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Verbal structure and content in written discourse:

Expository and narrative texts[*]

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This paper forms a bridge between the article on noun phrase patterning by
Ravid et al. 2002 and that on passive voice constructions by Jisa et al. 2002.
The study reports on a cross-linguistic, developmental study of verbal struc-
tures and verb types used in two genres of written discourse: personal narra-
tives and expository texts. The study is aimed at (a) establishing the profile
of linguistic features that characterize and differentiate these two genres; (b)
identifying the developmental changes beyond middle childhood that lead to
the proficient use of a full repertoire of verbal structures in the construction
of both types of text; and (c) providing fresh empirical evidence for cross-
linguistic similarities and differences in the linguistic devices used for Genre
differentiation. The paper begins to address these issues by considering
quantitative aspects of Genre differentiation in four age-groups (grade-
school children, junior high school, high school, and adults) and in five
languages (Dutch, French, Hebrew, Icelandic, and Spanish). We expected
narratives and expository texts to be characterized by contrasting distribu-
tion of the categories that we analysed — verb tense, aspect, mood, voice,
and person — across the age-groups and languages under study. To test this
prediction, all verbs in our sample were analysed using common coding
procedures in all five languages, followed by a statistical analysis of the fre-
quency distribution of each coded category (as our dependent variables)
across Age and Genre in each of the languages.

1. Introduction

In this section, we will briefly consider features of narrative compared with expository Genre; the ways that they contrast in organizational principles and discourse stance; the factors involved in "verbal paradigms" (the domain of our analysis); and the patterning of the categories of tense, aspect, mood, and voice in the five languages of our sample.[1]

1.1 Structural characteristics of narrative and expository genres

Both narrative and expository texts are hierarchically structured in three main parts: a beginning, middle, and end (Katzenberger 2001). However, the two genres of discourse represent contrasting, although not mutually exclusive, organizational principles (Bruner 1986); they rely on different verbal paradigms. In the classic description of Labov 1972, narrative structure consists of these parts: an abstract, an orientation, a complicating action, an evaluation, a resolution, and a coda. The major organizational principle of narratives is the temporal sequence of the recounted events (Labov 1972, Berman & Slobin 1994, Aksu-Koç & Stutterheim 1994, Bronckart 1996, Fayol 1997). In contrast, expository texts have a non-temporal, logical argumentative structure (Schneuwly 1988, Britton 1994, Bronckart 1996). They typically begin with an introduction — including a statement or statements of the main idea — followed by the body of the text, including a number of supporting arguments; and finally comes a conclusion, which restates the main idea and sums up the arguments (Miller 1989, Threadgold 1994, Paltridge 1997).

1.2 Stance

Narrative and expository texts also contrast in discourse stance (Berman et al. 2002). Personal narratives tend to be more involved and subjective in orientation, and specific rather than general in reference. However, the discourse stance of expository texts is more distanced and metatextual in orientation; it is cognitive or epistemic in attitude, rather than affective, and is generalized in reference.

1.3 Verbal paradigms

Narratives are the most extensively studied discourse Genre, particularly in developmental perspective. They also present the greatest variation in temporal contour and verbal form. Production of expository texts has not been studied to a similar degree, but these appear to present relatively less variation in verb forms (Fayol 1997). The verbal paradigm of narratives is typically anchored in the past, whereas expositories are anchored in the (timeless) present (Bronckart 1996, Biber et al. 1998, Berman 2001). The available options for aspectual marking in a given language are particularly important for temporal texturing of narratives, and for marking distinctions between foregrounded events (the story line) and background information (Berman & Slobin 1994:6–9, Aksu-Koç & Stutterheim 1994, Bybee et al. 1994, Hickmann 1995, 1997).

The difference between tense and aspect is that tense locates an event/situation in time, while aspect characterizes the internal temporal structure of an event. "Absolute" or "deictic" tense takes the moment of speech as the point of reference,[3] and locates the event as prior (past tense), simultaneous (present), or subsequent (future; see Comrie 1976:2).[4] In "relative" or "relational tenses," however, such as the English "perfect" tenses (*has gone, have gone* etc.), "reference time is not the same as the moment of speech" (Bybee et al. 1994:318]

Aspect, by contrast, describes the perspective of the speaker/writer on an event. We use the term PERFECTIVE (as distinguished from "perfect") for an aspect like that in Romance "preterit" forms, which signals that the situation is viewed as bounded temporally, and cannot be simultaneous with the moment of speech (Bybee et al. 1994:317). By contrast, IMPERFECTIVE aspect views the situation as unbounded — in the sense that it is habitual, continuous, or in progress at a particular reference point, or is characteristic of a period of time that includes the reference time. Finally, PROGRESSIVE aspect views the action as taking place simultaneously with the moment of reference, be it in the present, past, or future tense.

In languages that mark the perfective/imperfective distinction (e.g. the Romance languages), perfective aspect is typically used for foregrounding in discourse, and imperfective for background information (Hopper 1979). In languages lacking this distinction of aspect (including the Germanic languages and Hebrew), dynamic verbs in the past are typically interpreted as perfective, i.e. as presenting discrete events that constitute the foreground or story line (unless they are specifically marked as progressive or imperfective). In contrast,

verbs in the present tense are perceived by default as representing the timeless and the habitual (Bybee 1994; cf. also the gnomic present, Bybee et al. 1994), and as conveying the idea that the propositions hold true regardless of time (Biber et al. 1999: 459) — a feature characteristic of the temporal contours of expository discourse.

Expository texts tend to use imperfective aspect largely for signaling generality and duration. They also rely importantly (to a greater extent than narratives do) on other available options for differentiating between the hypothetical and the actual — such as modal verbs, as shown by Reilly et al. 2002, as well as subjunctive mood. Other linguistic devices for distancing the speaker/writer and downgrading agency, such as use of the passive and middle voice, also tend to play a greater role in expository than in narrative texts (see Jisa et al. 2002).

1.4 Typological features of verbal structures

Languages differ with respect to the range and types of linguistic devices available for expressing these different discourse functions. The five Languages included in this study — Dutch, French, Hebrew, Icelandic, and Spanish — represent three different language families: Germanic, Romance, and Semitic.[2] Thus they present interesting similarities and differences with regard to the linguistic devices they deploy for marking of tense, aspect, mood, and other verbal categories in discourse (Comrie 1976, 1985, Dahl 1985, Chung & Timberlake 1985, Bybee et al. 1994). The present study focuses on grammatical categories that are marked inflectionally on verbs in most languages of the world, particularly tense, aspect, mood, and person. We also include equivalent periphrastic constructions, such as the future in Dutch and Icelandic, as well as the periphrastic future in French and Spanish. The study also considers the progressive aspect (in Icelandic and Spanish) and the perfect (in French, Icelandic, and Spanish) as well as passive voice (in Dutch, French, Icelandic, and Spanish), all of which are marked periphrastically by combining an auxiliary with a non-finite form of the main verb. Table 1 gives and overview of how the five Languages mark the categories included in this study, and Table 2 shows examples of the relevant grammatical forms.

Below, we briefly review the relevant features of the verbal system in the five Languages in our sample. (For further discussion of these categories in cross-linguistic and/or developmental perspective, see Berman & Slobin 1994: 109–25, Aksu-Koç & Stutterheim 1994, Aisenman 1999.)

Table 1. Grammaticized categories of tense, aspect, mood, voice, and person in the five Languages

	Hebrew	Dutch	Icelandic	French	Spanish
TENSE					
Present	I	I	I	I	I
Past	I	I	I	I	I
Future	I	P	P	I, P	I, P
ASPECT					
Perfective/Imperfective	—	—	—	I	I
Past/Present perfect	—	P	P	P	P
Progressive	—	—	P	P	P
MOOD					
Subjunctive	—	—	I	I	I
Conditional	—	—	—	I	I
VOICE					
Passive	I	P	P	P	P
PERSON					
1st	I[a]	I	I	I	I
2nd	I[a]	I	I	I	I
3rd	—	I	I	I	I

[a] Hebrew marks person in only in Past and Future tense.

Note: I = Inflectional marking; P = Periphrastic marking, composed of an auxiliary + non-finite form of the verb. See examples in Table 2.

Tense. All five Languages included in our study have an obligatory marking of deictic tense on finite verbs (whether as main verbs or auxiliaries). They differ, however, in the tenses which are inflectionally marked (cf. Table 1). French, Hebrew, and Spanish have a tripartite tense system, marking present, past, and future tenses inflectionally. (French and Spanish also have periphrastic options for marking future tense). In Dutch and Icelandic, only present and past tenses are marked inflectionally; but a so-called future tense is marked periphrastically by combining a modal-type auxiliary verb with a past participle.

Aspect. The Languages differ greatly with regard to grammatical aspect (see Table 1). Spanish has extensive marking of aspectual distinctions, including obligatory, inflectional marking of perfective vs. imperfective aspect. It also

Table 2. Examples of forms for tense, aspect, mood, and voice in the five languages

Hebrew

PRES *mavriax* 'chases away'
PAST *hivriax* 'chased away'
FUTURE *yavriax* 'will chase away'
PASSIVE (PAST) *huvrax* 'was chased away'

Dutch

PRES *jagen weg* 'chases'
PAST *joegen weg*
FUTURE *zullen wegjagen*
PERFECT *hebben weggejaagd*
PAST PERFECT *hadden weggejaagd*
PASSIVE *worden weggejaagd*

Icelandic

PRES *rekur* 'chases'
PAST *rak*
FUTURE *mun reka*
PRES PERFECT *hefur rekið*, PAST PERFECT *hafði rekið*
PRES.PROG *er að reka*, PAST PROG *var að reka*
PRES SUBJUNCTIVE *reki*, PAST SUBJUNCTIVE *ræki*
PASSIVE (PRES) *er rekinn*

French

PRES *chasse* 'chases'
FUTURE *chassera*
IMPARFAIT *chassait*, PASSÉ SIMPLE (PERF) *chassa*
PASSÉ COMPOSÉ *a chassé*, PLUSQUEPARFAIT *avait chassé*
PRES SUBJUNCTIVE *(qu'il) chasse*, IMPERF SUBJ *(qu'il) chassât*
PERF SUBJUNCTIVE *(qu'il) ait chassé*, PLUSQUE SUBJ *(qu'il) eût chassé*
CONDITIONAL *chasserait*, PAST *aurait chassé, eût chassé*
PASSIVE (PRES) *est chassé*

Spanish

PRES *persigue* 'chases'
FUTURE *perseguirá*
IMPERFECTIVE *perseguía*, PERFECTIVE *persiguió*
PRES. PERFECT *ha perseguido*, PLUPERFECT *había perseguido*
PRES PROG *está persiguiendo*, IMPF PROG *estaba persiguiendo*
PRES SUBJUNCTIVE *persiga*, IMPERF SUBJ *persiguiera*
CONDITIONAL *perseguiría*
PASSIVE *es perseguido*

marks relative tense through use of the perfect (like English, with a form of the verb *haber* 'to have' and a past participle), and also has progressive aspect — again constructed analogously to English, with *be* plus present participle (Tolchinsky & Aparici 1999). Like other Romance languages, French has an inflectionally marked perfective/imperfective distinction, and a periphrastic perfect; but in French, the so-called *passé composé*, consisting of an auxiliary verb (the equivalent of either *have* or *be*) plus the past participle has replaced the older, inflected *passé simple* for marking the perfective past in spoken language (Dahl 1985, Bybee 1994), and to some degree in less formal written language as well (Gayraud 2000). The French *imparfait* is imperfective, and typically presents a past event as ongoing at the time of the point of reference. French lacks grammaticized progressive aspect.

Like other Germanic languages, Icelandic and Dutch lack a perfective/ imperfective distinction (Dahl 1985). In comparison to other Germanic languages, however, Icelandic has a relatively rich aspectual system, with present and past perfect (for marking relative tense) as well as progressive aspect; all these features are marked periphrastically (Friðjónsson 1989), and are similar in form and function to corresponding categories in English.[5] Grammatical aspect in Dutch, however, is limited to a perfect form, constructed from an auxiliary plus participle (Verhoeven & van Hell 1999). Hebrew has virtually no grammaticized marking of aspect; instead, it typically uses tense alternations to express aspect, in the sense of relative tense (Berman & Neeman 1994), as well as aspectual distinctions between durativity and perfectivity (Berman 1999).

Mood and voice. Four out of the five languages have what Keenan (1985: 251) calls "periphrastic passives," which use auxiliaries; but Hebrew has a "strict morphological passive," marked by a distinctive internal vowel (Berman 1994). The languages differ more markedly with respect to grammaticized options for marking irrealis moods. French, Icelandic, and Spanish have an inflectionally marked subjunctive mood, while French and Spanish also have a morphological verb form in conditional mood; but Dutch and Hebrew have neither. Modal verbs and other lexical and grammatical options, serving purposes similar to the subjunctive, are available in all five Languages; and in Hebrew, the future tense takes over some of the functions served elsewhere by the subjunctive.

Person. Finite verbs in all five languages are inflectionally marked for person. However, Hebrew only has overt inflectional marking of the 1st and 2nd persons, and only in the past and future tenses (Ravid 1995).

Summary. The five languages in our sample can be ranged on a cline, with regard to the number and type (inflectional or periphrastic) of the grammaticized options they provide for expressing textual temporality and background/foreground distinctions, as well as distinctions of stance at the level of the verb phrase. Spanish is at one extreme of the cline, with elaborate inflectional marking of tense, aspect, mood, and person — in addition to periphrastic options for progressive, for perfect aspect, and for passive voice. Hebrew is at the other extreme, with a tripartite inflectional tense system, but no grammaticized marking of aspect or mood, and relatively limited marking of person. French, Icelandic, and Dutch are in the middle, roughly in that order.

1.5   Developmental perspectives

All the grammatical categories included in this study have been acquired by the age of the youngest children in our sample (9–10 years); however, proficient and flexible deployment and alternation of these forms, in the context of extended discourse, continues to develop into adulthood (Berman & Slobin 1994: 597–642). A convergent finding from other studies in the present collection is that the grade-school children already distinguish the two types of discourse clearly in various ways. Prior research from a range of perspectives has also demonstrated that children produce well-structured narratives by middle childhood (Peterson & McCabe 1983, Ragnarsdóttir 1992, Berman & Slobin 1994, Hickmann 1995); and that children's use of specific tenses to create an opposition between foreground and background in narratives by using specific tenses develops gradually during the grade-school years (Fayol 1985, Hickmann 1997). However, findings from cross-linguistic studies reported by Berman & Slobin (1994: 39–84), among others, support the earlier finding by Labov 1972 that pre-adolescents still have a long way to go in the development of narrative skills. Importantly, social-cognitive and higher-order information processing and metacognitive skills continue to develop into adulthood, entailing important progress in the construction and comprehension of complex texts (see Reilly et al. 2002; Berman et al. 2002, §5.9). The mastery of expository texts, in particular, seems to be a more complex and later accomplishment than narrative development, and it is evidently even more dependent on the higher-order cognitive developments that take place in and after adolescence (Britton 1994, Scott & Windsor 2000, Berman 2001, Tolchinsky et al. 2002).

2.   Research questions

Against the above background, the study addresses three main research questions:

a.   Are there systematic differences between narrative and expository texts in terms of the statistical distribution of the categories reviewed above — tense, aspect, mood, person marking — as well as in the syntactic form of verbs as finite or non-finite, in the lexico-semantic content of verb types, and in the complexity of the verb phrase (as estimated by the number of verbal elements per clause)?
b.   Do these distributions change with age, and in what directions?
c.   What cross-linguistic similarities and differences are revealed by the quantitative profiles yielded by the two Genres, expository vs. narrative?

3.   Predictions

The study was guided by the following predictions concerning the effect of the three independent variables — Age, Genre, and Language — on the distribution of verb forms and verbal categories.

3.1   Genre differences

In narratives, we expect the past tense to be predominant, and perfective and/or perfect aspect to occur relatively more frequently than in expositions. In contrast, expository texts are expected to use predominantly the present tense, and to contain more frequent marking of imperfective and progressive aspect than narratives. Given their distanced, more generalized, and epistemic stance, expository texts are further expected to contain relatively more frequent marking of passive voice and of non-deictic or irrealis mood and modality — including future tense, 3rd person, subjunctive mood, and non-finite verbs, in the languages which mark these categories grammatically. In terms of verb types, we expect aspectual verbs (like those meaning *begin, keep on, remain*) to occur relatively more often in narratives, and modal verbs (like *must, should, be able*) to occur more frequently in expositions.

3.2   Developmental trends

We expect that the key features of inter-genre distinctions, such as dominant tense and use of aspect for foregrounding and backgrounding, will already be in place in the youngest age-group (9–10 year old grade-schoolers), and that these will not change significantly with age. However, we expect that the full repertoire of options for marking the hypothetical, conditional, and impersonal — including the relatively infrequent subjunctives, passives, and future, which are all characteristic of the later developing expository texts — will be used more frequently by older subjects, from adolescence onward. We further expect that the complexity of the verb slot, as measured by the mean number of verbal elements per clause, will increase with age.

3.3   Cross-linguistic comparisons

We expect that the dominant tenses of expositions and narratives — present and past respectively — will be the same in all languages; however, this differentiation may be less extreme in languages that do not have a grammaticized marking of aspect and/or mood (such as Hebrew). We expect that the frequency of modals and aspectual verbs will reflect to some degree the availability of grammaticized options for aspect and mood in a language. Thus we expect them to be relatively more frequent in languages with little grammaticized marking of aspect and subjunctive mood (e.g. Dutch, Hebrew), as compared to languages with more such distinctions (e.g. Spanish).

We expect that languages like Dutch, French, and Icelandic — which have periphrastic combinations of auxiliary verbs plus a non-finite verb form for marking passive voice, perfect, future, and/or progressive aspect — will have relatively more verbal elements per clause than a language like Hebrew, which has an impoverished system of grammatical aspect and an inflected future as well as passives.

4.   Database

The data used for this study came from the database shared by the other articles in the present collection (see Berman & Verhoeven 2002, §§1.1–1.5). Analyses were conducted on the written expository and narrative texts produced by at least two groups of school-children and by adults in five languages. Table 3 shows the number of texts in each Age-group by Genre and by language. For

each language, the sample included texts from at least three Age-groups: Grade-school children (henceforth, G-group), adults, and one of the two intermediary groups — Junior High (J-group) and High School (H-group). In Icelandic and Hebrew, all four age-groups were included. The number of participants per age-group varied from 10 to 20, equally distributed between sexes, yielding a database of 539 texts.

5. Method and categories of analysis

All verbs in the transcribed written narrative and expository texts were entered on a coding tier in CHAT format (CHILDES program, see McWhinney 1995, MacWhinney & Snow 1989), following common "V-slot coding" decisions adapted to each of the five Languages;[6] cf. Ragnarsdóttir 2000 for Icelandic, Berman et al. 2000 for Hebrew. For purposes of the present study, the coding included the following categories: tense, aspect, mood, voice, person, finiteness, and type of verb.

Since our purpose was to characterize the pattern of verbal features in expository and narrative texts, each text constitutes a unit of analysis. The length of the texts varies greatly by Age and Language (see Berman & Verhoeven 2002, §4.1). We therefore based our analyses on the relative frequency of each coded category per text, presented as percentages. The only exception (score in raw numbers) is the MEAN NUMBER OF VERBS PER CLAUSE PER TEXT, a measure we included as an indication of their structural complexity. Below we describe in detail the categories coded for this study, and the procedure

Table 3. Number of written expository and narrative texts analysed by language and age-groups

	Languages									
	Hebrew		Dutch		Icelandic		French		Spanish	
Age groups:	Exp.	Nar.	Exp.	Nar.	Exp.	Nar.	Exp.	Nar.	Exp.	Nar.	Total:
G-group	20	20	20	20	20	20	20	20	10	10	180
J-group	20	20	10	10	19	20	20	20	0	0	139
H-group	20	20	0	0	20	20	0	0	10	10	100
Adults	20	20	10	10	10	10	10	10	10	10	120
Total:	80	80	40	40	69	70	50	50	30	30	539

followed in our calculations of the relative frequency of each category per text (i.e. the value of each dependent variable).

5.1 Tense

All finite verbs were coded for morphologically marked tense, regardless of whether they were marked for aspect and voice as well. In French, Hebrew, and Spanish, these included PRESENT, PAST, and FUTURE. In addition to the inflected present and past tenses, we included the periphrastic future tense in Dutch and Icelandic. The percentage of each category, for each text, was calculated out of the total of finite verbs in that text.[7]

5.2 Aspect

In the languages that mark aspect inflectionally or periphrastically (auxiliary verb plus main verb), we coded aspectual categories which included the PERFECT/PERFECTIVE;[8] these included, for French, the *passé simple, passé composé,* and *plusqueparfait;* for Icelandic, the perfect; and for Spanish the preterit, perfect, and pluperfect tenses. We also coded the IMPERFECTIVE, including the French *imparfait* and the Spanish imperfect, and the PROGRESSIVE in Icelandic and Spanish. (See Table 2 for examples of these forms in the three Languages). We then calculated the percentage of the occurrence of each coded aspectual category, in each text, out of the total clauses in that text.

5.3 Mood

In Icelandic and Spanish, we coded instances of the SUBJUNCTIVE mood, and we calculated their percentage for each text out of the total finite verbs in that text.

5.4 Voice

All instances of PASSIVE voice were coded in Icelandic, Dutch, French, and Spanish. The percentage of passives for each text was calculated out of all clauses in that text.

5.5 Person

In Dutch, French, Icelandic, and Spanish, all finite verbs were coded for 1st, 2nd, or 3rd person marking. We calculated the percentage of each person, for each text, out of all finite verbs in that text.

5.6 Finiteness

All verbs were coded as FINITE, i.e. as inflected for tense, or NON-FINITE — including infinitives, participles, or gerunds, depending on the language. The percentage of each category, in each text, was calculated out of the total number of all verbs in that text.

5.7 Types of verbs

LEXICAL verbs were coded in all five languages. Non-lexical verbs were subcategorised into the COPULA and other non-lexical verbs, e.g. those serving as auxiliaries, in all languages except Hebrew. In French, Hebrew, and Icelandic, non-lexical verbs were further subcategorized into MODAL verbs (verbs of propositional attitude) vs. ASPECTUAL verbs. The percentage of each verb-type category, for each text, was calculated out of the total of all verbs in that text.

5.8 Verb forms per clause

We counted the total number of verbs per text, and we calculated the mean number of VERB FORMS PER CLAUSE for each text by dividing this number by the total number of clauses. For example, English *jump, jumps, jumping, to jump* would all get a score of 1; but *has been jumping, might have jumped, began to try to jump,* would each score 3.

6. Effects of Age and Genre

For each of the coded categories listed above that constituted the dependent variables of the study, we calculated the relative frequency/mean percentage of use as a function of two independent variables: Age and Genre. Separate two-way ANOVAs were performed on these data for each Language, including the factors of Genre (expository/narrative) and Age (G-group, J-group, H-group, Adults).

Table 4. Mean percentages/numbers of verb forms and verb categories by Genre in Hebrew, Dutch, Icelandic, French and Spanish.

	Hebrew		Dutch		Icelandic		French		Spanish	
	Exp	Narr	Exp	Narr	Exp	Narr	Exp	Narr	Exp	Narr
TENSE:										
Pres	83%	28%	77%	34%	91%	27%	86%	15%	88%	26%
Past	8%	69%	12%	59%	9%	73%	11%	84%	8%	73%
Fut	9%	4%	2%	1%	0%	0%	3%	1%	2%	0,4%
ASPECT:										
Prf/Prfv					4%	10%	25%	51%	5%	46%
Imperf									95%	54%
Progr					4%	4%	0%	0%	2%	2%
MOOD:										
Subj					8%	5%			12%	3%
VOICE:										
Active			83%	89%	85%	92%	86%	88%	3%	1%
Passive			7%	5%	8%	4%	3%	5%		
PERSON:										
1			14%	33%	7%	38%	13%	45%	17%	39%
2			15%	5%	1%	1%	2%	0,1%	4%	1%
3			71%	61%	92%	62%	84%	55%	79%	60%
FINITENESS:										
Fin	78%	85%	70%	72%	66%	73%	68%	59%	65%	72%
Nonfin	22%	15%	29%	27%	34%	27%	32%	41%	35%	28%
VERB TYPE:										
Lex	49%	65%	63%	65%	60%	65%	59%	55%	80%	79%
Cop			14%	14%	18%	16%	16%	6%	11%	11%
Asp	2%	5%			0,3%	1%	0%	1%		
Mod	18%	11%			10%	4%				
V's per clause										
	1,18	1,15	1,22	1,26	1,33	1,28	1,25	1,7	1,23	1,27

Table 4 gives an overview of the mean percentages for all the coded categories (dependent variables) by Genre for each of the five Languages. As noted in further detail below, Genre was found to have pervasive effects on the distribution of verb forms, whereas Age was not. All age-groups are therefore collapsed in Table 4, in order to simplify presentation of the results. In cases where Age

was found to be a significant factor, the relevant means and results of post-hoc tests are reported in the text.

Table 5 lists all significant results of the Language-specific two-way ANOVAs, and the size of significant main and two-way interaction effects of Age and Genre for each category (dependent variable) and Language (significance levels .05 and .01). Results for these variables, as detailed in Table 4 and Table 5, are described in §6 below.

Table 5. Significant main and interaction effects of Genre and Age in Hebrew, Dutch, Icelandic, French and Spanish

	Comparison		
Category	GENRE		AGE
TENSE			
Present	He: E>N	F(1,152)=329,59**	He: A>G	F(3,152)=4,45**
	Du: E>N	F(1,74)=48,58**		
	Ic: E>N	F(1,131)=224,82**		
	Fr: E>N	F(1,94)=233,16**		
	Sp: E>N	F(1,54)=120,95**		
Past	He: N>E	F(1,152)=509,39**	He: A<G=J	F(3,152)=3,81*
	Du: N>E	F(1,74)=62,39**		
	Ic: N>E	F(1,131)=224,82**		
	Fr: N>E	F(1,94)=255,55**	**Fr: Narr: JJ>A****	
	Sp: N>E	F(1,54)=148,53**		
Future	He: E>N	F(1,152)=15,14**		
	Fr: E>N	F(1,94)=6,29**	**Fr: Narr: A>G***	
	Sp: E>N	F(1,54)=6,55**		
ASPECT			
Prf/Prfv	Ic: N>E	F(1,131)=16,59**		
	Fr: N>E	F(1,94)=27,68**	Fr: A<G<J	F(2,94)=4,95**
	Sp: N>E	F(1,54)=84,99**		
Imperf	Fr: E>N	F(1,94)=3,74*		
	Sp: E>N	F(1,54)=84,99**		
Progr			Sp: G>H>A	F(2,54)=11,04**
MOOD			
Subj.	Ic: E>N	F(1,131)=9,80**	Ic: A>G	F(3,131)=5,39**
	Sp: E>N	F(1,54)=7,88**		
VOICE			
Passive			Du: A>J>G	F(2,74)=3,98*
	Ic: E>N	F(1,131)=8,66**		
	Fr: E>N	F(1,94)=7,62**	Fr: G=J<A	F(2,94)=5,63**
	Sp: E>N	F(1,54)=7,08**	Sp: G<H<A	

Category	Comparison			
	GENRE		AGE	
PERSON				
1	Du: N>E	F(1,74)=14,12**		
	Ic: N>E	F(1,131)=156,17**	**Ic: G>H=A>J**	**F(3,131)=6,63****
	Fr: N>E	F(1,94)=49,09**		
	Sp: N>E	F(1,54)=16,68**		
2	Du: E>N	F(1,74)=7,47**	Du: G=J>A	F(2,74)=3,93*
	Fr: E>N	F(1,94) = 41,46**		
3	Ic: E>N	F(1,131)=145,71**	**Ic: G>H=A>J**	**F(3,131)=6,61****
	Fr: E>N	F(1,94)=41,46**		
	Sp: E>N	F(1,54)=10,27**		
FINITENESS				
Fin	He: N>E	F(1,152)=21,36**	He: H>A	F(3,152)=3,77*
	Ic: N>E	F(1,131)=13,60**		
	Fr:E>N	F(1,94)=4,96*		
VERB TYPE				
Lex	He: N>E	F(1,152)=47,48**	He: G>J	F(3,152)=3,10*
	Ic: N>E	F(1,131)=5,32*		
Cop	Fr: E>N	F(1,94)=15,35**		
			Sp: G<H,A; H>A	
Asp	He: N>E	F(1,152)=11,46**		
Mod	He: E>N	F(1,152)=31,61**		
	Ic: E>N	F(1,131)=25,70**		
V's per clause			He: A>G=J=H	
	Fr: N>E	F(1,94)=7,90*		

Note: * p<.05; **p<.01; **Interaction: In bold.**

Results here are discussed in relation to the categories and coded subcategories of tense, aspect, mood, voice, finiteness, and (verb type, as well as in terms of the mean number of verbs per clause. The procedure for coding and for calculating a normalized value for each of these dependent variables was as outlined in §5.

6.1 Tense

Table 4, above, provides the mean percentages for present, past, and future tenses,[9] in expository texts and narratives respectively, for each of the five Languages. As shown by Table 5, the two-way ANOVAs for this category — including Age and Genre as factors, and the relative proportions of present, past, and future tenses per text as dependent variables — reveal statistically significant main effects and two-way interactions for each of the three tenses, as follows:

With respect to the factor of Genre, a main effect was found for the distribution of present and past tense in all five Languages, as well as for future tense in the three languages which mark it morphologically (French, Hebrew, and Spanish). This confirms that overwhelmingly more past tenses occur in narratives (ranging from 59% in Dutch to 84% in French, see Table 4) than in expository texts (ranging from 8%, in Hebrew and Spanish, to 12% in Dutch), across age-groups and in all languages; and that significantly more present and future tenses occur in expositions; the relative frequency of the present in expositions ranges from 77% in Dutch to 91% in Icelandic, and of future from 0% in Icelandic to 9% in Hebrew. In narratives, by contrast, present and future occur far less (respectively, from 15% in French to 34% in Dutch, and from 0% in Icelandic to 4% in Hebrew).

A significant main effect of Age was found only in Hebrew, where there was also an interaction between Age and Genre in the distribution of the past tense. The distribution of the present and past tenses changes with Age in Hebrew, such that adults use significantly more present tenses (M=61%) than grade-schoolers (M=47%), and both grade-school (M=43%) and junior-high students (M=43%) use more past tenses than adults (M=33%). The significant interaction between Age and Genre for past tense in the Hebrew sample reflects the greater difference between expository and narrative texts with respect to the use of the past tense in the two younger groups (grade-school and junior-high) than the two older (high-school and adults).

Age and Genre also interact in the distribution of present and past tenses in Icelandic. In both cases, the significant interaction reflects a very different pattern for the junior-high group, where the difference between the two Genres is smaller than in the other age-groups. Whereas the relative share between the two tenses in the written narratives is the same in the three other Icelandic Age-groups, namely 80% past tense and 20% present tense, the proportions in the junior-high group are 55% past and 45% present.[10]

6.2 Aspect

As described in §5.2, this analysis included three languages — French, Icelandic, and Spanish — and three categories of grammatical aspect — perfective, imperfective, and progressive. Spanish was coded for all three categories, French for the first two, and Icelandic for perfective and progressive.

The mean percentages of each category in expositions vs. narratives are shown in Table 4. The two-way ANOVAs with Age and Genre as factors — along with the percentages of the perfective, imperfective, and progressive, respectively, as dependent variables — yielded main effects of Genre as follows: The perfective was significantly more frequent in narratives in all three Languages concerned, while the imperfective was more frequently marked in expositions in both French and Spanish. The relative frequency of the progressive aspect was similar in the two genres in both Icelandic and Spanish.

In French, there was a main effect of Age on the distribution of the perfective aspect. Post-hoc tests showed that junior-high students used significantly more perfectives (M=45%) than did adults (M=27%). A main effect of Age on use of the progressive aspect emerged in Spanish: Post-hoc analyses showed a decrease with Age, such that the G-group (M=6%) was followed by the J-group (M=0.5%) which in turn used more progressives than Adults (M=0.04%).

6.3 Mood

The subjunctive mood was coded in Icelandic and Spanish. The proportion of subjunctive is relatively low across Genre and Language (see Table 4). In both Languages, ANOVA revealed a main effect of Genre. The subjunctive mood was used relatively more in expositions (8% in Icelandic, 12% in Spanish.) than in narratives (3% in Spanish, 5% in Icelandic). In Icelandic, there was furthermore a main effect of Age. Duncan's post-hoc test showed that adults (M=9%) use significantly more subjunctives than the G-group (M=4%) and H-group (M=5%), while the J-group (7%) uses significantly more than the G-group.

6.4 Voice

Passive constructions were coded in Dutch, French, Icelandic, and Spanish. Mean percentages of passives in expositions and narratives as shown in Table 4, and the results of ANOVA, as shown in Table 5, reveal main effects of Genre in Icelandic, French, and Spanish. The Genre difference was marginally significant

in Dutch ($p = 0.089$). In all cases, passives were relatively more frequent in expository text than in narratives.

In addition, a main effect of Age was found in Dutch, French, and Spanish, where the use of passives increased with Age: in Dutch, G-group M=4%, J-group M=6%, Adults M=10%; in French, G-group M=3%, J-group 4%, Adults M=8%; in Spanish, G-group M=0.5%, H-group M=2%, Adults M=3%. In Icelandic, the distribution of passives did not change significantly with age.

6.5 Person

Person marking on verbs was coded in Dutch, Icelandic, French, and Spanish. Table 4 shows the mean percentages of 1st, 2nd, and 3rd persons per text, in expositions and narratives. Table 5 shows significant main effects and interactions of Genre and Age, as follows.

There was a main effect of Genre on the distribution of 1st person verbs in all four languages. In all cases, narratives contained relatively more 1st person verbs than expositions.

A main effect of Genre on the distribution of 2nd person marking emerged in French and Dutch. Expositions contained relatively more 2nd person verbs than narratives in both Languages. In Dutch, Age also was a significant factor. Post-hoc analyses showed a decrease of 2nd person with Age (G-group M=13%, J-group M=10%, Adults M=3%). The 2nd person was rare in the other Languages (see Table 4), and no significant effects or interactions were observed.

Finally, a main effect of Genre on 3rd person verbs emerged in all Languages except Dutch, where Genre interacted with Age. In the G-group and adults, but not in the J-group, 3rd person marking was more frequent in expository texts than in narratives. As can be seen in Table 4, verbs inflected for 3rd person show higher frequencies than 1st or 2nd person verbs in both Genres across languages, but they are significantly more frequent in expositions (ranging from 92% in Icelandic to 71% in Dutch) than in narratives (from 62% in Icelandic to 55% in French), across Ages in all languages — except for the J-group in Dutch, where 3rd person marking was more frequent in narratives (67%) as compared to expositions (57%).

6.6 Finiteness

As appears in Table 4, finite verbs are relatively more frequent than non-finite verbs in both Genres. In narratives, finite verbs range from 85% in Hebrew to

59% in French; in expositories, they range from 78% in Hebrew to 65% in Spanish. A two-way ANOVA including Age and Genre as factors, and the proportion of finite vs. non-finite verbs as dependent variables, for each of the five languages, reveals significant effects as well as interactions for Age and Genre.

With respect to the factor of Genre, in three of the five languages — Hebrew, Icelandic, and Spanish — narratives contained relatively more finite verbs than expository texts, and expository texts contained more non-finite verbs than narratives. In French, the difference was in the opposite direction, whereas finiteness did not appear to distinguish Genre in Dutch.

A main effect of Age was observed only in Hebrew. Post-hoc analysis revealed that Hebrew high-school texts contain more finite verbs (M=84%) than those of adults (M=77%). In other words, the distribution of finite and non-finite verbs is similar across Age-groups in all Languages except Hebrew, where adult texts contain significantly more non-finite and fewer finite verbs than those of high-school students.

6.7   Types of verbs

As noted above, verbs were (maximally) divided into four subclasses: lexical, copular, modal, and aspectual. Table 4 shows the mean percentages for each subclass by Genre. Table 5 presents the results of language-specific two-way ANOVAs, including the proportion of the four classes of verbs per text as dependent variables, and shows statistically significant main effects and two-way interactions for each category.

Lexical verbs. There was a main effect of Genre on the distribution of lexical verbs in Hebrew and Icelandic, and a main effect of Age in Hebrew. Post-hoc analysis showed a higher proportion of lexical verbs in the Hebrew grade-school group (M=63%) than in junior high (M=54%). In other words, Icelandic and Hebrew narratives contain relatively more lexical verbs than do expositions overall, and expositions show more non-lexical verbs than narratives. In the Icelandic texts, this difference is similar in all age-groups; but in Hebrew, grade-schoolers use significantly more lexical verbs than junior-high students. The distribution of lexical verbs was similar across Genres and age-groups in Dutch, French, and Spanish.

Copula. The ANOVA revealed a main effect of Genre on the distribution of the copula in French, and a main effect of Age in Spanish. French expository texts

have a higher proportion of the copula than do narratives. In Spanish, post-hoc tests show that grade-schoolers (M=6%) make less use of the copula than high-schoolers (15%) and adults (12%), while high-schoolers use significantly more than adults. In Dutch, Icelandic, and Spanish, the distribution of the copula was uniform across Age and Genre.

Aspectual verbs. These were coded separately in Hebrew, French, and Icelandic. There was a main effect of Genre on the distribution of aspectual verbs in Hebrew, where such verbs are more frequent in narratives (5%) than in expositions (2%). Aspectual verbs are very infrequent in Icelandic and French (1% or less, see Table 4), and they show no significant difference in distribution by Genre or Age.

Modal verbs. These were coded separately in Hebrew and Icelandic. There was a main effect of Genre on the distribution of modal verbs; and as expected, modal verbs are more frequent in expositions than in narratives (see also Reilly et al. 2002).

6.8 Verb forms per clause

Finally, the bottom row of Table 4 reveals the mean number of verbal elements in a single clause per text, in narratives and expositions respectively, for each of the five languages. As shown in Table 5, ANOVA yielded a main effect of Genre only in French, where narratives contained significantly more verb forms per clause (1.7) than expositions (1.25). A significant main effect of Age was observed only in Hebrew, where post-hoc tests revealed significantly more verb forms in adult texts (M=1.23) as compared to those of all three younger age-groups (grade-school M=1.14, junior-high M=1.15, high-school 1.13). In other words, the structural complexity of the verb phrase, as measured by the number of verbal elements per slot, was uniform across Genre except in French, where narratives scored higher than expositions. This score does not change significantly with Age except in Hebrew, where adults used significantly more verbs per clause than children.

7.   Discussion

The research questions addressed by this study were, first, whether there is a systematic inter-genre difference in the distributional pattern of verbal forms

and content in personal narratives as compared with expository discussions; second, whether these distributions change with age, and third, whether they vary among the five languages under study.

The results of our analyses confirmed most of our predictions for all three questions. We found a systematic and statistically significant distinction in the use of verb forms in narratives, as compared to expositions, across all age-groups for virtually all the wide range of parameters that we considered. The use and patterning of verb tense, aspect, mood, voice, and person emerge as markedly dependent on Genre, across the five languages in our sample, although with Language-specific configurational patterns.

7.1 Tense

It is clear that tense is differentiated by Genre, in all five languages and across age-groups, in the way we predicted. The present tense was the "anchor" tense in expositions. In marked contrast, narratives were anchored in the past tense. In the languages that have an inflected future tense (Hebrew, French, Spanish), the use of future forms, although generally low across the database, was significantly more common in expositories as compared to narratives. In Icelandic and Dutch, with only a periphrastic option for future, this form was extremely rare. There was a tendency for future to increase with Age, but this did not reach statistical significance.

7.2 Aspect

Aspect was also differentiated across Genre, in the predicted ways. The use of the perfective and/or perfect aspect was significantly more common in narratives than in expository texts in Icelandic, French, and Spanish. In contrast, expository texts in French and Spanish — the two languages which have imperfective forms — have a much higher rate of the imperfective than do narratives across age-groups. The progressive aspect, by contrast, was rarely used, and was uniform across genres in Icelandic and Spanish. In Spanish, it was used almost exclusively by grade-school children.

7.3 Mood and voice

The subjunctive mood was used more in expository texts than in narratives in Icelandic, and barely reached our significance level in Spanish ($p=0.06$); this is

in keeping with the "irrealis" nature of expository discussion as compared with narrative. The passive voice also occurred significantly more in expositories in Icelandic, Spanish, and French; but the difference was marginally significant in Dutch. In a subsequent study, including a larger sample of texts, Genre emerged as statistically significant for the use of Dutch passives (van Hell et al. 2002). Writers in all the languages used the passive increasingly with age (cf. Jisa et al. 2002), and adult Icelandic writers used the subjunctive more than Icelandic children.

7.4 Person

In the four languages for which person was coded (excluding Hebrew), the 3rd person was predominant in both Genres; but in accordance with our predictions, it was significantly more so in expositions than in narratives. Narratives, in turn, contained more verbs in the 1st person than did expositories — in keeping with the more subjective stance of the personal narratives, as compared to the generalized and impersonal exposition. The 2nd person was rarely used except in Dutch texts, where it occurred significantly more often in expository texts than in narratives, and was used significantly more by children than adults.[11]

In short, in the expression of textual temporality — including the categories of tense, mood, voice, and person as distinguishing features of expository compared with narrative discourse — we found generally consistent trends in the use of grammatical forms of verbs across age-groups and languages. In keeping with our predictions, narrative texts use the past as their anchor tense, and are characterized by the use of perfect and perfective aspect. They contain more 1st person marking than do expositions. Expository texts, in contrast, are anchored in the present, are characterized by imperfective aspect where available, and contain relatively more 3rd person marking, passives, and subjunctives than do narratives.

7.5 Types of verbs

In contrast, the types of verbs used by our subjects in their written texts — reflecting choice of clause construction as copular or lexical, and as modally or aspectually modified or not — did not distinguish between genres similarly across the sample. Thus relatively more lexical verbs were used in narratives, as compared with expositions, in Icelandic and Hebrew texts; but their distribution

was similar across Genre in Dutch, French, and Spanish. The use of copular clauses also presents a mixed picture, since they differentiated between Genres in French (where they were more common in expositions), but not in Dutch, Icelandic, or Spanish. The use of modal verbs, as coded for Hebrew and Icelandic, proved distinctive for Genre in both Languages, since modal verbs were significantly more common in expository texts as compared to narratives. Aspectual verbs, however, were more common in narratives in Hebrew; but they were extremely rare in Icelandic and French, both of which present grammatical options as well for marking aspect.

7.6 Finiteness

Finite verbs accounted for the bulk of all verbs in both Genres in all Languages, but finiteness also distinguished Genre in all the Languages except Dutch. Non-finite verbs were used more in expository texts in Hebrew, Icelandic, and Spanish, whereas finite verbs were more dominant in narratives. The relative proportion of non-finite forms increased with age in Hebrew, where they were used significantly more by adult than by high-schoolers.

7.7 Verb forms per clause

Complexity of the "verb slot," as measured by the mean number of verb forms in a single clause, did not prove to be a significant indicator of Genre differentiation except in French, where clauses in narrative texts were relatively longer, in terms of verbal elements, than in expository texts. Only in Hebrew did we find support for the predicted age-related effects on verbal complexity as measured by the mean number of elements per clause: Adult Hebrew writers used significantly more verbs per clause than Hebrew children and adolescents.

7.8 Summary

In sum, the distribution of verbal structures was significantly different in the two types of texts on practically all of the parameters included in our analyses, across Age groups. This applies to all five Languages, although the exact configuration of the patterns observed differs from one Language to another, depending on the range and type (inflectional, periphrastic, or lexical) of the repertoire of options available for fulfilling any given discourse function. This Genre differentiation is already established in the youngest groups in our

sample (4th–5th grade children); and in marked contrast to the widespread and significant differentiation between expository vs. narrative discourse revealed by verb form and content across different languages, the distribution pattern of most of the parameters does not change significantly with age, except in Hebrew. What does appear to change with age, however, is the exploitation of available subsystems for marking irrealis contingencies, hypothetical, or possible situations — and for distancing the writer from the deictic center, which is characteristic of expository texts. This is shown most markedly in relative frequency of passives (see Jisa et al. 2002) and in reliance on modal-type expressions (as demonstrated for English, and for three of the languages in the present sample, by Reilly et al. 2002). The use of subjunctives in languages that mark mood inflectionally also increases with Age.

It is interesting that, of our five languages, Hebrew — which has no grammaticized marking of mood or aspect — is the one language that reveals marked developmental differences in the use of verb tenses and verb types as a function of Age. Thus the proportion of the anchor tense (present tense in expositories, past in narratives) decreases with age, and there is a corresponding increase in the relative share of the non-anchor tense. The use of lexical verbs and finite verbs decreases in favor of significantly more non-lexical and non-finite verbs. Finally, Hebrew is the only language that shows a significant Age effect in the complexity of the verb phrase, as measured by the number of verb elements per clause; adult writers use more verbs per clause than children and adolescents. All this can be attributed to increased reliance, by Hebrew-speaking adolescents and adults, on deployment of tense-shifts for grammatical marking of relative tense, and for the discourse function of distinguishing foreground and background clauses — as well as on the use of the future tense for marking irrealis, and the periphrastic use of modal and aspectual verbs for purposes similar to those served by grammatical marking of aspect and mood in the other languages (Berman & Neeman 1994, Berman 2000). In highly inflected languages such as Spanish, the increased complexity of the texts is likely to be reflected in verb morphology, rather than in the number of elements per clause.

With respect to a change in discourse stance, older writers appear to rely increasingly on devices identifiable with the discourse-sensitive function of "distancing" (Berman et al. 2002, §3). This was not directly measured in the present study; however, with age there is an increased intermixing of forms typically associated with a particular Genre — of the kind noted for other domains considered in the broader project of which this study forms a part. With regard to textual temporality, as defined by verb forms and verb types, this

suggests that the texts produced by older subjects will reveal increased use in their narratives of timeless present tense, and of the irrealis categories of future tense, subjunctives, and modals — as compared with greater use of the past tense and perfective aspect in expository texts.

The present study, as noted, was confined to written texts. One direction in which it might be extended is in comparing the distribution of these same categories across oral texts produced by the same subjects in the five Languages. Just as verbal categories appear to be strongly diagnostic of inter-Genre differentiation, rather than of Age-related developments, so we predict that the same temporal contours will apply in largely similar ways, and to similar extents, in both written and spoken Modalities. Other analyses which might be undertaken would require more attention to interrelations between linguistic forms and discourse functions than was feasible in a study that involved as many variables as the present. Specifically, it might be worth analyzing the type of functions that are served by deviations from the dominant or anchor tense, e.g. for purposes of backgrounding, generalizing, and making evaluative commentary through use of the present tense in narratives — or for giving illustrative examples from history, or from personal anecdotal experience, through use of the past tense in expository texts. Another rich functional domain for which the present study provides a sound basis is how the phenomenon of SHIFTS between different tense and/or aspect markings, within texts, changes in scope and discourse function with relation to the independent variables of this study — Age, Language, and Modality, as well as Genre.

Notes

1. Work is now in progress on qualitative aspects of the same domain, examining where and how these categories are used, in order to explore the functional correlates of the quantitative profiles that emerge from the analyses reported here.

2. Modern Hebrew differs markedly from its classical Biblical antecedent in marking distinctions of tense, rather than aspect; but in other respects, it preserves morphosyntactic properties of Semitic languages (Berman 1978, Goldfajn 1998).

3. "Since tense locates the time of a situation relative to the situation of the utterance, we may describe tense as deictic" (Comrie 1976:2).

4. The present tense marks not only deictic temporal reference; it also covers various types of imperfective situations with the moment of speech as the reference point — including gnomic situations, i.e. those that apply to generic subjects, on-going activity, and habitual situations(Bybee et al 1994). The future tense tends to have modality senses, because modality has to do with degrees of centainty and the future is uncertain (Chung & Timberlake 1985:234). According to Comrie (1985:44), "the difference … between future on the one hand and present and past on the other should be treated as a difference in mood rather than one of tense."

5. For aspectual marking in Icelandic, see also Jónsson 1992, Thráinsson 1999, Ragnarsdóttir & Strömqvist 2000.

6. The coding manuals are available on request to the authors.

7. In Dutch, the percentages for present, past, and future tense are calculated on the basis of all clauses per text.

8. Perfect and perfective forms differ from one another in usage in ways not dealt with here; however, all forms marking the perfect and perfective are collapsed and treated as a single dependent variable in the present analyses. Note, however, that the results for this category are only comparable across Genre within each Language, but not cross-linguistically. (For a discussion of the similarity and differences between the perfect and perfective aspect, cf. Dahl 1985:129, Bybee et al. 1994:54–55).

9. The present tense counts include also "verbless" V-slots in Hebrew, since their use is strictly restricted to present tense. For Dutch, note that percentages for tense do not add up to 100%, since tense was calculated from the total number of clauses, and not all clauses contained a tensed verb.

10. The particular tense pattern of the J group is evidently attributable to the fact that 7 of the 20 subjects in the Icelandic junior-high group failed to narrate a particular incident that they had experienced; instead, they gave a more general account of what kids do, and therefore they used the present tense as their anchor. Two children out of the 20 at grade-school age did the same; but in the Icelandic high-school and adult groups, all narratives were anchored in the past tense, and all expositions had the present tense as their dominant or anchoring tense.

11. Some caution should be exercised in interpreting this finding, since the 2nd person can often have generic rather than personalized, deictic reference in Dutch.

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