refer to the pile of rocks as an adjunct in a

Table 6. Introduction of rocks shooting out of the ground and lifting the protagonist (N = 10, both groups)

	Bilingual Dutch	Bilingual German
Protagonist centered introduction:		
(a) inanimates as arguments	(a) 4	(a) 4
(b) inanimates in passives	(b) 0	(b) 1
Entity centered introduction:		
(a) inanimates as subject	(a) 4	(a) 3
(b) empty subjects 'es/er'	(b) 2	(b) 1
No mention	0	1

Table 7. Ellipsis in main clauses with the protagonist as subject

Monolingual German (N = 19)	Bilingual German (N = 10)	Monolingual Dutch (N = 19)	Bilingual Dutch (N = 10)
979/1806	101/313	152/650	38/353
54.21%	32.27%	23.38%	10.76%

protagonist-centered clause as in '*und plötzlich steht er auf einem Steinhaufen*' ('and suddenly stands he on a pile of stones').

Here again, the means used by bilinguals do not clearly reflect the pattern found in the monolingual narratives since they make use of all options available in *both* languages (see Table 6).

Taken as a group, the bilinguals have opted for the variety of alternatives that is acceptable in narratives in both languages, which is not the preferred procedure for monolingual speakers of the languages. The variety of options used indicates that the bilinguals may be aware of all the means available, but not of the fact that German monolinguals do have a preference for one specific set. Of course, in any assessment of this kind one has to take into account that the sample is small and should be backed up by in depth analyses of principles underlying information structure found for the individual speaker (see section 4.1).

The next step in the analysis looks at the means used in reference maintenance. Table 7 shows the extent to which reference to the protagonist is carried out by means of ellipsis across adjacent clauses when the protagonist is maintained as subject of a main clause.

First of all, we see that in both languages the bilinguals are less likely to use ellipsis in reference maintenance to the protagonist, compared to the respective monolingual speaker groups. When comparing the occurrences in main clauses in the monolingual German narratives to the number of occurrences in the bilingual German narratives, the monolingual German number significantly exceeds that of the bilingual German group (two-tailed z-test: $z = 7.107$, $p < .05$). The same holds for the Dutch narratives: The Dutch monolingual native speakers use ellipsis more frequently than the bilinguals when re-narrating in Dutch ($z = 4.787$, $p < .05$), showing again a bilingual-specific pattern in both languages.

Taking a closer look at the organization of the temporal frame used in shifting the time line, it is striking that the narrators rely heavily on the explicit expression of the temporal relation of shift in both Dutch and German ('and then'). The explicit use of the temporal shifter is a significant factor in information structure since it reduces the options possible in reference maintenance, as discussed earlier. In the bilingual German narratives, the bilinguals' frequency of use of '*und dann*', compared to the monolinguals, is the major contributing factor for differences in reference

maintenance: Many utterances start with the phrase ‘*und dann*’ (‘and then’ – occurrence of ‘[*und*]*dann*’ in the paper world: 34.83% of all clauses) and the continued presence of the temporal shifter makes it impossible to use ellipsis with a reference to the protagonist as the subject. It forces the speaker to place the syntactic subject in the Mittelfeld, and thereby use a pronoun, since ellipsis is not warranted, despite maintenance of the referent, in this position (see examples 12–14).

Examples (12), (13) and (14)

(12) Subject: Vp00

- 001 ***und dann*** *steht er auf*
 ‘and then stands he up’
 002 ***und dann*** *hört er einen Tropfen*
 ‘and then hears he a drop’
 003 ***und dann*** *fängt er an so im Sand ein bisschen zu graben*
 ‘and then starts he in the sand a bit to dig’
 004 *und zu suchen danach*
 ‘and to search for-that’
 005 *woher das kommt*
 ‘where-from that comes’
 006 *und er landet dann eigentlich in einer Sand / einer Treibsandgrube*
 ‘and he lands then actually in a quicksand cavern’

(13) Subject: Vp10

- 001 ***und dann*** *hört er wieder ein Tröpfeln*
 ‘and then hears he again a drop’
 002 ***und dann*** *denkt er*
 ‘and then thinks he’
 003 *dass es von oben kommt*
 ‘that it from above comes’
 004 *aber dann sieht er eine Pfütze*
 ‘but then sees he a puddle’
 005 ***und dann*** *fängt er an zu graben*
 ‘and then starts he to dig’
 006 ***und dann*** *fällt er wieder runter*
 ‘and then falls he again down’

(14) Subject: Vp12

- 001 *jetzt kommt er in ein Land (*) von (aus) Stein*
 ‘now comes he in a land of rocks’
 002 ***und dann*** *hört er wieder die Tropfen*
 ‘and then hears he again the drops’
 003 ***dann*** *kommt er auf einen Stein*
 ‘then comes he on a rock’
 004 ***und dann*** *sieht er das Wasser*
 ‘and then sees he the water’
 005 [*dann geht er mit einem anderen Stein*] / ***dann*** *schlägt er in den Stein*
 ‘then hits he in the rock’
 006 ***und dann*** *fällt er rein*
 ‘and then falls he in it’

Re-narrations of this type show the extent to which temporal shift is made explicit in information structure, rather than implicit, as in the monolingual texts. The implicit maintenance of the temporal shifter (*dann* ‘then’) in monolingual (adult) German narratives creates the conditions that allow ellipsis. Speakers can convey its status as ‘topic’ in explicit terms. This is possible since explicit occurrence of ‘(und) *dann*’ in re-narrations of the paper world scene amounts to no more than 11.72 per cent of all clauses in the monolingual German texts.

Use of ellipsis is more constrained in monolingual Dutch on a systematic basis, compared to German, despite the fact that occurrence of explicit temporal shifters is also relatively infrequent – occurrence of ‘(en) *dan*’ in re-narrations of the paper world: 10.15 per cent of all clauses. Monolingual speakers of Dutch could, in theory, mark maintenance of the protagonist via ellipsis, but this option does not fit with the status assigned to other potential referents that occur in the texts within the time line: they are not downgraded to the same extent as in German with events located on the time line but are more likely to be mapped as ‘subject of a subordinate clause’.

In the bilingual Dutch narratives, the bilingual-specific preference in explicitly marking the relation of temporal shift has further consequences, since it means that fewer causal relations are expressed by the bilinguals, compared to monolinguals (occurrence of ‘[en] *dan*’ in the paper world: 24.79% of all clauses. See examples 15 and 16). In monolingual Dutch texts, events that are tightly linked in causal terms provide the condition for use of ellipsis, in contrast to German.

Examples (15) and (16)

(15) Subject: Vp10

- 001 *hij komt in een wereld van papier terecht*
‘he lands in a world of paper’
- 002 *hij hoort het druppelen weer*
‘he hears the dripping again’
- 003 **en dan** *ziet hij opeens een plasje water*
‘and then sees he all of a sudden a puddle of water’
- 004 **en dan** *begint hij weer te graven*
‘and then begins he again to dig’
- 005 **en dan** *wordt hij weer meegesleurd*
‘and then is he again pulled down’

(16) Subject: Vp20

- 001 *je zag weer een poppetje in een stenen landschap*
‘you saw again a puppet in a stone landscape’
- 002 *en hij staat dan op*
‘and he gets then up’
- 003 *en ø begint een beetje te lopen*
‘and ø begins a bit to walk’
- 004 **en dan** *komt hij ineens op een torentje van stenen terecht*
‘and then comes he suddenly on a pile of rocks’
- 005 **en dan** *ziet hij weer een plekje met water*
‘and then sees he again a place with water’
- 006 **en dan** *probeert hij van die stenen toren (*) van af te komen*
‘and then tries he of the rock tower to come’

- 007 *probeert eraf te klimmen*
 ‘tries there-off to climb’
- 008 *en dan valt hij er ook bijna / of valt hij d'r af*
 ‘and then falls hij there also almost / or falls he there down’

In summary, the bilingual texts, taken as a group, show occurrences of a unique bilingual-specific pattern of reference management (see in detail Table 8), given the overall dominance of temporal relations in linking events. There are no direct traces of cross-linguistic influence from the bilingual's other language, and no signs of erroneous performance, indicating a high level of attainment in both languages.

4 Assessing attainment in the two languages of bilinguals

Concerning the question of attainment, it is important to analyze the data of *individual* subjects on a qualitative as well as quantitative basis, and to look at the re-narrations in *both* languages of the bilinguals. The area of information structure that shows differences between Dutch and German – patterns in reference management – can be readily applied for a within-subject assessment of bilingual speakers. A measure of a difference in levels of attainment (between languages) is given when a bilingual is better able to incorporate the patterns in information structure in one language rather than the other. If a bilingual manages to adhere to the set of macrostructural planning principles in both languages in a target-like fashion, this will provide a basis in assessing attainment as ‘balanced’, that is to say an equally high level of attainment. A third possibility is, as already mentioned, a high level of attainment that results in a specific systematic pattern, which differs slightly from *both* monolingual patterns and is applied in *both* languages (a ‘bilingual-specific’ pattern).

Coming now to the detailed within-sample comparison of reference management in both languages, the focus will be placed on the seven subjects that carried out the narrative task in both Dutch and German (Table 8). It should be emphasized at this point that in all cases the narratives are (mainly) grammatically correct. Bilinguals are assessed by looking at use of ellipsis and how temporal linkage of events (e.g. shift) is expressed (explicitly or implicitly) in narratives in both languages. The following global planning principles were taken into account:

- With respect to reference management:
 - In (monolingual) German narratives, the protagonist has the status of a ‘global topic’ and ellipsis is used in reference to the protagonist (as syntactic subject), when other constraints do not intervene (e.g. syntactic restrictions).
 - In (monolingual) Dutch narratives, the protagonist has a different status and ellipsis is licensed when a closely defined causal link is given between events.
- With respect to the temporal frame:
 - In both (monolingual) German and Dutch narratives, narrative progression is established on the basis of temporal shift, and the relation need not be marked explicitly.

Table 8 shows that, even though in all cases the bilinguals’ percentage for use of ellipsis is lower than both monolingual groups, some subjects show monolingual-like patterns of use in the means used in reference maintenance, as well as in the expression of temporal shift in one or in both languages. Looking at an analysis of the whole sample which compares the occurrence of ellipsis in references to the subject in main clauses in the bilinguals’ German versus their Dutch narratives, the results of a paired samples test (Wilcoxon)⁸ show that the bilinguals use ellipsis significantly more

Table 8. Bilingual subjects' patterns of ellipsis and reference to temporal shift in both languages

Bilingual subjects	Dutch			German		
	% of ellipsis (= protagonist) in main clauses	Pattern for ellipsis	Reference to temporal shift	% of topic (= protagonist) deletion in main clauses	Pattern for topic deletion	Reference to temporal shift
Vp01	15.71%	monolingual like	monolingual like	47.37%	monolingual like	monolingual like
Vp02	0%	over-explicit reference to subject	predominance of causal relations	14.29%	over-explicit reference to topic	over-explicit reference to temporal shift
Vp10	6.90%	over-explicit reference to subject	over-explicit reference to temporal shift	7.41%	over-explicit reference to topic	over-explicit reference to temporal shift
Vp12	0%	over-explicit reference to subject	over-explicit reference to temporal shift	0%	over-explicit reference to topic	over-explicit reference to temporal shift
Vp13	13.33%	monolingual like	monolingual like	26.67%	monolingual like	monolingual like
Vp20	21.21%	ellipsis in case of subject	over-explicit reference to temporal shift	68.18%	monolingual like	over-explicit reference to temporal shift
Vp21	12.50%	over-explicit reference to subject	over-explicit reference to temporal shift	44.44%	monolingual like	monolingual like

frequently in German than in Dutch ($z = -2.023, p < .05$). Even though this finding reflects use and relative frequency of ellipsis in (monolingual) German compared to (monolingual) Dutch to a certain degree, it is nevertheless overshadowed by the over-explicit expression of temporal relations and its consequences for reference maintenance in the bilingual data, as discussed earlier.

4.1 Individual analyses and criteria for assessment of attainment

This final section of the analysis was carried out on the basis of a comparison between the individual bilinguals' patterns of reference management in Dutch and German, and the typical (Dutch or German) monolingual pattern. A fine-grained comparison at the individual level presents the following picture:

- Two subjects (Vp01, Vp13) show that they have managed to acquire the principles relating to reference management and temporal framing in the two languages. This can function as an indication of a high and balanced level of attainment in both languages (at this level of analysis), since the subjects show target language-specific patterns in both languages.
- One subject (Vp21) evidences a pattern that is target language-specific for German, but in Dutch he is over-explicit in the means used in reference management and the expression of temporal shift. This result can be used as a criterion for a higher level of attainment for German than for Dutch, in this domain of analysis.
- Similarly, Vp20 shows a pattern in the narratives in Dutch that show similarities with the condition for ellipsis (topic deletion) in German, but not in Dutch. In German, she has a

monolingual-like pattern of topic deletion. Temporal shift is, however, referred to consistently, not in the Vorfeld but in the Mittelfeld, which means that it does not interfere with reference management (see example 17). This subject can also be viewed as having a higher level of attainment of German.

Example (17)

(17) Subject Vp20

- 001 *ein Männchen ist in einer Blätterlandschaft mit Papier*
‘a little man is in a sheets-landscape with paper’
- 002 *und ø findet dann eine Wasserstelle*
‘and finds then a waterspot’
- 003 *und ø versucht dann da irgendwie mehr Wasser zu kriegen*
‘and tries then there somehow more water to get’
- 004 *und ø fängt dann dort auch an zu graben*
‘and starts then there also to dig’

The remaining subjects, the majority of the sample, show a high attainment of both languages, but their narratives evidence a bilingual-specific pattern, which is applied in both languages. This can be attributed to the core domain of the narrative, the temporal frame, and the way temporal relations are encoded: the relation of temporal shift is encoded explicitly with each event, thus precluding the conditions in information structure that allow ellipsis or topic deletion in either Dutch or German. This type of departure from the monolingual pattern is a tendency to be *overexplicit* in reference management and in marking the temporal frame.

On the basis of the patterns in reference management and the temporal frame shown in Table 8, a preliminary classification with respect to attainment in the two languages gives the overview depicted in Table 9.

In summary, the overview of this small sample of speakers provides evidence of both bilingual-specific patterns applied in both languages (3/7) as well as evidence for language-specific adherence to only one set of patterns (2/7) and target language-specific patterns in both languages (2/7). It indicates that the method may prove to be a useful tool in assessing a bilingual’s degree of balance in attainment, or whether there are differences between languages.

Although one subject (Vp13) has managed to acquire these principles in a balanced form in the two languages (at an equally high level of attainment) by the age of 16, no claims can be made as to whether the observed results constitute the end state in bilingual acquisition for the other subjects in the adolescent group, given the age of the majority of the participants and the time taken to acquire linguistic knowledge of this complexity in monolingual acquisition, with only one language to deal

Table 9. Assessment of attainment in the early bilingual speakers: reference management, temporal frame

Vp01	(Target) language-specific pattern in Dutch and German: balanced attainment levels
Vp02	Bilingual-specific pattern in Dutch and German
Vp10	Bilingual-specific pattern in Dutch and German
Vp12	Bilingual-specific pattern in Dutch and German
Vp13	(Target) language-specific pattern in Dutch and German: balanced attainment levels
Vp20	(Target) language-specific pattern in German, and not in Dutch
Vp21	(Target) language-specific pattern in German, and not in Dutch

with (up to the age of 13/14).⁹ In this sense, the existence of bilingual-specific strategies or systems in this domain of analysis may be a very plausible finding, since the acquisition of two subtly different sets of planning principles may prove to be very difficult. A bilingual-specific pattern of use that amounts to a compromise between the two may be an economical solution for certain stages of acquisition or even as the endstate of acquisition for languages that are typologically similar (which is a realistic possibility – looking at the older participants in the sample, e.g. Vp01).

5 Conclusions

The aim of the present analysis was to present a tool which allows the assessment of questions relating to attainment and differences in attainment in the two languages at any stage of bilingual acquisition, ultimate or otherwise. The study of Dutch–German bilinguals is based on planning principles underlying information structure that apply on a systematic basis in narrative texts as a whole. The first section of the comparison focused on monolingual speakers of Dutch and German, giving an outline of the subtle but nevertheless systematic differences in information structure across these two languages. The monolingual analyses show that German and Dutch speakers follow different principles in information structure in specific domains (temporal linkage, subject/topic assignment, reference management). The findings were used in the present analysis as a tool in the assessment of questions relating to attainment in bilingual speakers – taking the domains in which the two languages, Dutch and German, diverge.

The advantage of this method over those that investigate attainment on the basis of performance on single linguistic items (e.g. vocabulary), or for example MLU (as in Yip & Matthews, 2006) or fluency (naming speed, for example) is that it can be used to investigate ultimate attainment of learners or bilinguals at very advanced levels of attainment. The domain of analysis poses a challenge for L2 as well as bilingual speakers, since the linguistic knowledge at issue relates to sets of principles that are interrelated in a complex form, as the findings show. Acquisition requires a long period of input and exposure to the target language, since monolingual children need a long period of time to acquire this form of linguistic knowledge (up to the age of 13/14). If a learner manages to acquire this knowledge in target-like terms, this means that the learner has gone beyond the acquisition of the formal means available in a language and has learned how to use them appropriately in a complex linguistic task, which requires the creation of coherence on a large scale. This provides a measure for a very high level of attainment of the target language in question.

Despite the overall typological similarity between the two languages, and the nature of the differences in handling subject assignment, reference maintenance and temporal linkage, the present tool served in pinpointing differences of a systematic nature for the individual bilinguals. The study of principles underlying information structure of more distant languages will provide relevant points of reference in this regard.

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Notes

1. In Sorace (1993), though, the observed differences between natives' and learners' performances on a given linguistic task are described by means of the terms 'divergence' and 'incompleteness'. These have a rather negative connotation. In the present article, systematic differences from monolingual

- performance (that are grammatically correct) will be labeled 'bilingual-specific' (governed by principles specific to bilingual performance, that hold at text level), similar to Sorace's (2003) concept of 'optionality' in L2 systems (at the syntax–semantics interface).
2. In Birdsong (2006), for example, language dominance is defined as a measure of processing, related to degree of fluency, accuracy, speed and automaticity of processing. Defined as such, the present comparison of attainment in the two languages cannot provide insights into this issue. However, differences in performance on the complex task at hand between the two languages of a bilingual, i.e. evidence of a higher level of attainment in one language over another, may be taken as an *indirect* measure of language dominance (as in Flege, Mackay, & Piske, 2002; Golato, 2002): the language a person has a higher level of attainment in may be the one that is most 'active' (as in Heredia, 1997) and the one that the person has (had) most exposure to, and so forth.
 3. The term monolingual should be interpreted in the sense of not being highly proficient in the other language under investigation (either Dutch or German). All speakers did indicate having some knowledge of an L2 (mainly English). Speakers were excluded from the analyses if they had a very advanced knowledge of an L2, or if they had spent a long period of time abroad.
 4. The data were collected by the research group of Marianne Starren at the Radboud University (Department of Business Communication). I am grateful to Marianne Starren and Suzan van Ierland for providing me with the data.
 5. The shorter version was mainly used in L2 acquisition studies since the scene at issue contained machines that L2 speakers (and even some L1 speakers) find difficult to name. Since this often led to irritation and a disruption of narrative flow with L2 speakers, the scene was shortened. Information flow was given priority over comparability with respect to clause numbers for the bilingual group as well.
 6. Z-tests were conducted since they allow for a relatively basic comparison of proportions of a specific phenomenon within two independent samples. The tests can be considered reliable, since the number of datapoints (clauses) is relatively large and the test does not assume a specific type of distribution of the data (whether normal or differently).
 7. Most of the participants make a small number of grammatical errors in both languages. However, subject Vp21 makes more errors in his Dutch than his German narrative, whereas Vp13 makes no errors in Dutch but a few in German. Vp12 produced very short narratives in both languages. Note also that the narratives of the bilinguals are more compact (shorter) than the L1 narratives in general.
 8. For this analysis a non-parametric test was chosen, because of the small number of datapoints and the high degree of variation within the sample (the data is not normally distributed).
 9. Work in progress by the author aims at investigating narratives by Dutch–German bilinguals over 25 years of age. A pilot study with 16-year-old German native speakers shows that, although the rate of occurrence of ellipsis (topic deletion) is not as high as in the adult narratives, the data clearly indicate that the global planning principle, the protagonist as a global topic and implicit expression of temporal shift, has been acquired (as was also the case for the 14-year-olds investigated in Halm, 2010).

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Appendix

Appendix Table 1. Overview of early bilinguals that took part in both re-narration tasks

Subject code	m/f	Age	Acquisition of Dutch	Acquisition of German	Use of Dutch	Use of German
Vp01	f	46	Outside the home (> 2 yrs)	Parents (birth)	Daily (workplace, partner)	Daily (workplace, child)
Vp02	f	16	Mother (birth)	Father (birth)	Daily (school, mother)	Daily (father, school)
Vp10	f	16	Father (birth)	Mother (birth)	Daily (school, father)	Daily (mother, school)
Vp12	f	16	Mother (birth)	Father (birth)	Daily (school, mother)	Daily (father, school)
Vp13	f	16	Outside the home (> 2 yrs)	Parents (birth)	Daily (school, friends)	Daily (parents, school)
Vp20	f	18	Parents (birth)	Outside the home (> 1 yr)	Daily (parents, siblings)	Daily (school, friends)
Vp21	m	17	Parents (birth)	Outside the home (> 1 yr)	Daily (parents, siblings)	Daily (school, friends)

Appendix Table 2. Early bilinguals that only took part in the Dutch re-narration task

Subject code	m/f	Age	Acquisition of Dutch	Acquisition of German	Use of Dutch	Use of German
Vp05	f	16	Father (birth)	Mother (birth)	Daily (school, father)	Daily (mother, school)
Vp14	m	16	Mother (birth)	Father (birth)	Daily (mother, siblings)	Daily (school, father)
Vp15	f	16	Father (birth)	Mother (birth)	Daily (school, father)	Daily (mother)

Appendix Table 3. Early bilinguals that only took part in the German re-narration task

Subject code	m/f	Age	Acquisition of Dutch	Acquisition of German	Use of Dutch	Use of German
Vp00	f	19	Parents (birth)	Outside the home (> 1 yr)	Daily (parents, siblings)	Daily (school, friends)
Vp08	f	16	Mother (birth)	Father (birth)	Daily (mother, school)	Daily (father, school)
Vp09	f	16	Outside the home (> 0 years)	Relatives (> 4 years)	Daily (school, mother)	Daily (school, relatives)